Australian Government

UEG11 Gas Industry Training Package

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			BSBWHS303A; BSBWHS601A; BSBWHS602A; BSBWHS603A; CPPFES2005A; HLTHSE204D; MEM05004C; MEM05012C; MEM05015D; MEM05045B; MSAPMOHS110A; MSAPMOHS205A; MSAPMOHS216A; MSAPMOHS217A; MSAPMOPS400A; MSAPMPER200C; MSAPMPER201A; MSAPMPER202A; MSAPMPER300C; MSAPMPER400A; MSAPMSUP200A; MSAPMSUP210A; MSAPMSUP240A; MSAPMSUP303A; MSAPMSUP390A; MSS402061A; MSS402080A; PMAOHS211B; PMAOHS310B; PMAOHS311B; PMAOMIR210B; PMAOMIR346B; PMAOMIR407B; PMAOMIR418B; PMAOMIR430B; PMAOMIR444B; PMAOMIR512B; PMAOPS305B; PMAOPS312B; PMAOPS330B; PMAOPS402A; PMAOPS405A; PMAOPS410B; PMASUP311A; PMASUP410B; PMASUP444A; PMBWELD301B; PMBWELD302B; PMC563081C; RIICCM205D; RIICCM206D; RIICCM207D; RIICCM208D; RIICCM210D; RIICRC208D; RIIMPO304D; RIIMPO320D; RIIOHS202D; RIIOHS204D; RIIOHS205D; RIIOHS302D; RIIRIS301D; RIISAM201D; RIIWMG203D; TLIB2004A; TLIC2002A; TLIC3003A; TLIC3004A; TLIC3005A; TLIC4006A; TLIC4067A; TLID2003A; TLID2010A; TLID2016A; TLID3015A; TLID3023A; TLID3027A; TLID3033A;

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Version	Release Date	Authorisation	Comments
			TLID3036A; TLIF2006A; TLIF2010A; TLIF3063A; TLIF3093A; TLIF3096A; TLIF4007A; TLIF4065A; TLIF4066A; TLIF4094A; TLIL4059A; TLILIC2014B; TLILIC2015B; TLILIC3013A; TLILIC3018B; UEPMNT367A; UEPMNT368A; UEPOPS317B; UEPOPS336B; UEPOPS347B

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Version	Release Date	Authorisation	Comments
1.1 **UEG11**	**18 March 2013**	**ISC Upgrade**	**Qualifications amended** The following qualifications have been amended to include updated imported units, electives and editorial changes. UEG20211; UEG20311; UEG20411; UEG20511; UEG30211; UEG40311; UEG50211; UEG60211. **The following imported units were added** BSBWHS301A; CPCPCM4012A, HLTCPR211A **The following imported units were updated** BSBWOR301B; BSBCUS401B; BSBWHS501A; HLTFA311A; HLTFA302C; UEPOPS203B; UEPOPS205B; UEENEED101A; UEENEEE117A; UETTDREL14A; UETTDREL15A **The following imported units were updated to the current release:** UEENEEC001B; UEENEEE101A; UEENEEE102A; UEENEEE107A; UEENEEM020A; UEENEEM076A; UEENEEM080A;
UEG11 **Version 1**	**TBC**		**The following qualifications were added:** UEG20211; UEG20311; UEG20411; UEG20511; UEG30211; UEG40311; UEG50211; UEG60211 **The following qualifications were deleted:** UEG10106; UEG20106; UEG30110; UEG40106; UEG40206; UEG50106; UEG60106 **The following new units were added:**

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Version	Release Date	Authorisation	Comments
			UEGNSG003A; UEGNSG125A; UEGNSG128A; UEGNSG131A; UEGNSG212A; UEGNSG213A; UEGNSG214A; UEGNSG215A; UEGNSG320A; UEGNSG321A; UEGNSG322A; UEGNSG323A; UEGNSG324A; UEGNSG325A; UEGNSG326A; UEGNSG327A; UEGNSG328A; UEGNSG329A; UEGNSG613A; UEGNSG704A **The following units were removed:** USGNSG001A; UEGNSG101A; UEGNSG103A; UEGNSG124A; UEGNSG201A; UEGNSG211A; UEGNSG303A; UEGNSG601A; UEGNSG802A; **The following units were amended including editorial changes (see below)** UEGNSG102B; UEGNSG104B; UEGNSG105B; UEGNSG106B; UEGNSG107B; UEGNSG108B; UEGNSG109B; UEGNSG110B; UEGNSG111B; UEGNSG112B; UEGNSG113B; UEGNSG114B; UEGNSG115B; UEGNSG116B; UEGNSG117B; UEGNSG118B; UEGNSG119B; UEGNSG120B; UEGNSG121B; UEGNSG122B; UEGNSG123B; UEGNSG202B; UEGNSG203B; UEGNSG204B; UEGNSG205B; UEGNSG206B; UEGNSG207B; UEGNSG208B; UEGNSG209B; UEGNSG210B; UEGNSG301B; UEGNSG302B; UEGNSG304B; UEGNSG305B; UEGNSG306B; UEGNSG307B; UEGNSG308B; UEGNSG309B; UEGNSG310B; UEGNSG311B; UEGNSG312B; UEGNSG313B; UEGNSG314B; UEGNSG315B; UEGNSG316B; UEGNSG317B; UEGNSG318B; UEGNSG319B; UEGNSG401B; UEGNSG402B; UEGNSG501B; UEGNSG502B;

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Version	Release Date	Authorisation	Comments
			UEGNSG503B; UEGNSG504B; UEGNSG505B; UEGNSG602B; UEGNSG603B; UEGNSG604B; UEGNSG605B; UEGNSG606B; UEGNSG607B; UEGNSG608B; UEGNSG609B; UEGNSG610B; UEGNSG611B; UEGNSG612B; UEGNSG701B; UEGNSG702B; UEGNSG703B; UEGNSG801B; **The following imported units were added to UEG11 Version 1:** BSBFLM305C; BSBFLM306C; BSBFLM309C; BSBFLM311C; BSBINN301A; BSBCUS401A; BSBINM401A; BSBLED401A; BSBMGT402A; BSBMGT403A; BSBWOR401A; BSBWOR402A; BSBWOR404A; BSBCUS501A; BSBINM501A; BSBINN502A; BSBLED501A; BSBMGT502A; BSBMGT515A; BSBMGT516C; BSBOHS509A; BSBWOR501B; BSBWOR502B; CPCCLDG3001A; CPCCIRG3001A; CPCCLRG3002A; CPCCOHS1001A; HLTFA301C; HLTFA302A; RIIMPO308A; RIIMPO309A; RIIMPO318A; RIIMPO319A; RIIHAN309A; TLIC2025A; TLILIC2016A; TLIF2012A; TLILIC3017A; TLILIC3006A; TLILIC0012A; TLILIC3008A; TLILIC4009A; UEPOPS203A; UEPOPS205A; UETTDREL04B; UETTDREL05B; UEENEEC001B; UEENEED001B; UEENEEE017B; UEENEEE101A; UEENEEE102A; UEENEE107A **The following imported units were removed from UEG11 Version 1:** BCG1004A; BSBCMN105A; BSBINM201A; BSBCMN209A; BSBINM301A; BSBITU306A; BSBCUS301A; BSBCMN311B;

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Version	Release Date	Authorisation	Comments
			BSBCMN402A; BSBCMN411A; BSBFLM405B; BSBFLM501B; BSBFLM503B; BSBFLM506B; BSBFLM505B; BSBFLM509B; BSBFLM510B; BSBFLM512A; BSBMGT505A; BSBMGT507A; TLILIC108A; TLILIC1609A ; TLILIC1709A; PMAOPS205A; PMAOPS221A; PMAOPS223A; PMAOPS230A; PMAOPS304A; PMAOPS340A; UEPOPS412A; UEPOPS415A; UEPOPS417A; UEPOPS508A; UEPOPS348A; UEPOPS423A; UEPOPS350A; UEPOPS513A; UEPOPS506A; UEENEEE002B; UEENEEE005B; UEENEEE007B; UEENEEE008B **Editorial changes to Endorsed Units.** Removal of spaces in any of the unit or qualification codes. Replace ‘Version No in all footers across the whole Training Package. 3. For all Units: Change all Unit suffixes for version 1 units from ‘A’ to ‘B’ Add ‘1.1 Descriptor’ as a new title Move ‘3.1 License to practise’ to position 1.2 Move the sub-heading ‘2.1 Competencies’ from the left hand column to the right hand column Move the sub-heading ‘2.2 Literacy

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Version	Release Date	Authorisation	Comments
			and Numeracy skills' from the left hand column to the right hand column Include '3) Employability Skills' and text therein as a whole new section Revise the numbering of all subsequent sections to accommodate the inclusion of the Employability Skills section at 3) Include "All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies" as a new paragraph in '7) Required Skills and Knowledge' Change all references to sections within a unit to reflect the correct section (may require change as a result of the inclusion of the Employability Skills section at 3). Completely remove the 'Key Competencies' and 'Skills Enabling Employment' sections.

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Version	Release Date	Authorisation	Comments
UEG06 Version 1.1	**8 October 2010**	**EE-Oz ISC Upgrade** Authorised by NQC to meet Packaging Rule requirements and the inclusion of Sustainability Skills in qualifications.	Modification of the following qualifications to comply with NQC Packaging Rules. UEG30110 Certificate III in Gas Industry Operations Update of Imported Units to current versions BSBINM201A BSBCMN311B BSBCUS301A BSBFLM303C BSBFLM312B BSBINM301A BSBITU306A BSBWOR301A TLILIC2001A TLILIC1609A TLILIC1709A UEENEEM080A; UEENEEM020A UEENEEM076A UEENEEE002B UEENEEE005B UEENEEE007B UEENEEE008B
UEG06 Version 1	**May 2006**	**NQC**	Primary Release of Revised Training Package replacing UTG98

Preliminary Information

Preliminary Information

The Gas Industry

For the purposes of the Gas Industry Training Package, the term ‘Gas Industry’ refers to the industry which supplies natural gas via transmission and distribution pipelines, and Liquid Petroleum Gas (LPG) via cylinders, to a variety of domestic and manufacturing customers.

It does not refer to the extraction of gas from its source, nor the installation or maintenance of gas appliances within domestic or manufacturing environments.

The Gas Industry is a major supplier of energy to Australian homes and factories, supplying around 30% of industry energy needs and 20% of domestic needs.

The technical operation of the Gas Industry requires the involvement of individuals who may be employed as:

- engineers
- technicians
- project managers

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- line managers and supervisors
- field operatives

Employment within the industry may involve one or more of the following:

- design of transmission, distribution, processing and/or storage systems
- construction and maintenance of the above systems
- commissioning and decommissioning of the above systems
- metering and billing of customers.

Industry coverage

The formal industry coverage is under ANZSIC Code 3620 — the sector is defined as consisting of units mainly engaged in the manufacture of town gas from coal and/or petroleum or in the distribution of manufactured town gas, natural gas or the liquefied petroleum gas through a system of mains, including pipelines operated on own account.

During the last few years there has been privatisation of many enterprises and the out-sourcing of many functions and activities. The Gas Industry contributes greatly to the economic needs of Australia. The section below ‘The Gas Industry’ provides detail.

Regulatory arrangements

The industry is subject to a high level of legislation, regulation, codes of practice, guidelines and advisory standards related to the research, assembly, installation, construction, diagnostics, maintenance, commission, program, test or repair of networks, systems, equipment, components, appliances, facilities and the like in the field of gas supply. The regulatory requirements are, typically, based on the principle of gas transmission and distribution involving equipment, apparatus and systems, public safety, safety and health of individuals who work on pipelines, tankers, truck, systems and apparatus/equipment and other codes and practices related to the environment in which they operate.

Where possible, relevant and current regulatory requirements have been incorporated into this Training Package to assure outcomes are complementary to regulation. Where regulatory requirements are amended or introduced such outcomes are to be incorporated in training and assessment delivery. Continuous improvement and maintenance arrangements included in this Training Package will try to keep pace with changes.

Statutes, regulations and codes of practice

Federal, State and Territory Gas, Electricity, Telecommunications, Anti discrimination, Occupational Health and Safety and Work Cover Acts and Regulations typically cover the Industry. Additionally, there are many Australian/New Zealand and International Standards, codes of practices and regulations that apply and to which observance is essential for assuring life, property and commerce. Thus, relevant legislative, regulatory codes of practice, guidelines and advisory standard requirements form an integral part of the obligatory requirements in the vocational standards found in this Training Package.

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Other Industry Standards

It is recognised that the Gas Industry Standards do not cover all the competencies which are likely to be required and applied within Gas Industry workplaces. Nationally endorsed competency standards from other industries will be used where appropriate and the concept of cross-industry disciplinary standards will be encouraged. Specific rules have been included within this Training Package to address these arrangements.

Overview

Overview of Training Packages

What is a Training Package?

A Training Package is an integrated set of nationally endorsed competency standards, assessment guidelines and Australian Qualifications Framework (AQF) qualifications for a specific industry, industry sector or enterprise.

Each Training Package:

- provides a consistent and reliable set of components for training, recognising and assessing people's skills and may also have optional support materials.
- enables nationally recognised qualifications to be awarded through direct assessment of workplace competencies
- encourages the development and delivery of flexible training and assessment which suits individual and industry requirements
- encourages learning and assessment in a work-related environment which leads to verifiable industry outcomes.

How do Training Packages fit within the National Training Framework?

The National Training Framework applies nationally, is endorsed by the Ministerial Council for Vocational and Technical Education, and comprises the National Vocational Education and Training Regulator (NVR) or Australian Quality Training Framework (AQTF) and Training Packages endorsed by the National Skills Standards Council (NSSC).

How are Training Packages developed?

Training Packages are developed by Industry Skills Councils to meet the identified training needs of specific industries or industry sectors. To gain national endorsement of a Training Package, developers must provide evidence of extensive research, consultation and support within the industry area or enterprise.

How do Training Packages encourage flexibility?

Training Packages describe the skills and knowledge needed to perform effectively in the workplace, without prescribing how people should be trained.

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Training Packages acknowledge that people can achieve vocational competency in many ways by emphasising what the learner can do, not how or where they learned to do it. For example, some experienced workers might be able to demonstrate competency against the units of competency, and even gain a qualification without completing a formal training program.

With Training Packages, assessment and training may be conducted at the workplace, off-the-job, at a training organisation, during regular work, or through work experience, work placement, work simulation or any combination of these.

Who can deliver and assess using Training Packages?

Training and assessment, using Training Packages must be conducted by an RTO that has the qualifications or specific Competency Standard Units on its scope of registration, or that works in partnership with another RTO as specified in the AQTF 2010 or the Standards for NVR Registered Training Organisations 2012.

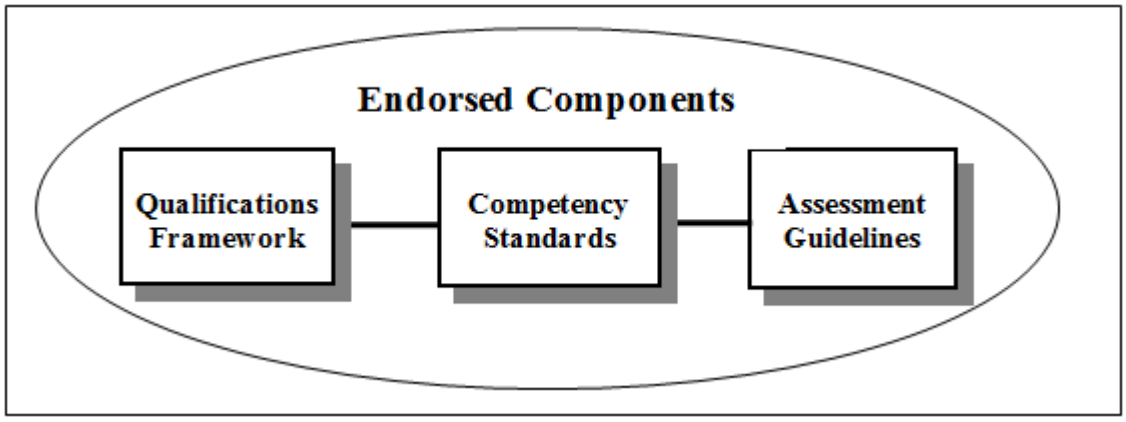
Training Package Components

Training Packages are made up of mandatory components endorsed by the NSSC and optional support materials.

Training Package Endorsed Components

The nationally endorsed components include the Qualification Framework, Competency Standards and Assessment Guidelines. These form the basis of training and assessment in the Training Package and, as such, they must be used.

Training Package Components



Competency Standards

Each Unit of Competency identifies a discrete workplace requirement and includes the knowledge and skills that underpin competency as well as language, literacy and numeracy and Occupational Health and Safety requirements. The Units of Competency must be adhered to in training and assessment to ensure consistency of outcomes.

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Qualifications Framework

Each Training Package provides details of those competency standards that must be achieved to award AQF qualifications. The rules around which Units of Competency can be combined to make up a valid AQF qualification in the Training Package are referred to as the "packaging rules". The packaging rules must be followed to ensure the integrity of validating recognised qualifications issued.

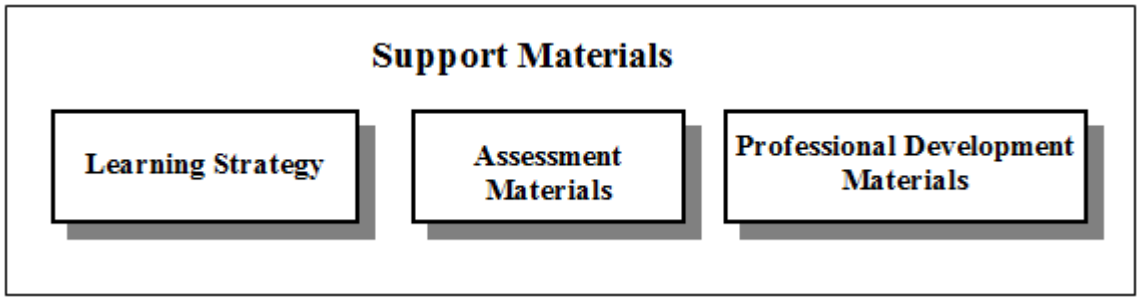
Assessment Guidelines

The Assessment Guidelines provide an industry framework to ensure all assessment outcomes meet industry needs and the nationally agreed standards as expressed in the Training Package and the AQTF 2010 or the Standards for NVR Registered Training Organisations 2012. The Assessment Guidelines must be followed to ensure the integrity of assessment leading to nationally recognised qualifications.

Training Package Support Materials

The endorsed components of a Training Package are complemented and supported by optional support materials that provide for choice in the design of training and assessment to meet the needs of industry and learners.

Training Package support materials can relate to single or multiple units of competency, an industry sector, a qualification or the whole Training Package. They tend to fall into one or more of the categories illustrated below.



Training Package support materials are produced by a range of stakeholders such as RTOs, individual trainers and assessors, private and commercial developers and Government agencies.

Where such materials have been quality assured through a process of ‘noting’ by the NSSC, they display the following official logo.

It is not compulsory to submit support materials for noting, any resources that meet the requirements of the Training Package can be used.

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There are agreed conventions for the national codes used for Training Packages and their components. Always use the correct codes, exactly as they appear in the Training Package, and with the title always following the code.

Training Package Qualification and Unit of Competency Codes

There are agreed conventions for the national codes used for Training Packages and their components. Always use the correct codes, exactly as they appear in the Training Package, and with the code always before the title.

Training Package Codes

Each Training Package has a unique five-character national code assigned when the Training Package is endorsed, for example UEG11. The first three characters are letters identifying the Training Package industry coverage and the last two characters are numbers identifying the year of endorsement.

Qualification Codes

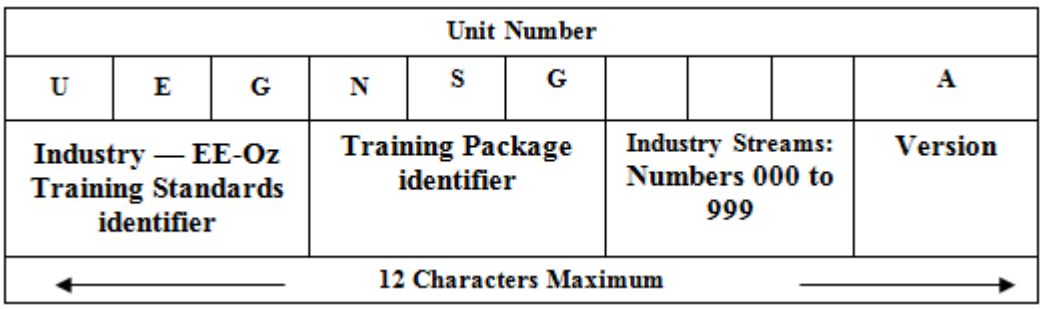
Within each Training Package, each qualification has a unique eight-character code, for example in this Training Package, UEG30211. Qualification codes are developed as follows:

- The first three letters identify the Training Package
- the first number identifies the qualification level (noting that, in the qualification titles themselves, Arabic numbers are not used)
- The next two numbers identify the position in the sequence of the qualification at that level; and
- The last two numbers identify the year in which the qualification was endorsed. (Where qualifications are added after the initial Training Package endorsement, the last two numbers may differ from other Training Package qualifications, as they identify the year in which those particular qualifications were endorsed).

Unit of Competency Codes

Within each Training Package, each competency standard unit has a unique code. Unit of Competency codes are assigned when the Training Package is endorsed, or when new units are added to an existing Training Package. Unit codes are developed as follows:

- A typical code is made up of a maximum of 12 characters; normally a mixture of upper-case letters and numbers. For example in this Training Package the following approach has been adopted:



- The first three characters signify the Training Package and up to eight characters, relating to an industry sector, function or skill areas follow.

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- The last character is always a letter and identifies the unit of competency version. An ‘A’ at the end of the code indicates that it is the original unit of competency. ‘B’ or another incremented version identifier means that minor changes have been made. Typically, this would mean that wording has changed in the range statement or evidence guide, providing clearer intent.
- Where changes are made that alter the outcome, a new code is assigned and the unit title is changed.

Training Package Qualification and Unit of Competency Titles

There are agreed conventions for titling Training Packages and their components. Always use the correct titles, exactly as they appear in the Training Package, and with the code always placed before the title.

Training Package Titles

The title of each endorsed Training Package is unique and relates to the industry’s broad coverage.

Qualification Titles

The title of each endorsed Training Package qualification is unique. Qualification titles use the following sequence:

- first, the qualification is identified as either Certificate I, Certificate II, Certificate III, Certificate IV, Diploma or Advanced Diploma
- this is followed by the words ‘in’ for Certificates I to IV and ‘of’ for Diploma and Advanced Diploma
- then the industry descriptor follows, for example Gas Industry Operations and
- if applicable, the occupational or functional stream follows in brackets, for example (Computer Systems).

Unit of Competency Titles

Each Unit of Competency title is unique. Unit of Competency titles describe the competency outcome concisely, and are written in sentence case. For example:

- UEGNSG117A Plan and implement the data acquisition and metering requirements of a gas system
- FNBLIF29A Undertake risk assessment

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The Gas Industry Training Package

Introduction to the UEG11 Gas Industry Training Package

The Training Package for the Gas Industry (UEG11) has been developed on behalf of the EnergyUtilities Industry and community stakeholders from all States/Territories of Australia by E-Oz Energy Skills Australia, with the support of the Department of Industry (DOI). E-Oz Energy Skills Australia operates under a charter from the Australian Government as a declared National ElectroComms and EnergyUtilities Industry Skills Council for the ElectroComms and EnergyUtilities Industry. EnergyUtilities Industry practitioners, regulators, government agencies and community stakeholders contributed much effort, support and knowledge in its development.

The first Training Package for this industry was released in 1998, as the Training Package for the Gas Industry (UTG98). At that time it broke new ground for setting nationally recognised qualifications comprised of Competency Standard Units as they related to work performance. It assisted in benchmarking the design of training and assessment processes and practices.

The Training Package can to be used by all those involved in the delivery and assessment of competencies that cover Gas Distribution; Transmission; Cathodic Protection; Control Centres; LPG — storage, processing and transportation; Meter Reading and Billing and Systems Operations.

Users of this Industry Training Package include:

- large multi-energy utilities companies
- State Training and Recognition Authorities which will use the Training Package as the pre-eminent industry's advice to government; and as a statement of the minimum requirements to be satisfied by Registered Training Organisations in the delivery of services.
- State/Territory Industry Training Bodies/Industry Skills Councils which will use the Training Package to underpin their relationship with, and support for, the State training and recognition authorities quality systems, including providing advice
- Registered Training Organisations which will issue qualifications and or statements of attainment, based on the requirements outlined in the Training Package which contains the vocational standards for industry
- Individual candidates/trainees/learners who will use the provisions of the Training Package to establish their responsibilities and to protect their prerogatives
- Organisations in mapping their human resource processes and arrangements to the National benchmark Competency Standard Units in this Training Package.

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AQF Qualifications in the UEG11 Training Package Version 2

Table 1 — Qualifications Mapping of this Training Package UEG11 -Version 2.0 to the former Training Package UEG11-Version 1.1

AQF Code	Certificate II Qualifications (UEG11 V2.0)	Certificate II Qualifications (UEG11 – V1.0)	E = Equivalent N = Not Equivalent
UEG20114	Certificate II in Gas Supply Industry Operations	UEG20211 – Certificate II in Gas Industry Pipeline Operations	N
UEG20114	Certificate II in Gas Supply Industry Operations	UEG20311 - Certificate II in Gas Industry Transmission Pipeline Construction	N
UEG20114	Certificate II in Gas Supply Industry Operations	UEG20411 - Certificate II in Gas Industry Cylinder Operations	N
UEG20114	Certificate II in Gas Supply Industry Operations	UEG20511 - Certificate II in Gaseous Fuel Delivery Operations	N

AQF Code	Certificate III Qualifications (UEG11 V2.0)	Certificate III Qualifications (UEG11 – V1.0)	E = Equivalent N = Not Equivalent
UEG30114	Certificate III in Gas Supply Industry Operations	UEG30211 - Certificate III in Gas Supply Industry Operations	N

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AQF Code	Certificate IV Qualifications (UEG11 V2.0)	Certificate IV Qualifications (UEG11 – V1.0)	E = Equivalent N = Not Equivalent
UEG40114	Certificate IV in Gas Supply Industry Operations	UEG40311 - Certificate IV in Gas Supply Industry Operations	N

AQF Code	Diploma Qualifications (UEG11 V2.0)	Diploma Qualifications (UEG11 – V1.0)	E = Equivalent N = Not Equivalent
UEG50114	Diploma of Gas Supply Industry Operations	UEG50211 - Diploma of Gas Supply Industry Operations	N

AQF Code	Advanced Diploma Qualifications (UEG11 V2.0)	Advanced Diploma Qualifications (UEG11 – V1.0)	E = Equivalent N = Not Equivalent
UEG60114	Advanced Diploma of Gas Supply Industry Operations	UEG60211 - Advanced Diploma of Gas Supply Industry Operations	N

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Table 2 AQF qualifications in this Training Package

AQF	Qualification Code	Qualification Title
2	UEG20114	Certificate II in Gas Supply Industry Operations
3	UEG30114	Certificate III in Gas Supply Industry Operations
4	UEG40114	Certificate IV in Gas Supply Industry Operations
5	UEG50114	Diploma of Gas Supply Industry Operations
6	UEG60114	Advanced Diploma of Gas Supply Industry Operations

Table 3 — Qualifications Mapping of this Training Package UEG11 -Version 2.0 to the former Training Package UEG06-Version 1.1

AQF Code	Certificate I Qualifications (UEG11)	Certificate I Qualifications (UEG06 – V1.1)	E = Equivalent N = Not Equivalent
	Deleted	UEG10106 Certificate I in Utilities Industry Operations	N

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AQF Code	Certificate II Qualifications (UEG11)	Certificate II Qualifications (UEG06 – V1.1)	E = Equivalent N = Not Equivalent
	Deleted	UEG20106 Certificate II in Utilities Industry Operations	N
UEG20211	Certificate II in Gas Industry Pipeline Operations	New Qualification	N
UEG20311	Certificate II in Gas Industry Transmission Pipeline Construction	New Qualification	N
UEG20411	Certificate II in Gas Industry Cylinder Operations	New Qualification	N
UEG20511	Certificate II in Gaseous Fuel Delivery Operations	New Qualification	N

AQF Code	Certificate III Qualifications (UEG11)	Certificate III Qualifications (UEG06 – V1.1)	E = Equivalent N = Not Equivalent
	Deleted	UEG30110 Certificate III in Gas Industry Operations	N
UEG30211	Certificate III in Gas Supply Industry Operations	New Qualification	N

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AQF Code	Certificate IV Qualifications (UEG11)	Certificate IV Qualifications (UEG06 – V1.1)	E = Equivalent N = Not Equivalent
	Deleted	UEG40106 Certificate IV in Gas Industry Operations	N
	Deleted	UEG40206 Certificate IV in Gas Industry Transmission Pipeline	N
UEE40311	Certificate IV in Gas Supply Industry Operations	New Qualification	N

AQF Code	Diploma Qualifications (UEG11)	Diploma Qualifications (UEG06 – V1.1)	E = Equivalent N = Not Equivalent
	Deleted	UEG50106 Diploma in Gas Industry Operations	N
UEG50211	Diploma in Gas Supply Industry Operations	New Qualification	N

AQF Code	Advanced Diploma Qualifications (UEG11)	Advanced Diploma Qualifications (UEG06 – V1.1)	E = Equivalent N = Not Equivalent
	Deleted	UEG60106 Advanced Diploma in Gas Industry Operations	N
UEG60211	Advanced Diploma in Gas Supply Industry	New Qualification	N

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AQF Code	Advanced Diploma Qualifications (UEG11)	Advanced Diploma Qualifications (UEG06 – V1.1)	E = Equivalent N = Not Equivalent
	Operations		

Table 4 — Qualifications Mapping of UEG06 Version 1.1 to the previous Version UEG06 version 1

Detailed below is a summary qualifications mapping of the former Gas Industry Training Package (UEG06) to the new Gas Industry Training Package. Note only Qualifications which have been revised are included.

AQF Code'	Relates to	Nature of Relationship	Equivalent = E Not Equivalent = N
UEG30110	Certificate III in Gas Industry Operations	Modification of UEG30106 comply with NQC Packaging Rules.	E

Table 5 — Qualifications Mapping of the former Gas Industry Training Package UTG98 and UEG06 -Version 1

Detailed below is a summary qualifications mapping of the former Gas Industry Training Package UTG98 and UEG06 Gas Industry Training Package Version 1.

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AQF Code'	Relates to	Nature of Relationship	Equivalent — full, part, or no
UEG10106	Certificate I in Utilities Industry Operations	New Utilities generic qualification developed in this Training Package Review process.	No equivalent
UEG20106	Certificate II in Utilities Industry Operations	Update of previous Certificate II in Gas Industry Operations qualification from UTG98 with an extension in focus to incorporate all of utilities scope.	No equivalent
UEG30106	Certificate III in Gas Industry Operations	Update of the previous Certificate III in Gas Industry Operations, with a new structure and units.	No equivalent
UEG40106	Certificate IV in Gas Industry Operations	Update of the previous Certificate IV in Gas Industry Operations, with a new structure and units.	No equivalent
UEG40206	Certificate IV in Gas Industry Transmission Pipeline	New Gas qualification for Transmission Pipelines developed in this Training Package Review process.	No equivalent
UEG50106	Diploma of Gas Industry Operations	Update of the previous Diploma of Gas Industry Operations, with a new structure and units.	No equivalent
UEG60106	Advanced Diploma of Gas Industry Operations	Update of the previous Advanced Diploma of Gas Industry Operations, with a new structure and units.	No equivalent

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Summary of Units of Competency in the UEG11 Version 2 Training Package

Full details of the Competency Standards Units in this Training Package including: Unit Code, Title, Weighting Points, AQF Level, Pre-requisites and Qualification Mapping, are contained in the Index of Competency Standard Units, in Volume 1 Part 3 Competency Standards Index of this Training Package.

Table 6 – UEG11 Gas Industry Training Package - Competency Standard Units

Discipline Identifier	Unit Discipline	Series	No. of CSUs
A	Independent Discipline Unit	000	3
B	Cross Discipline Common Unit	100	28
C	Distribution Discipline	200	19
D	Transmission Discipline	300	27
E	Cathodic Protection Discipline	400	2
F	Control Centre Discipline	500	8
G	Liquefied Petroleum Gas (LPG) Discipline	600	11
H	Support Services Discipline	700	7
I	Pressure Control Discipline	800	5
Total CSUs			**110**

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A mapping Competency Standard Units including the relationship between units which have been amended, added or deleted from versions of Gas Industry Training Package and equivalences is included in Volume 1 Part 3 Competency Standards Index of this Training Package.

Table 7 - Imported Units of Competency in the UEG11 Gas Industry Training Package Version 2

Training Package	Training Package Title	Version	No. of Units
BSB07	Business Services Training Package	9.0	33
CPC08	Construction, Plumbing and Services Training Package	8.0	5
CPP07	Property Services Training Package	13.0	1
HLT	Health Training Package	5.1	4
MEM05	Metal and Engineering Training Package	10.1	4
MSA07	Manufacturing Training Package	8.2	15
MSS11	Sustainability Training Package	2.1	2
PMA08	Chemical, Hydrocarbons and Refining Training Package	4.0	19
PMB07	Plastics, Rubber and Cablemaking Training Package	2.0	2
PMC10	Manufactured Mineral Products	1.0	1

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RII	Resources and Infrastructure Industry Training Package	3.2	20
TLI10	Transport and Logistics Training Package	3.0	38
UEE11	Electrotechnology Training Package	1.3	8
UEP12	Electricity Supply Industry - Generation Sector Training Package	2.1	7
UET12	Electricity Supply Industry - Transmission, Distribution and Rail Sector Training Package	2.0	1
Total Imported CSUs			**160**

Full details of the Imported Units in this Training Package including: Unit Code, Title, Weighting Points, AQF Level, Pre-requisites and Qualification Mapping, are contained in the Index of Competency Standard Units in Volume 1 Part 3 Competency Standards Index of this Training Package.

Please consult the source Training Package for information, including equivalences, in relation to new and updated imported units included in this version of the Gas Industry Training Package.

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Language, Literacy, Numeracy

The Competency Standards have been written to reflect the technical and operational needs of industry and include appropriate language and literacy requirements. A new and specific section related to literacy and numeracy skills has been included in the Competency Standard Units for the purposes of providing advice to RTOs on the entry requirements for each unit. It characterises how participants are to be best equipped to achieve the required, writing and numeracy skill levels.

A specific section for Literacy and Numeracy Skills has been included in Volume 2 of this Training Package. In addition, there is an explanation of their relationship to the Performance Criteria and their assessment in accordance with the critical aspects of evidence within each Competency Standard Unit.

Access, Equity and Cultural Diversity

The skills required of employees in the Gas Industry sector of the EnergyUtilities Industry are comprehensive, with many employment opportunities available. The Competency Standards reflect the range of knowledge and skills and there application, required in the Industry. They are written in a non-exclusive manner so as to increase the participation rates of under-represented community groups and to minimise unintentional bias.

As a matter of policy in the Gas Industry and in this Training Package there is no exclusion of any persons from participating in competency development, training and employment. This includes encouraging under-represented groups such as indigenous peoples, people with disabilities, women, and people from rural and remote areas or cultural diversity to join the Industry.

Acknowledgments

The Board of Directors of the ElectroComms and Energy Utilities Industry Skills Council Ltd trading as E-Oz Energy Skills Australia wishes to acknowledge the important developmental roles played by training advisory and delivery organisations, enterprises, employer and employee representatives, industry practitioners, regulatory authorities, individuals and community stakeholders. Without their level of commitment and support this Training Package would not exist in its current form.

The Board acknowledges and thanks the following organisations and individuals:

- Gas Industry Training Package Review National Steering Group
- Gas Industry Training Package Review Technical Reference Group

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- the Chairs, Executive Officers, and Members of the E-Oz Energy Skills Australia State and Territory Network (ITABs) and their various sub-committees
- the State and Territory Training Authorities
- the State and Territory Regulatory Authorities
- OHS Skills Development and Practical Guidance Team of the National Occupational Health and Safety Commission
- industry sector RTOs and practitioners for contributing to and being supportive of the project
- industry sector practitioners for contributing to and being supportive of the project.
-

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Outline of this Training Package

Outline of this Training Package

The endorsed components of the Training Package are contained in two volumes. Volume 1 covers the overall Package framework and completion requirements for qualifications, and Volume 2 the content details for respective parts and sub-sections of Volume 1. Both volumes form an integrated whole and are not to be used independently of each other.

Volume 1: Structure and Overview

Qualification Framework

This section describes how the qualifications, scope/descriptions, composition and content are structured. Completion and issuance requirements are provided as well as advice on flexibility arrangements, with entry and exit pathways and articulation arrangements. Titles and codes of the list of qualifications to be issued are also included.

Competency Standards

This section describes how the competency standards were developed (in broad terms), the industry coverage they apply to, as well as the format and construction of the individual Competency Standard Units. The index of Competency Standard Units and their scope/description is included in this part. Matters related to language, literacy and numeracy, access, equity and cultural diversity and regulatory arrangements, for which the Competency Standard Units may apply, is also included. The Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Training Package link directly to the Competency Standard Units and no Unit is to be used in isolation or exported without these interrelated components.

All the Competency Standard Units in the Gas Industry Training Package are detailed in Volume 2, Part 2, each is listed according to its respective industry discipline area.

Part 3 – Assessment Guidelines

This section outlines how the assessment guidelines inform a Registered Training Organisation (RTO) on the infrastructure requirements they will need to enable them to carry out training delivery assessment activities related to the Training Package. The guidelines include assessment systems, the role of RTOs, assessment pathways, recognition arrangements, assessor qualifications and sources of information.

Volume 2: Competency Standard Units — Content and scope

Volume 2 Part 1 contains a Definitions/Glossary, which provides a description/explanation of certain/assigned words that appear in this document.

Volume 2 Part 2 contains the competency standard units in their respective disciplines, eg Transmission Units, Distribution Units, Operation Units, Cathodic Protection Units.

Volume 2 Part 2 also contains the details of Essential Knowledge and Associated Skills referred to in each Competency Standard Unit.

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Volume 2 Part 3 provided information on the application of Language Literacy and Numeracy aspects identified with each Competency Standard Unit.

Note: The two volumes form an integrated whole and must not be used independently of each other.

Gas Industry Training Package Layout

The revised Gas Industry Training Package has been developed, reviewed and validated through extensive industry consultation. It reflects the views of a wide cross-section of the industry and its key stakeholders/practitioners throughout Australia.

The Training Package has been constructed as a two volume set. Volume 1 covers the overall Package framework and completion requirements for qualifications. Volume 2 includes the content details of parts and sub-sections of Volume 1. The two volumes form an integrated whole and are not to be used independently of each other.

Volume 1

Preliminary Information

The Gas Industry

Overview of Training Packages

The Gas Industry Training Package

Part 1 Qualifications Framework

Part 2 Competency Standards Index

Part 3 Assessment Guidelines

Appendix A — New Apprenticeships

Appendix B — Sample Assessment Instruments

Enclosures:

- Enclosure A: List of Sample Assessment Instruments
- Enclosure B: Administrative Forms
- Enclosure C: Glossary of Terms

Preliminary Information

Definitions/Glossary

Competency Standards

Competency Standard Units

Independent Units

Cross Discipline Common Units

Distribution Discipline

Transmission Discipline

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Cathodic Protection Discipline
Control Centre Discipline
Liquefied Petroleum Gas (LPG) Discipline
Support Services Discipline
Pressure Control Discipline
Imported Units
Essential Knowledge and Associated Skills
Language, Literacy, Numeracy and Employability Skills
Language, Literacy and Numeracy

Important Note to Users

Training Packages are not static documents. They are amended periodically to reflect the latest industry practices and are version controlled. It is essential that the latest version is always used.

Check the version number before commencing training or assessment

This Training Package is Version 2 – check whether this is the latest version by going to www.training.gov.au and locating information about the Training Package. Alternatively, contact the Training Package developer and technical content custodian ElectroComms and EnergyUtilities Industry Skills Council Ltd, trading as E-Oz Energy Skills Australia http://www.e-oz.com.au/ to obtain relevant content advice and confirm the latest version number.

Explanation of version number conventions

The primary release Training Package is Version 2. When changes are made to a Training Package, sometimes the version number is changed and sometimes it is not, depending on the extent of the change. When a Training Package is reviewed, it is considered to be a new Training Package for the purposes of version control and is Version 1. Do not confuse the version number with the Training Package's national code (which remains the same during its period of endorsement).

Explanation of the review date

The review date (shown on the title page and in the footer of each page) indicates when the Training Package is expected to be reviewed to meet changes in technology and other circumstances. The review date is not an expiry date. Endorsed Training Packages and their components remain current until they are reviewed or replaced.

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1.0.00 Qualification Framework

Volume 1 Part 1 Qualification Framework

1.1.00 The Australian Qualifications Framework

1.0 The Australian Qualification Framework

What is the Australian Qualifications Framework?

A brief overview of the Australian Qualifications Framework (AQF) follows. For a full explanation of the AQF, see the AQF Implementation Handbook.
http://www.aqf.edu.au/wp-content/uploads/2013/05/AQF-2nd-Edition-January-2013.pdf

The AQF provides a comprehensive, nationally consistent framework for all qualifications in post-compulsory education and training in Australia. In the vocational education and training (VET) sector it assists national consistency for all trainees, learners, employers and providers by enabling national recognition of qualifications and Statements of Attainment.

Training Package qualifications in the VET sector must comply with the titles and guidelines of the AQF. Endorsed Training Packages provide a unique title for each AQF qualification which must always be reproduced accurately.

Qualifications

Training Packages can incorporate the following eight AQF qualifications:

- Certificate I in ...
- Certificate II in ...
- Certificate III in ...
- Certificate IV in ...
- Diploma of ...
- Advanced Diploma of ...
- Vocational Graduate Certificate of ...
- Vocational Graduate Diploma of ...

On completion of the requirements defined in the Training Package, a Registered Training Organisation (RTO) may issue a nationally recognised AQF qualification. Issuance of AQF qualifications must comply with the advice provided in the AQF Implementation Handbook and the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

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Statement of Attainment

A Statement of Attainment is issued by a Registered Training Organisation when an individual has completed one or more units of competency from nationally recognised qualification(s)/courses(s). Issuance of Statements of Attainment must comply with the advice provided in the current AQF Implementation Handbook and the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

Under the AQTF 2010 or the Standards for NVR Registered Training Organisations 2012, RTOs must recognise the achievement of competencies as recorded on a qualification or Statement of Attainment issued by other RTOs. Given this, recognised competencies can progressively build towards a full AQF qualification.

AQF Guidelines and Learning Outcomes

The AQF Implementation Handbook provides a comprehensive guideline for each AQF qualification. A summary of the learning outcome characteristics and their distinguishing features for each VET related AQF qualification is provided below.

Certificate II

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and skills would prepare a person to perform in a range of varied activities or knowledge application where there is a clearly defined range of contexts in which the choice of actions required is usually clear and there is limited complexity in the range of operations to be applied.

Performance of a prescribed range of functions involving known routines and procedures and some accountability for the quality of outcomes.

Applications may include some complex or non-routine activities involving individual responsibility or autonomy and/or collaboration with others as part of a group or team.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

demonstrate basic operational knowledge in a moderate range of areas;

apply a defined range of skills;

apply known solutions to a limited range of predictable problems;

perform a range of tasks where choice between a limited range of options is required;

assess and record information from varied sources;

take limited responsibility for own outputs in work and learning

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Certificate III

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to Australian environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.

Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the section of equipment, services or contingency measures and within known time constraints.

Applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

demonstrate some relevant theoretical knowledge

apply a range of well-developed skills

apply known solutions to a variety of predictable problems

perform processes that require a range of well-developed skills where some discretion and judgement is required

interpret available information, using discretion and judgement

take responsibility for own outputs in work and learning

take limited responsibility for the output of others

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Certificate IV

Characteristics of Learning Outcomes

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop Australian criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills.

Applications involve responsibility for, and limited organisation of, others.

Distinguishing Features of Learning Outcomes

Do the competencies enable an individual with this qualification to:

demonstrate understanding of a broad knowledge base incorporating some theoretical concepts

apply solutions to a defined range of unpredictable problems

identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas

identify, analyse and evaluate information from a variety of sources

take responsibility for own outputs in relation to specified quality standards

take limited responsibility for the quantity and quality of the output of others

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Diploma

Characteristics of Learning Outcomes

Breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and coordination.

The self directed application of knowledge and skills, with substantial depth in some areas where judgement is required in planning and selecting appropriate equipment, services and techniques for self and others.

Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may include participation in teams including teams concerned with planning and evaluation functions. Group or team coordination may be involved.

The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

Distinguishing Features of Learning Outcomes

Do the competencies or learning outcomes enable an individual with this qualification to:

demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas

analyse and plan approaches to technical problems or management requirements

transfer and apply theoretical concepts and/or technical or creative skills to a range of situations

evaluate information, using it to forecast for planning or research purposes

take responsibility for own outputs in relation to broad quantity and quality parameters

take some responsibility for the achievement of group outcomes

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Advanced Diploma

Characteristics of Learning Outcomes

Breadth, depth and complexity involving analysis, design, planning, execution and evaluation across a range of technical and/or management functions including development of Australian criteria or applications or knowledge or procedures.

The application of a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts in relation to either varied or highly specific functions. Contribution to the development of a broad plan, budget or strategy is involved and accountability and responsibility for self and others in achieving the outcomes is involved.

Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures.

The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.

Distinguishing Features of Learning Outcomes

Do the competencies or learning outcomes enable an individual with this qualification to:

demonstrate understanding of specialised knowledge with depth in some areas

analyse, diagnose, design and execute judgements across a broad range of technical or management functions

generate ideas through the analysis of information and concepts at an abstract level

demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills

demonstrate accountability for personal outputs within broad parameters

demonstrate accountability for personal and group outcomes within broad parameters

Regulatory Arrangements

Competency Standard Units, Skill Sets and Qualifications in this Training Package have been developed in consultation with the relevant industry technical and business Regulators so that, where appropriate, these align to the requirements of legislation, regulations and mandated codes of practice.

Licensing and regulatory authorities will recognise a range of Qualifications, Units or Skill Sets contained within this Training Package for respective licensing, registration or accreditation purposes. In constructing these qualifications, E-Oz Energy Skills Australia and respective Regulators have given consideration to the link between the issuance of the qualification and the respective regulatory requirements. It is expected that the assessment and preferred training regime which meets the competency outcomes of the qualification and assessment, will therefore meet the regulatory requirements.

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In recognising this interrelationship, every effort has been made to ensure currency in regulatory requirements, thus RTOs must ensure they are observed. This includes utilising any recommended industry training program designed to meet the Competency Standard Units and/or Qualification outcomes related to licensing/registration applications.

As RTO's registered under the Australian Quality Training Framework (AQTF) or National Vocational Education and Training Regulator (NVR) requirements are given full responsibility for deeming a learner/apprentice competent for the respective Competency Standard Units making up a Training Package Qualification or Skill Set, the RTO shall also provide all the necessary documentation (including results preferably percentile based) as required by the regulatory authority to support an application of eligibility for a relevant license, registration or accreditation.

It should be noted that regulatory authorities have advised that the quality of Registered Training Organisations issuing a qualification for regulatory purposes will be monitored. Where deficiencies are identified, regulators may deem it necessary to introduce appropriate actions, including an additional 'external' assessment following the issuing of the qualification to satisfy eligibility requirements for issuing the licence.

Exporting Gas Industry CSUs from this Training Package

Competency Standard Units in this Training Package are interrelated and linked with the Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Training Package This also includes information related to language, literacy and numeracy; access, equity, cultural diversity and regulatory arrangements which apply to respective Competency Standard Units. No Qualification or Competency Standard Unit can be used in isolation or imported into another Training Package, Qualification, Skill Set or Accredited Course without these interrelated components.

1.1.01 Gas Industry Qualification Framework

1.1 Gas Industry Qualification Framework

The qualifications listed in this Training Package adhere to the advice provided in the current version of AQF Implementation Handbook. See www.aqf.edu.au.

The qualifications have been designed to comply with the provisions of and comply with the National Skills Standards Council's (NSSC) Training Package Development Handbook Guidelines
Qualifications Framework to include:

- One Third or more of total units required to gain a VET qualification will be electives.
- The choice of Elective units can be broadened, to allow one sixth of total units to be included from other qualifications in a Training Package, other Training Packages and accredited courses.
- All units as either core or electives.

See:
http://www.nssc.natese.gov.au/__data/assets/pdf_file/0017/71243/GuidelinesQualFrameworks.pdf

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It should be noted that under these provisions Licensed and trade occupations are exempt from these measures.

Application of the NSSC Flexibility Formula

Industry has obtained formal agreement to the continued use of its unit weighting system for valuing individual competency standards and the effort required to achieve a qualification under these provisions.

Thus, for the qualifications in this Training Package, the terms "total units" and "total units required to gain a qualification" and the fractions thereof referred to above are calculated using the weighting points assigned to respective Competency Standard Units (CSU) rather than by a count of individual units. The Qualification Completion Requirements table below summarises the relevant weighting points values to satisfy the packaging rules of each qualification in accordance with the NSSC Policy.

To allow for the inclusion of units imported from other qualifications and other Training Packages and accredited courses under this weighting points system, industry also gained agreement to the following process for importing and valuing such imported units, as follows:

- Customisation of these qualifications is permitted in order to meet learner's individual needs, their current, intended or future work context, and a variety of possible industry environments.
- For this purpose the importation of units up to one sixth of the total points value required for completion of a qualification is permitted from either one or a combination of the following three sources:
  - Elsewhere in this Training Package
  - Other Training Packages
  - Accredited Courses
- Units selected for importation under these provisions shall be first packaged in the source Training Package or Accredited Course at the AQF level of the target qualification.
- The importation of units from these sources shall be within the boundaries of the integrity of the intended qualification outcomes, the requirements of the Australian Qualifications Framework, the Australian Quality Training Framework or National Vocational Education and Training Regulator and all regulatory requirements applicable to the imported unit and/or the target qualification.
- Minimum points (10) will be allocated to units imported from sources other than those managed by E-Oz Energy Skills Australia. Advice on the valuation of units selected for importation from sources other than E-Oz Training Packages shall be sought from the relevant E-Oz Technical Advisory Committee.

Advice shall be sought from the relevant state/territory registration and accreditation body to determine if there is a requirement for an extension to a Registered Training Organisation's scope of registration in relation to the inclusion of such imported unit/s into a qualification.

Advice shall be sought from the relevant registration and accreditation body regarding the requirement to record and report the inclusion of units imported under these provisions for the purposes of awarding a qualification.

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Where units have been imported under these provisions, this shall be reported to E-Oz Energy Skills Australia so that industry is aware of such units and can consider the endorsement of these into the relevant qualification(s).

Qualification Mapping

Please refer to Volume 1 Preliminary Information for:

- Modifications History of Qualifications in this Training Package
- Mapping of the qualifications in this version of the Gas Industry Training Package to previous versions, including equivalences.

1.1.02 Qualification Pathways

1.2 Qualification Pathways

This Training Package provides open entry at each of the AQF levels. Arrows indicate the pathways that can be followed no matter at which qualification level you enter.

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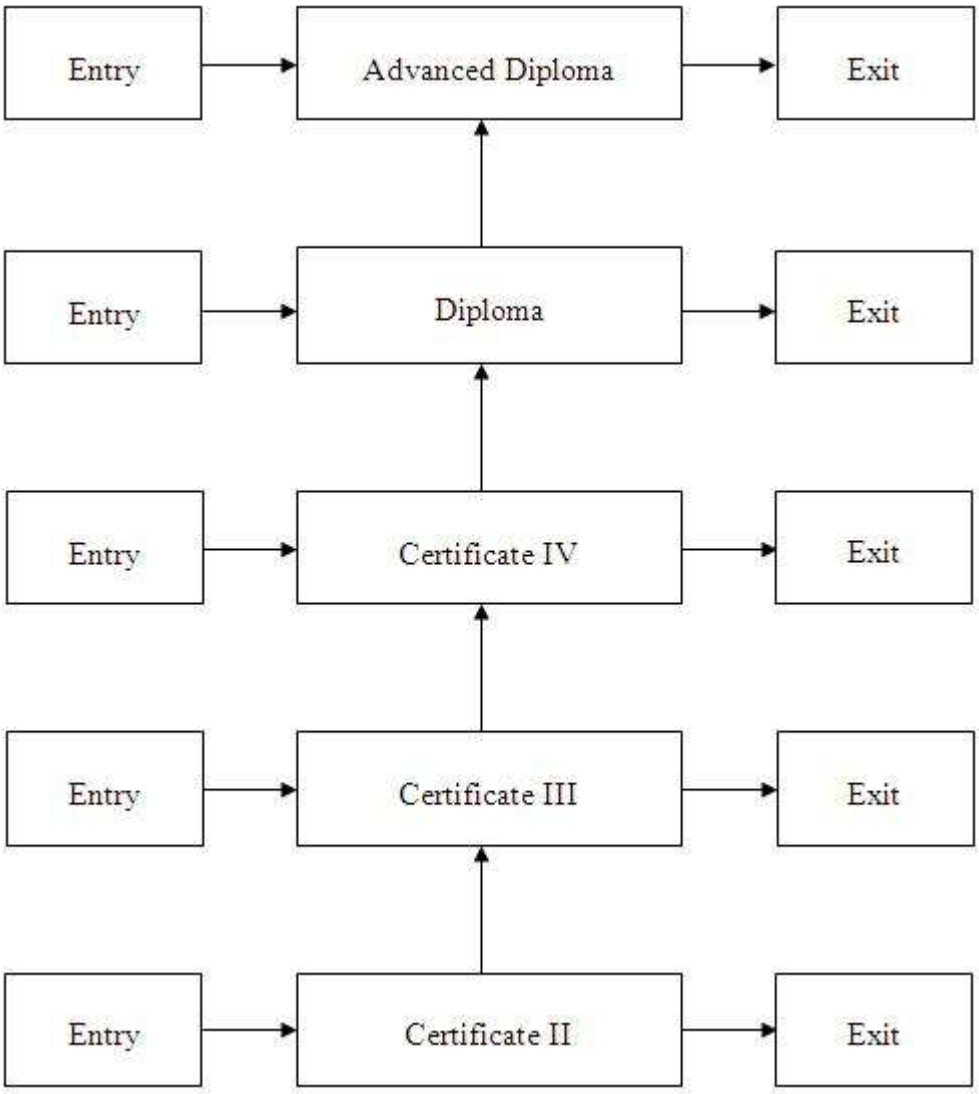
Entry and Exit Points for Gas Industry Qualification



For more information on the latest Training Package vocational standards qualifications and qualification pathways visit ElectroComms and EnergyUtilities Industry Skills Council Ltd trading as E-Oz Energy Skills Australia at www.e-oz.com.au.

Articulation pathways

Qualification articulation and entry and exit arrangements are based on the specific training and education requirements endorsed by the industry. The construction of the Competency standard units and the group of units that make up an individual qualification are of particular significance to the operational, regulatory and safety arrangements of the industry. Each qualification provides a unique vocational outcome that can be used for Australian apprentices as entry-level contracted employees.

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All qualifications are open entry and open exit and are available for use as Australian Apprenticeship entry-level contracted employment. Australian apprenticeship arrangements are subject to State/Territory statutory requirements, prescriptions within industrial instruments and policies of State/Territory training authorities and RTOs. Reference to what applies should therefore be made from respective statutory bodies in the first instance.

Australian Apprenticeship arrangements therefore apply to all qualifications; however, they are subject to State/Territory statutory requirements, prescriptions within industrial instruments and policies of State/Territory training authorities.

Open entry is provided into all qualifications, Open entry is available at all levels provided the prospective learner's general education and competency level is equivalent to the outcome of four to five years of secondary school. Additionally, entry levels provide an option for potential learners to choose a qualification suited to their needs while providing flexibility for recruitment action by employers. Entry into all qualifications is also available through Recognised Prior Learning (RPL) arrangements.

School Based Australian Apprenticeships

Australian Apprenticeships are declared in each State or Territory according to the particular processes of the jurisdiction and requirements identified by industry in the State or Territory. Declarations for particular qualifications as either Traineeships or Apprenticeships are made accordingly and therefore the same qualification may be classified differently between jurisdictions. Whilst E-Oz has no control over these processes and declarations, it would recommend that the following qualifications be considered when addressing School based Australian Apprenticeships:

Qualification Code	Qualification Title
Nil	Nil

Access, Equity and Cultural Diversity

The skills required of employees in the Gas Industry are comprehensive. The qualifications in this Training Package reflect the range of competencies required and are written in a non-exclusive manner so as to increase the participation rates of all equity and disadvantaged groups and to minimise unintentional bias.

Language, Literacy and Numeracy

A specific section related to language, literacy and numeracy skills has been included in each Competency standard unit to provide advice on the entry requirements for each unit. It provides Registered Training Organisations (RTOs), industry and career aspirants with relevant language, literacy and numeracy entry-level advice for each Competency standard unit that would maximise an individual's prospects for successful completion of the unit and, where appropriate, the qualification.

The language, literacy and numeracy definitions and requirements are described in more detail in Volume 2, Part 3 — Language, Literacy and Numeracy Skills. Each Competency standard unit in Volume Part 2 references the respective language, literacy and numeracy skills that apply.

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Australian Apprenticeship – Application

Australian Apprenticeships are work related competency programs designed for entry-level contracted employment for new entrants to the industry. For further information regarding Australian Apprenticeships and their application in relation to this Training Package refer to Appendix A - Australian Apprenticeship – application. Appendix A is located at the end of Volume 1 Part 3 – Assessment Guidelines.

1.1.03 Qualification Employability Skills Statements

1.3 Qualification Employability Skills Statements

The Employability Skills facets for each AQF level are described below. These are broad industry requirements that may vary depending on qualification packaging rules and electives selected.

Employability Skills Summary for all Qualifications at AQF Level 2

The following table contains a summary of the Employability Skills as identified by the Gas Industry for all UEG11 Gas Training Package qualifications at AQF level 2. The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Communication
Collect, organise and understand information related to the work task and its relevant safety procedures
Communicate ideas and information to enable confirmation of work requirement and specifications
Co-operate with other workers/customers and report outcomes and/or any problems
Access, read and comprehend safety instructions and procedures
Share information via speech and in writing
Prepare time sheets
Teamwork
Work with others to generate and review ideas
Work effectively as an individual and as a member of a team
Work with others and in a team to identify work needs and review ideas against those needs
Relate to people from a range of social, cultural and ethnic backgrounds and physical

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and mental abilities
Contribute to a positive culture of compliance within an organisation
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements
Provide feedback
Problem Solving
Apply lateral thinking ideas to generate solutions in response to work problems
Anticipate or clarify problems to avoid interruptions to work flows and processes
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and work place safety at all times
Initiative & Enterprise
Identify and comply with all requirements and standards for work in the Gas industry
Apply enterprise best practice and quality systems
Interact effectively with both internal and external industry stakeholders
Initiate and follow through on the implementation of industry standards in the workplace
Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Identify related industry compliance requirements
Maintain relevant industry and work records
Establish clear implementation goals and deliverables
Collect, analyse and organise work task information
Apply time management prioritising techniques
Self Management
Plan own work within given task parameters
Set, monitor and satisfy personal work goals

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Accept responsibility for given tasks
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job
Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Seek learning opportunities
Take control and manage own learning
Adopt an open approach to Australian ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Monitor and respond to learning process achievements
Technology
Use workplace technology related to the particular work tasks including tools, devices, instruments and materials
Attain and maintain required technical accreditation/authority under the industry standards
Attain and maintain IT skills relevant to the Gas industry
Be willing to gain knowledge and skills relevant to Australian and emerging technologies

Employability Skills Summary for all Qualifications at AQF Level 3

The following table contains a summary of the Employability Skills as identified by the Gas Industry for all UEG11 Gas Training Package qualifications at AQF level 3. The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Communication
Collect, organise and understand information related to the work task and its relevant safety procedures

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Communicate ideas and information to enable confirmation of work requirement and specifications
Communicate information using drawing, diagrams, schedules and manuals
Communicate and/or report work outcomes and/or any problems
Communicate ideas, information and advice to co-workers/clients to enable confirmation of product/work requirements and specifications
Communicate effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Collect, organise and understand information related to a work task and its relevant safety procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Document work quotations and tender support schedules
Prepare time sheets
Prepare documentation on particular work tasks including evaluations, reports, timesheets and costings
Prepare and present formal reports to clients and/or co-workers
Teamwork
Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others and in a team to identify work needs and review ideas against those needs
Work with other and in a team to evaluate and report on work tasks and outcomes
Work with others and in a team to present information to a client and/or co-worker
Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
Influence individuals and teams
Develop and maintain networks for implementation and maintenance of industry

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standards in relation to workplace computer systems
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements
Coach/mentor others and provide feedback
Problem Solving
Apply lateral thinking ideas to generate solutions in response to work problems
Apply operational research and research management skills
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes
Clarify problems and enterprise ideas to avoid interruptions to work flow/processes
Use testing techniques to anticipate or clarify problems to avoid interruptions to work flows and process
Generate ideas and alternatives
Analyse information to identify opportunities to develop solutions
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and work place safety at all times
Initiative & Enterprise
Recognise and respond to circumstances outside instructions or personal competence
Be proactive and apply strategies to overcome work blockages
Adopt proactive relationships with clients and co-workers
Identify and comply with all requirements and standards for work in the Gas industry
Apply enterprise best practice and quality systems
Generate ideas and translate into workplace actions and outcomes
Interact effectively with both internal and external industry stakeholders
Initiate and follow through on the implementation of the industry standards in the workplace
Translate ideas into action

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Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Plan and organise activities to enable choices of maintenance methods of equipment, tools and related work documentation
Plan activities to enable choice of analysis/testing techniques of work outcomes and systems
Develop industry work plans including key performance indicators
Use mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Use computing capabilities that enable the use of mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Identify related industry compliance requirements
Identify, access and allocate required implementation resources
Maintain relevant industry and work records
Maintain relevant industry/work record systems
Maintain industry related records
Understand computer systems, their relationships and applications in the workplace
Establish clear implementation goals and deliverables
Monitor and optimise resource utilisation
Self Management
Plan own work within given task parameters
Set, monitor and satisfy personal work goals
Accept responsibility for given tasks
Clarify and confirm work instructions
Clarify own roles, goals, prerogatives and limitations in relation to the industry

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Take responsibility for industry obligations
Evaluate and monitor own performance
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job
Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Seek learning opportunities
Provide technical instruction and learning assistance to assigned apprentices, trainees or other less experienced workers
Take control and manage own learning
Adopt an open approach to Australian ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Monitor and respond to learning process achievements
Technology
Use workplace technology to communicate with the client, document and present information
Use electronic information systems to communicate with co-workers and/or other related personnel
Use workplace technology related to the particular work tasks including tools, devices, instruments and materials
Use work place technology to collate, organise and maintain work documentation and information
Attain and maintain required technical accreditation/authority under the industry standards
Attain and maintain IT skills relevant to the Gas industry
Be willing to learn Australian IT skills
Be willing gain knowledge and skills relevant to Australian and emerging

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technologies

Employability Skills Summary for all Qualifications at AQF Level 4

The following table contains a summary of the Employability Skills identified by the Gas Industry for all UEG11 Gas Training Package qualifications at AQF level 4. The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Communication
Collect, organise and understand information related to the work task and its relevant safety procedures
Communicate ideas and information to enable confirmation of work requirement and specifications
Communicate information using drawing, diagrams, schedules and manuals
Communicate and/or report work outcomes and/or any problems
Communicate effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Share essential business information
Document work quotations and tender support schedules
Process approvals/authorities for industry activities
Prepare time sheets
Prepare documentation on particular work tasks including evaluations, reports, timesheets and costings
Prepare and present formal reports to clients and/or co-workers or other related personnel
Teamwork
Work with others by recognising dependencies and using co-operative approaches to optimise work flow and productivity

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Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others to identify work needs and review ideas against those needs
Work with others to evaluate and report on work tasks and outcomes
Work with others to present information to a client and/or co-worker(s)
Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
Influence individuals and teams
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements
Coach/mentor others and provide feedback
Problem Solving
Use testing and analysis techniques to anticipate and/or clarify problems and plan around them to avoid interruptions to work flows/processes
Apply lateral thinking to generate solutions in response to work problems
Apply analytical techniques to anticipate design issues and product needs
Apply operational research and research management skills
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes
Analyse information to identify opportunities to develop solutions
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and work place safety at all times
Initiative & Enterprise
Recognise and respond to circumstances outside instructions or personal competence
Create Australian opportunities for the enterprise
Be proactive and apply strategies to overcome work blockages
Adopt a proactive relationship with clients/co-workers

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Identify work needs by applying research techniques
Identify and comply with all requirements and standards for work in the Gas industry
Apply best practice and quality systems
Apply computer systems and applications to ensure quality and efficiency of work tasks and documentation
Generate ideas and translate into workplace actions and outcomes
Interact effectively with both internal and external industry stakeholders
Initiate and follow through on the implementation of industry standards in the workplace
Translate ideas into action
Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Plan and organise activities to enable choices of maintenance methods of equipment, tools and related work documentation
Plan activities to enable choice of analysis/testing techniques of work outcomes and systems
Plan and organise activities to enable the most appropriate testing/analysis procedures to be implemented
Plan activities to enable choice of the best computer systems/programs for application on a particular work task
Develop industry work plans including key performance indicators
Use mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Use computing capabilities that enable the use of mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Identify related industry compliance requirements
Identify, access and allocate required implementation resources

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Maintain relevant industry and work records
Maintain relevant industry/work record systems
Maintain industry related records
Understand computer systems, their relationships and applications in the workplace
Establish clear implementation goals and deliverables
Monitor and optimise resource utilisation
Self Management
Plan own work within given task parameters
Maintain current knowledge of computer systems and capabilities
Set, monitor and satisfy personal work goals
Accept responsibility for given tasks
Clarify and confirm work instructions
Clarify own roles, goals, prerogatives and limitations in relation to the industry
Take responsibility for industry obligations
Evaluate and monitor own performance
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job
Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Maintain current knowledge of computer systems programs and there relevant applications
Seek learning opportunities
Provide technical instruction and learning assistance to assigned apprentices, trainees or other less experienced workers
Take control and manage own learning

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Adopt a open approach to Australian ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Monitor and respond to learning process achievements
Technology
Use workplace technology to document and present information
Use workplace technology to communicate with clients, co-workers and/or other related personnel
Use workplace technology related to particular work tasks including tools, equipment, devices, instruments and materials
Use workplace technology for data analysis/investigation
Attain and maintain required technical accreditation/authority under the industry standards
Attain and maintain IT skills relevant to the Gas industry
Be willing to learn Australian IT skills
Use workplace technology to collate, organise and maintain work documentation and information
Use computer applications as a management tool

Employability Skills Summary for all Qualifications at AQF Level 5

The following table contains a summary of the Employability Skills identified by the Gas Industry for all UEG11 Gas Training Package qualifications at AQF level 5. The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Communication
Collect, organise and understand information related to the work task and its relevant safety procedures
Communicate ideas and information to enable confirmation of work requirement and specifications
Communicate information using drawing, diagrams, schedules and manuals

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Communicate and/or report work outcomes and/or any problems
Communicate effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Share essential business information
Document work quotations and tender support schedules
Process approvals/authorities for industry activities
Prepare time sheets
Prepare documentation on particular work tasks including evaluations, reports, timesheets and costings
Prepare and present formal reports to clients and/or co-workers or other related personnel
Use aesthetic ideas to plan visual presentation material
Teamwork
Work with others by recognising dependencies and using co-operative approaches to optimise work flow and productivity
Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others to identify work needs and review ideas against those needs
Work with others to evaluate and report on work tasks and outcomes
Work with others to present information to a client and/or co-worker(s)
Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
Influence individuals and teams
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements

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Coach/mentor others and provide feedback
Problem Solving
Use testing and analysis techniques to anticipate and/or clarify problems and plan around them to avoid interruptions to work flows/processes
Apply lateral thinking to generate solutions in response to work problems
Apply analytical techniques to anticipate design issues and product needs
Apply operational research and research management skills
Apply contingency management techniques to variable circumstances
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes
Analyse information to identify opportunities to develop solutions
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and work place safety at all times
Initiative & Enterprise
Recognise and respond to circumstances outside instructions or personal competence
Create Australian opportunities for the enterprise
Be proactive and apply strategies to overcome work blockages
Adopt a proactive relationship with clients/co-workers
Identify work needs by applying research techniques
Identify and comply with all requirements and standards for work in the Gas industry
Apply best practice and quality systems
Apply computer systems and applications to ensure quality and efficiency of work tasks and documentation
Generate ideas and translate into workplace actions and outcomes
Interact effectively with both internal and external industry stakeholders
Initiate and follow through on the implementation of industry standards in the workplace

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Translate ideas into action
Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Plan and organise activities to enable choices of maintenance methods of equipment, tools and related work documentation
Plan activities to enable choice of analysis/testing techniques of work outcomes and systems
Plan and organise activities to enable the most appropriate testing/analysis procedures to be implemented
Plan activities to enable choice of the best computer systems/programs for application on a particular work task
Develop industry work plans including key performance indicators
Use mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Use computing capabilities that enable the use of mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Identify related industry compliance requirements
Identify, access and allocate required implementation resources
Maintain relevant industry and work records
Maintain relevant industry/work record systems
Maintain industry related records
Understand computer systems, their relationships and applications in the workplace
Establish clear implementation goals and deliverables
Monitor and optimise resource utilisation
Self Management
Plan own work within given task parameters

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Set, monitor and satisfy personal work goals
Accept responsibility for given tasks
Clarify and confirm work instructions
Clarify own roles, goals, prerogatives and limitations in relation to the industry
Take responsibility for industry obligations
Evaluate and monitor own performance
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job
Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Maintain current knowledge of computer systems programs and there relevant applications
Seek learning opportunities
Provide technical instruction and learning assistance to assigned apprentices, trainees or other less experienced workers
Take control and manage own learning
Adopt an open approach to Australian ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Monitor and respond to learning process achievements
Technology
Use workplace technology to document and present information
Use workplace technology to communicate with clients, co-workers and/or other related personnel
Use workplace technology related to particular work tasks including tools, equipment, devices, instruments and materials

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Use workplace technology for data analysis/investigation
Attain and maintain required technical accreditation/authority under the industry standards
Attain and maintain IT skills relevant to the Gas industry
Be willing to learn Australian IT skills
Use workplace technology to collate, organise and maintain work documentation and information
Use computer applications as a management tool

Employability Skills Summary for all Qualifications at AQF Level 6

The following table contains a summary of the Employability Skills identified by the Gas Industry for all UEG11 Gas Training Package qualifications at AQF level 6. The Employability Skills facets described here are broad industry requirements that may vary depending on qualification packaging options.

Communication
Collect, organise and understand information related to the work task and its relevant safety procedures
Communicate ideas and information to enable confirmation of work requirement and specifications
Communicate information using drawing, diagrams, schedules and manuals
Communicate and/or report work outcomes and/or any problems
Communicate effectively in oral and written form
Access, read and comprehend safety instructions and procedures
Undertake negotiations if there are conflicts in work requirements and/or priorities
Share industry information
Share essential business information
Share essential IT/Computing information
Document work quotations and tender support schedules
Process approvals/authorities for industry activities

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Prepare documentation on particular work tasks including evaluations, reports, timesheets and costings
Prepare and present formal reports to clients and/or co-workers or other related personnel
Use aesthetic ideas to plan visual presentation material
Teamwork
Work with others by recognising dependencies and using co-operative approaches to optimise work flow and productivity
Work with others to generate ideas and review
Work effectively as an individual and as a member of a team
Work with others to identify work needs and review ideas against those needs
Work with others to evaluate and report on work tasks and outcomes
Work with others to present information to a client and/or co-worker(s)
Relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
Influence individuals and teams
Develop and maintain networks for the implementation and maintenance of industry knowledge, standards and requirements
Coach/mentor others and provide feedback
Problem Solving
Use testing and analysis techniques to anticipate and/or clarify problems and plan around them to avoid interruptions to work flows/processes
Apply lateral thinking to generate solutions in response to work problems
Apply analytical techniques to anticipate design issues and product needs
Apply operational research and research management skills
Apply contingency management techniques to variable circumstances
Clarify and identify work issues and apply processes to avoid interruptions to work flow/processes

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Analyse information to identify opportunities to develop solutions
Identify, assess and prioritise work risks to maintain efficiency, quality, productivity and work place safety at all times
Initiative & Enterprise
Recognise and respond to circumstances outside instructions or personal competence
Create Australian opportunities for the enterprise
Be proactive and apply strategies to overcome work blockages
Adopt a proactive relationship with clients/co-workers
Identify work needs by applying research techniques
Identify and comply with all requirements and standards for work in the Gas industry
Apply best practice and quality systems
Apply computer systems and applications to ensure quality and efficiency of work tasks and documentation
Generate ideas and translate into workplace actions and outcomes
Interact effectively with both internal and external industry stakeholders
Initiate and follow through on the implementation of industry standards in the workplace
Translate ideas into action
Planning & Organising
Plan and organise activities including the maintenance and layout of own worksite and obtain equipment and materials to avoid work flow interruptions or wastage
Plan and organise activities to enable choices of maintenance methods of equipment, tools and related work documentation
Plan activities to enable choice of analysis/testing techniques of work outcomes and systems
Plan and organise activities to enable the most appropriate testing/analysis procedures to be implemented
Plan activities to enable choice of the best computer systems/programs for application on a particular work task

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Develop industry work plans including key performance indicators
Use mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Use computing capabilities that enable the use of mathematical ideas and techniques to correctly complete measurements, calculate quantities, estimate material, labour and overhead requirements and accurately cost the product/service
Identify related industry compliance requirements
Identify, access and allocate required implementation resources
Maintain relevant industry and work records
Maintain relevant industry/work record systems
Maintain industry related records
Understand computer systems, their relationships and applications in the workplace
Understand business systems and their relationships
Establish clear implementation goals and deliverables
Monitor and optimise resource utilisation
Self Management
Plan own work within given task parameters
Set, monitor and satisfy personal work goals
Accept responsibility for given tasks
Clarify and confirm work instructions
Clarify own roles, goals, prerogatives and limitations in relation to the industry
Take responsibility for industry obligations
Evaluate and monitor own performance
Apply systematic and effective time management
Learning
Satisfy the competency requirements for the job

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Maintain current knowledge of tools, devices, instruments, materials, work practices and systems
Maintain current knowledge of computer systems programs and there relevant applications
Seek learning opportunities
Provide technical instruction and learning assistance to assigned apprentices, trainees or other less experienced workers
Take control and manage own learning
Adopt an open approach to Australian ideas and techniques
Commit to and promote a culture of continuous learning
Set realistic learning goals for self development
Monitor and respond to learning process achievements
Technology
Use workplace technology to document and present information
Use workplace technology to communicate with clients, co-workers and/or other related personnel
Use workplace technology related to particular work tasks including tools, equipment, devices, instruments and materials
Use workplace technology for data analysis/investigation
Attain and maintain required technical accreditation/authority under the industry standards
Attain and maintain IT skills relevant to the Gas industry
Be willing to learn Australian IT skills
Use workplace technology to collate, organise and maintain work documentation and information
Use computer applications as a management tool

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The Employability Skills described above are representative of the Gas Industry in general and may not reflect enterprise specific requirements or job roles. Learning and assessment strategies for each qualification should be based on the requirements of the units of competency comprising the qualification and the Assessment Guidelines, Section 1.3.00.

1.1.04 Qualification Scope, Work Function and Environment

1.4 Qualification Scope, Work Function and Environment

The qualifications described in this section of the Training Package have been designed and structured by industry in consultation with a range of stakeholders including regulators, RTOs and the community. They address identified work functions and work environments and facilitate worthwhile career pathways within the industry.

The qualification structures that follow must be read in conjunction with Section 1.2.03 — Competency Standards, Unit Construction.

UEG20114 Certificate II in Gas Supply Industry Operations

Description and scope of the qualification

This qualification provides competencies for entry level gas supply industry activities in transmission, distribution pipeline and cylinder operations and functions as outline below:

- Distribution pipeline activities include laying distribution infrastructure (including pipes), developing gas pipeline infrastructure and reading gas meters in industrial, commercial and rural environments, on pipelines, associated facilities and equipment; and control centres.
- Transmission pipeline activities include right of way preparation, rigging operations, hydrotesting, laying pipelines, operating transmission pipeline construction plant and equipment and conducting minor mechanical maintenance.
- Gas cylinder operations for domestic and industrial supply of gaseous fuels include checking, testing, maintaining and filling of gaseous fuel cylinders and the storage, handling, loading, transportation and distribution of cylinders in accordance with the relevant Australian Standards and regulatory requirements

Typical work function	Typical work environment
Laying utilities distribution infrastructure including pipes, developing gas pipeline infrastructure; reading utilities meters.	Includes working and carrying out activities in industrial, commercial and rural environments on pipelines, control centres and associated facilities and equipment.

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UEG30114 Certificate III in Gas Supply Industry Operations

Description and scope of the qualification

This qualification provides competencies to conduct Gas Supply Industry activities including installation, maintenance, fault find and repair, operations of distribution and transmission gas pipelines, cylinders and associated equipment.

Typical work function	Typical work environment
Undertaking and supervising work on a Gas Industry distribution and transmission pipelines; billing processes; cathodic protection processes and system operations processes.	Includes working and carrying out activities in industrial, commercial and rural environments on pipelines, control centres and associated facilities and equipment.

UEG40114 Certificate IV in Gas Supply Industry Operations

Description and scope of the qualification

This qualification provides competencies to supervise and conduct Gas Supply Industry activities including installation, diagnostics and maintenance of distribution and transmission gas pipelines, cylinders and associated equipment.

Typical work function	Typical work environment
Management of processes for the transmission and distribution of natural gas and the storage and processing of LPG. This includes gas distribution control centre operations and transmission pipeline operations.	Includes working and carrying out activities in industrial, commercial and rural environments on pipelines, control centres and associated facilities and equipment.

UEG50114 Diploma of Gas Supply Industry Operations

Description and scope of the qualification

This qualification provides competencies to manage Gas Supply Industry activities including management of projects covering the installation, diagnostics and maintenance of distribution and transmission gas pipelines and associated equipment.

Typical work function	Typical work environment
Performing management functions such as promotion of continuous improvement, managing gas system projects, managing physical resources and OHS systems.	Includes managing activities in industrial, commercial and rural environments on gas pipelines, control centres and associated facilities and equipment.

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UEG60114 Advanced Diploma of Gas Supply Industry Operations

Description and scope of the qualification

This qualification provides competencies to design and manage Gas Supply Industry activities and projects.

Typical work function	Typical work environment
Performing management functions such as managing gas system environmental compliance, managing financial and physical resources, planning and implementing systems, managing customer services.	Includes managing activities in industrial, commercial and rural environments on gas pipelines, control centres and associated facilities and equipment.

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1.1.05 Qualifications and Packaging Rules

1.5 Qualifications and Packaging Rules

The following table details the full range of qualifications in this version of the Gas Industry Training Package, the completion requirements for each qualification and their respective structure and composition. These qualifications have been designed to comply with the National Quality Council's Packing Rules for Flexibility initiative.

Each qualification is described by the number of core and elective weighted points required for completion and issue of the qualification under the AQF.

Respective qualifications have at least two Elective Groups from which elective competencies may be drawn. Where a range of weighting points is set for a group e.g. 60-120, the lower number indicates both the minimum weighting points required from that particular elective group for completion and the larger number is the maximum required weighting points which may be selected from that group for a valid qualification completion.

Where the lower number for a group is 0 no competencies are required to be selected from that group, however, sufficient weighted points must be selected from other groups to meet the required total elective weighted points for completion.

Note: Individuals may select elective units to a weighting point total greater than the maximum specified for completion from a particular group. Where this is done weighted points in excess of the specified maximum cannot be counted for completion of the qualification.

Where a Competency Standard Unit has pre-requisite Competency Standards Unit requirements, such pre-requisite units shall be completed and their weighted points counted toward qualification completion.

Full details of each qualification follow Table 1 -Qualification Completion Values, below.

Table 1 – Qualification Completion Values

Qualification Code	Qualification Title	Total Core	Total Elective	Elective Units Groups					
				Group A	Group B	Group C	Group D	Group E	Group F

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UEG20114	Certificate II in Gas Industry Operations	120	240	0-60	180-240				
UEG30114	Certificate III in Gas Supply Industry Operations	300	660	0-160	0-180	330-660	0-130		
UEG40114	Certificate IV in Gas Supply Industry Operations	290	990	0-220	0-180	0-670	200-990		
UEG50114	Diploma of Gas Supply Industry Operations	280	1260	0-260	0-180	330-670	300-810	180-340	
UEG60114	Advanced Diploma of Gas Supply Industry Operations	400	1760	0-360	0-180	330-670	300-810	180-340	440-540

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1.1.06 Skill Sets

1.6 Skill Sets

Definition

Skill sets are defined as single units of competency, or combinations of units of competency from an endorsed Training Package, which link to a licence or regulatory requirement, or defined industry need.

Skill sets are a way of publicly identifying logical groupings of units of competency which meet an identified need or industry outcome. Skill sets are not qualifications.

Where skill sets are identified in a Training Package, the Statement of Attainment can set out the competencies a person has achieved in a way that is consistent and clear for employers and others. This is done by including the wording ‘these competencies meet [insert skill set title or identified industry area] need’ on the Statement of Attainment. This wording applies only to skill sets that are formally identified as such in the endorsed Training Package. See the 2013 edition of the AQF Implementation Handbook for advice on wording on Statements of Attainment. See:
http://www.aqf.edu.au/wp-content/uploads/2013/05/AQF-2nd-Edition-January-2013.pdf

Identified Skill Sets

There are no identified skill sets in this Training Package.

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1.2 Competency Standards

Volume 1 Part 2

Competency Standards

1.2.00 Introduction

Volume 1 Part 2 Competency Standards

2.0 Introduction

This section outlines how the competency standards were developed in broad terms. The industry coverage they can apply to, as well as the format and construction of the individual Competency Standard Units is provided. Matters related to language, literacy and numeracy, access and equity and the regulatory environment in which the units may apply is also covered, as is the interrelated Essential Knowledge and Associated Skills. Competency Standard Units in this Training Package are interrelated and linked with the Definitions/Glossary and Essential Knowledge and Associated Skills sections. No Competency Standard Unit can be used in isolation or exported without these interrelated components.

A definitions/glossary to complement the Competency Standard Units is included in Volume 2 Part 1. It provides a description of the words used in the Competency Standard Units to define terms in more detail. It also forms an integral part of each unit. An Essential Knowledge and Associated Skills section follows the Competency Standard Units and also forms an integrated part of each unit.

Included in this section is:

- an index of the Competency Standard Units with their weighting points
- an index of imported Competency Standard Units and their weighting points
- A mapping of Competency Standard Units in this version of the Training Package and previous versions

1.2.01 Development of Competency Standards for the Gas Industry

2.1 Development of Competency Standards for the Gas Industry

The inaugural National Steering Committee Workshop held in March 1996 developed a framework for the Australian Gas Industry by analysis of existing information and the application of the workshop participants' industry knowledge. The National Steering Group Committee took a broad view of the Gas Industry in order to develop a comprehensive framework that covered all industry and industry-related activities at the conceptual level.

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Functional workshops were conducted during July and August of 1996. The information obtained from these workshops formed the basis for the development of a comprehensive listing of competency standards for functions performed in the Gas Industry.

The draft standards were verified through invited comment from various Industry representatives and additional workshops held in Sydney and Perth in late 1996 and January 1997.

The first release of the Gas Industry Training Package (UTG98) was October 1998, with a subsequent update made to the Training Package in October 2001.

1.2.02 Industry Coverage

2.2 Industry Coverage

The Australian Gas Industry is described by ANZIC as the class that consists of units mainly engaged in the manufacture of town gas from coal and/or petroleum or in the distribution of manufactured town gas, natural gas or liquefied petroleum gas through a system of mains, including pipelines operated "on own account". This Training Package delivers competencies and qualifications.

In terms of the regulatory environment, The Australian Competition and Consumer Commission regulates most gas transmission pipelines in Australia, with the exception of Western Australia, which have a State-based regulator. Regulators based in each State jurisdiction, except the Northern Territory, regulate gas distribution networks.

Since implementation of the 1997 Natural Gas Pipelines Access Agreement, most Australian gas distribution networks and pipelines have been regulated in accordance with the National Third Party Access Code for Natural Gas Pipeline Systems (the National Gas Code).

The Australian Gas Associations describe the National Gas Code and its ramifications to industry as follows (AGA website, March 2003):

The National Gas Code is a significant part of national competition policy reforms, and aims to promote free and fair trade in gas. The code sets out principles for access to Australian Natural Gas transmission and distribution pipeline services. It allows third parties to obtain access to pipelines within an independent regulatory framework, with arbitration available to resolve disputes.

Under the code, regulated gas distribution network and pipeline operators must submit an access arrangement to an independent regulator for approval. An access arrangement must set out the terms and conditions of access, including reference tariffs for reference services. The regulator undertakes a consultation process in deciding whether to approve a proposed access arrangement, and may require amendments. These access arrangements are subject to periodic review.

The National Gas Code and its application are core issues of concern for Australian Gas Association members.

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The Gas Industry Training Package describes the skills and knowledge which pertain to vocations within the field of gas transmission, distribution and the storage and transportation of LPG. It offers a choice and range of qualifications or Competency Standard Units through appropriate training for organisations and personnel seeking formal recognition of respective skills and knowledge. It is recognised that other training pathways may exist in the form of other national Training Packages and arrangements.

The prime objective of the Gas Industry Training Package is to establish the standards of performance in terms of skills and knowledge required for safe, productive and satisfying work covering a range of work activities. RTOs can develop appropriate industry-approved training programs to meet these objectives or indeed to meet other Training Package objectives. The determining factor will be choice — choice of Training Package, and choice of provider — RTO. Where New Apprenticeships apply, choice in relation to funding to RTOs will be guided by policy enunciated by State and Territory Training Authorities.

Other Industry Standards

It is recognised that the Gas Industry Standards do not cover all the competencies, which are likely to be required and applied within organisations and workplaces. Nationally endorsed competency standards from other industries can be used where appropriate, provided they are imported in accordance with the criteria outlined in this Training Package.

Language, Literacy, Numeracy

The competency standards have been written to reflect the technical and operational needs of industry and include appropriate language, literacy and numeracy requirements. Please refer to Volume 2 Part 3 for more information on these requirements.

Access and Equity

The knowledge and skills required of employees in the Gas Industry are comprehensive. The Competency Standards reflect the range of knowledge and skills required and are written in a non-exclusive manner so as to increase the participation rates of under-represented groups and to minimise unintentional bias.

Contextualisation

In the Competency Standard Units, ‘notes’ have been placed against respective aspects that include scope, Performance Criteria, Range Statement and Essential Knowledge and associated skills and other related sections. The insertion of these ‘notes’ is primarily to provide users and support material developers with examples of the form and type of technical content principles, technology, equipment or processes required. The examples should be treated as information that adds clarity and provides guidance regarding the depth and breadth of learning objectives.

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As the type, form, process or technique of technology and equipment may change it is expected and indeed incumbent on RTOs to be current in the content and delivery arrangements. It is therefore appropriate for RTOs to use the notes as advisory information. In these instances RTOs should aim to accommodate the adoption of improved and new technologies in the scope/range and essential knowledge and associated skills of the Competency Standard Units by varying the context examples given in the referenced 'notes' to the Performance Criteria, Range Statement and Essential knowledge and associated skills. However, the contextualisation must not be such that the outcome of the Competency Standard Units is altered in any way.

Where contextualisation of the notes varies the outcome of the Competency Standard Unit and its related content, RTOs should consult with E-Oz Energy Skills Australia to explore options for incorporating and/or covering the new arrangements, so that currency of the Training package is maintained.

It should be noted that any need to alter a Competency Standard Units from its intended outcome requires a new or varied Competency Standard Units. Such changes are to be undertaken through the continuous improvement processes required of Training Packages, which in relation to this Training Package is managed by E-Oz Energy Skills Australia.

Also refer to Section 1.1.01 — Gas Industry Qualifications Framework.

1.2.03 Unit Construction

2.3 Unit Construction

Competency Standard Units that have been successfully attained by learners are to be acknowledged. Some units have been constructed in a manner that will allow reporting without further explanation. However, there are units from related Utilities Industry Training Packages that have been constructed in a manner that requires further reporting of relevant transferable information, i.e. a reporting statement of information that is meaningful for maximum recognition and skills transfer. Generally this would be any endorsement or subset of the unit, as well as detailed formal advice about essential knowledge and skills.

If, in future developments of this Training Package, endorsements are included, further information will be provided. Information can be found in the Gas Industry Training Package or the Electrotechnology Training Package.

Pre-requisites

It is important to note that in relation to training delivery of pre-requisites to Competency Standard Units, training and formative staged assessments may be delivered for all, or part of the sequence of Competency Standard Units concurrently and at a different stage to the final assessment of each unit. However, the final assessment event and judgement for attributing competence for each unit shall follow the pre-requisite sequence.

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Exporting CSUs from this Training Package

No Standard Competency Unit from this Training Package is to be used in isolation or exported without including all relevant interrelated components such as definitions, glossary, essential knowledge and skills, matters related to language, literacy and numeracy, access, equity, cultural diversity or any regulatory arrangements that apply.

1.2.04 Assessment Guidelines

2.4 Assessment Guidelines

The Gas Industry has developed guidelines for the assessment of these standards. The guidelines are included Section 1.3.00 of this Training Package.

1.2.05 National Qualifications

2.5 National Qualifications

The Gas Industry has identified qualifications, which are linked to and use the competency standards. These are detailed in Section 1.1.00 — Qualifications Framework of this Training Package.

Included in the Gas Industry Qualifications Framework are details of the content and composition of the qualifications, the, completion requirements and the rules for structuring and flexibility arrangements and the qualifications structure for each qualification. Further, there is a full description provided for each qualification, which explains its application and the grouping of units making up the respective qualification.

1.2.06 Regulatory Arrangements - Gas Industry

2.6 Regulatory Arrangements — Gas Industry

The Gas Industry is subject to a high level of regulation and codes of practice related to the supply of natural gas and LPG and the operation of equipment, apparatus and the like in the supply of such services. The regulations and codes of practice are based on principles of the supply of natural gas and LPG involving equipment, apparatus and systems, public safety, safety and health of individuals who work on systems and apparatus/equipment and other codes and practices related to the environment in which they are installed and maintained.

Competency Standard Units in this Training Package have been developed in consultation with the relevant industry technical and business Regulators so that, where appropriate, these align to the requirements of legislation, regulations and mandated codes of practice.

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Licensing and regulatory authorities will recognise a range of Competency Standard Units contained within this Training Package for respective licensing, registration or accreditation purposes. In constructing these Competency Standard Units, E-Oz Energy Skills Australia and respective Regulators have given consideration to the link between the delivery and assessment of Competency Standard Units and the respective regulatory requirements. It is expected that the assessment and preferred training regime which meets a Competency Standard Unit's delivery and assessment requirements will therefore meet the relevant regulatory requirements.

In recognising this interrelationship, every effort has been made to ensure currency in regulatory requirements, thus RTOs must ensure they are observed. This includes utilising any recommended industry training program designed to meet Competency Standard Units which are related to licensing/registration applications.

As RTO's registered under the Australian Quality Training Framework (AQTF) or the National Vocational Education and Training Regulator (NVR) requirements are given full responsibility for deeming a learner/apprentice competent for the respective Competency Standard Units within this Training Package. The RTO shall also provide all the necessary documentation (including results preferably percentile based) as required by the regulatory authority to support an application of eligibility for a relevant license, registration or accreditation.

It should be noted that regulatory authorities have advised that the quality of Registered Training Organisations awarding Competency Standard Units for regulatory purposes will be monitored. Where deficiencies are identified, regulators may deem it necessary to introduce appropriate actions, including an additional 'external' assessment following the issuing of the qualification to satisfy eligibility requirements for issuing the licence.

Statutes, Regulations and Codes of Practice

The Gas Industry is covered by Federal, State and Territory Gas Safety, Telecommunications, Occupational Health and Safety and Work Cover Acts as well as other statutes, regulations, industrial instruments, codes of practice, guidelines and advisory standards, Australian/New Zealand and International Standards.

Information relevant to the Gas Industry sector can be found in the following Internet sites:

Gas Technical Regulators Committee (GTRC)

http://www.gtrc.gov.au

State and Territory Regulators

Jurisdiction	Organisation	Website	Telephone Number
Australian Capital Territory	ACT Accreditation and Registration Council	www.det.act.gov.au/vhe/accreditation_and_registration	02 6205 7091

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New South Wales	Vocational Education and Training Accreditation Board, NSW	http://www.service.nsw.gov.au/nswgovdirectory/vocational-education-and-training-accreditation-board-nsw	13 77 88
Northern Territory	NT Department of Education and Training	www.det.nt.gov.au/rto	08 8901 1339
Queensland	QLD Training and Employment Recognition Council	www.training.qld.gov.au/registration	(07) 3237 9959; (07) 3222 2775
South Australia	SA Training and Skills Commission	www.training.sa.gov.au	08 8226 4359
Tasmania	Tasmanian Qualifications Authority (TQA)	www.tqa.tas.gov.au	03 6233 6354
Victoria	Victorian Registration and Qualifications Authority (VRQA)	www.vrqa.vic.gov.au	03 9637 2806
Western Australia	WA Training Accreditation Council	www.tac.wa.gov.au	08 9441 1910

Other Bodies

Organisation	**Website**
Standards Australia	www.standards.org.au
Department of Industry	http://www.innovation.gov.au/industry/Pages/default.aspx
SafeWork Australia	http://safeworkaustralia.gov.au/
Training.gov.au	http://training.gov.au/

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1.2.07 Maintenance of Competency Standards

2.7 Maintenance of Competency Standards

The Gas Industry competency standards were developed by, and are therefore owned by, the industry. However, it is acknowledged that copyright ownership with respect to this material rests with the Commonwealth.

The competency standards must be maintained so that they reflect the ongoing needs of the Gas Industry and respond in a timely manner to changed technologies and circumstances.

The parties (as detailed in the Introduction to this Training Package) who constitute the Gas Industry sector of the ElectroComms and EnergyUtilities Industry Skills Council share responsibility for the maintenance of the Competency Standards:

- Competency Standards maintenance will be coordinated and managed by ElectroComms and EnergyUtilities Industry Skills Council Ltd trading as E-Oz Energy Skills Australia or its successor.
- Suggestions and proposals for changes from all parties are welcomed. These should be documented and submitted to E-Oz Energy Skills Australia in accordance with its policies and procedures.
-

1.2.08 What is Competency?

2.8 What is Competency?

The broad concept of industry competency concerns the ability to perform particular tasks and duties to the standard of performance expected in the workplace. Competency requires the application of specified skills, knowledge and attitudes relevant to effective participation in an industry, industry sector or enterprise.

Competency covers all aspects of workplace performance and involves performing individual tasks; managing a range of different tasks; responding to contingencies or breakdowns; and, dealing with the responsibilities of the workplace, including working with others. Workplace competency requires the ability to apply relevant skills, knowledge and attitudes consistently over time and in the required workplace situations and environments. In line with this concept of competency Training Packages focus on what is expected of a competent individual in the workplace as an outcome of learning, rather than focussing on the learning process itself.

Competency standards in Training Packages are determined by industry to meet identified industry skill needs. Competency standards are made up of a number of units of competency each of which describes a key function or role in a particular job function or occupation. Each unit of competency within a Training Package is linked to one or more AQF qualifications.

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Contextualisation of Units of Competency by RTOs

Registered Training Organisations (RTOs) may contextualise units of competency in this endorsed Training Package to reflect required local outcomes. Contextualisation could involve additions or amendments to the unit of competency to suit particular delivery methods, learner profiles, specific enterprise equipment requirements, or to otherwise meet local needs. However, the integrity of the overall intended outcome of the unit of competency must be maintained.

Any contextualisation of units of competency in this Training Package must be within the bounds of the following advice:

- RTOs must not remove or add to the number and content of elements and performance criteria.
- RTOs can include specific industry terminology in the range statement.
- Any amendments and additions to the range statement made by RTOs must not diminish the breadth of application of the competency, or reduce its portability.
- RTOs may add detail to the evidence guide in areas such as the critical aspects of evidence or required resources and infrastructure—but only where these expand the breadth of the competency and do not limit its use.

Components of Units of Competency

The components of units of competency are summarised below, in the order in which they appear in each unit of competency.

Unit Title

The unit title is a succinct statement of the outcome of the unit of competency. Each unit of competency title is unique, both within and across Training Packages.

Unit Descriptor

The unit descriptor broadly communicates the content of the unit of competency and the skill area it addresses. Where units of competency have been contextualised from units of competency from other endorsed Training Packages, summary information is provided. There may also be a brief second paragraph that describes its relationship with other units of competency, and any licensing requirements.

Employability Skills

This sub-section contains a statement that the unit contains Employability skills.

Pre-requisite Units (optional)

If there are any units of competency that must be completed before the unit, these will be listed.

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Application of the Unit

This sub-section fleshes out the unit of competency's scope, purpose and operation in different contexts, for example, by showing how it applies in the workplace.

Competency Field (Optional)

The competency field either reflects the way the units of competency are categorised in the Training Package or denotes the industry sector, specialisation or function. It is an optional component of the unit of competency.

Sector (optional)

The industry sector is a further categorisation of the competency field and identifies the next classification, for example an elective or supervision field.

Elements of Competency

The elements of competency are the basic building blocks of the unit of competency. They describe in terms of outcomes the significant functions and tasks that make up the competency.

Performance Criteria

The performance criteria specify the required performance in relevant tasks, roles, skills and in the applied knowledge that enables competent performance. They are usually written in passive voice. Critical terms or phrases may be written in bold italics and then defined in range statement, in the order of their appearance in the performance criteria.

Required Skills and Knowledge

The essential skills and knowledge are either identified separately or combined. Knowledge identifies what a person needs to know to perform the work in an informed and effective manner. Skills describe the application of knowledge to situations where understanding is converted into a workplace outcome.

Range Statement

The range statement provides a context for the unit of competency, describing essential operating conditions that may be present with training and assessment, depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts. As applicable, the meanings of key terms used in the performance criteria will also be explained in the range statement.

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Evidence Guide

The evidence guide is critical in assessment as it provides information to the Registered Training Organisation (RTO) and assessor about how the described competency may be demonstrated. The evidence guide does this by providing a range of evidence for the assessor to make determinations, and by providing the assessment context. The evidence guide describes:

- conditions under which competency must be assessed including variables such as the assessment environment or necessary equipment;
- relationships with the assessment of any other units of competency;
- suitable methodologies for conducting assessment including the potential for workplace simulation;
- resource implications, for example access to particular equipment, infrastructure or situations;
- how consistency in performance can be assessed over time, various contexts and with a range of evidence; and
- the required underpinning knowledge and skills

Employability Skills in Units of Competency

The detail and application of Employability Skills facets will vary according to the job-role requirements of each industry. In developing Training Packages, industry stakeholders are consulted to identify appropriate facets of Employability Skills which are incorporated into the relevant units of competency and qualifications.

Employability Skills are not a discrete requirement contained in units of competency (as was the case with Key Competencies). Employability Skills are specifically expressed in the context of the work outcomes described in units of competency and will appear in elements, performance criteria, range statements and evidence guides. As a result, users of Training Packages are required to review the entire unit of competency in order to accurately determine Employability Skills requirements.

How Employability Skills relate to the Key Competencies

The eight nationally agreed Employability Skills now replace the seven Key Competencies in Training Packages. Trainers and assessors who have used Training Packages prior to the introduction of Employability Skills may find the following comparison useful.

Employability Skills	**Mayer Key Competencies**
Communication	Communicating ideas and information
Teamwork	Working with others and in teams
Problem solving	Solving problems Using mathematical ideas and techniques

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Initiative and enterprise	
Planning and organising	Collecting, analysing and organising information Planning and organising activities
Self-management	
Learning	
Technology	Using technology

When analysing the above table it is important to consider the relationship and natural overlap of Employability Skills. For example, using technology may involve communication skills and combine the understanding of mathematical concepts.

Explicitly embedding Employability Skills in units of competency

This Training Package seeks to ensure that industry-endorsed Employability Skills are explicitly embedded in units of competency. The application of each skill and the level of detail included in each part of the unit will vary according to industry requirements and the nature of the unit of competency.

Employability Skills must be both explicit and embedded within units of competency. This means that Employability Skills will be:

- embedded in units of competency as part of the other performance requirements that make up the competency as a whole
- explicitly described within units of competency to enable Training Packages users to identify accurately the performance requirements of each unit with regards to Employability Skills.

This Training Package also seeks to ensure that Employability Skills are well-defined and written into units of competency so that they are apparent, clear and can be delivered and assessed as an essential component of unit work outcomes.

Sample unit of competency components showing Employability Skills

The following table shows the sequence of a unit of competency, and each cell contains text taken from a range of units. It provides examples of where and how various Employability Skills could be embedded in each component.

Please note that in the example, the bracketed Employability Skills are provided for clarification only and would not be present in units of competency within this Training Package.

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Unit Title	Give formal presentations and take part in meetings (Communication)
Unit Descriptor	This unit covers the skills and knowledge required to promote the use and implementation of innovative work practices to effect change. (Initiative and enterprise)
Element	Proactively resolve issues. (problem solving)
Performance Criteria	Information is organised in a format suitable for analysis and dissemination in accordance with organisational requirements. (Planning and organising)
Range Statement	Software applications may include email, internet, word processing, spreadsheet, database or accounting packages. (technology) Modify activities depending on differing workplace contexts, risk situations and environments. (Learning)
Required Skills and Knowledge	Work collaboratively with others during a fire emergency. (teamwork) Instructions, procedures and other information relevant the maintenance of vessel and port security. (Communication)
Evidence Guide	Evidence of having worked constructively with a wide range of community groups and stakeholders to solve problems and adapt or design new solutions to meet identified needs in crime prevention. In particular, evidence must be obtained on the ability to: assess response options to identified crime-prevention needs and determine the optimal action to be implemented in consultation with relevant others, design an initiative to address identified issues. (Initiative and enterprise).

Employability Skills Summaries and Units of Competency

An Employability Skills Summary exists for each qualification. Summaries include broad advice on industry expectations with regard to Employability Skills at the qualification level. Summaries should be used by trainers and assessors to assist in identifying the Employability Skills requirements contained within units of competency.

Please refer to Volume 1 Part 1 Qualification Framework for the relevant Employability Skill Summary for qualifications in this Training Package

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1.2.09 Index of Competency Standard Units

2.9 Index of Competency Standard Units

Index 1 —Gas Industry Competency Standard Units

A - Independent CSUs (000)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UEGNSG004A	Locate, prove and protect utility assets	60	2	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG005A	Prepare to work in the gas industry	20	2	Nil	UEG20114; UEG30114; UEG40114; UEG50114; UEG60114	
UEGNSG006A	Use a portable gas detector to locate escape	40	2	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114

B - Cross Discipline Common Units (100)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective

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UEGNSG106B	Coordinate repair of pipeline, facilities and equipment	110	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG108B	Operate and monitor pipeline control systems	60	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG109B	Control field pipeline operations	60	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG110B	Supervise technical operations for gas distribution or transmission	60	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG111B	Produce maintenance strategies and plans for a gas facility	80	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG113B	Manage a utilities industry OHS management system	80	5	Nil	UEG50114; UEG60114	
UEGNSG114B	Coordinate and monitor implementation of a risk management plan for a utilities industry facility	100	5	Nil		UEG50114; UEG60114
UEGNSG115B	Manage gas systems projects	80	5	Nil		UEG50114; UEG60114

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UEGNSG116B	Manage Gas Industry Physical Resources	80	5	Nil		UEG50114; UEG60114
UEGNSG117B	Plan and implement the data acquisition and metering requirements of a gas system	120	6	Nil		UEG60114
UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications	120	6	Nil		UEG60114
UEGNSG119B	Manage workplace risk in a gas industry facility	60	6	Nil		UEG60114
UEGNSG120B	Manage gas system environmental compliance	60	5	Nil	UEG50114; UEG60114	
UEGNSG121B	Prepare safe design specifications of a gas system	120	6	Nil		UEG60114
UEGNSG122B	Manage a customer service gas business unit	120	6	Nil		UEG60114
UEGNSG123B	Manage financial resources in a gas industry facility	120	6	Nil	UEG60114	
UEGNSG131A	Compile a gas industry	20	4	Nil		UEG40114; UEG50114;

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	technical report					UEG60114
UEGNSG132A	Carry out basic work activities in a gas industry work environment	60	2	UEGNSG141A, UEGNSG005A	UEG20114; UEG30114; UEG40114; UEG50114; UEG60114	
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry	40	3	UEGNSG141A, UEGNSG005A	UEG30114; UEG40114; UEG50114; UEG60114	
UEGNSG134A	Establish a utilities infrastructure work site	60	2	UEGNSG141A, UEGNSG005A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG135A	Monitor and control gas odourisation	100	3	UEGNSG141A, UEGNSG005A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG136A	Carry out transmission pipeline construction work activities	60	2	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG137A	Operate and Maintain Gas Station Water Bath Heaters	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG138A	Install and commission stationary gas fuelled turbine engines	60	3	UEGNSG005A & UEGNSG141A or CPCCOHS1001A & HLTAID001		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG139A	Repair and maintain stationary gas fuelled turbine engines	60	3	UEGNSG005A & UEGNSG141A or CPCCOHS1001A & HLTAID001		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG140A	Apply environmental policies and procedures in the utilities industry	20	2	UEGNSG141A, UEGNSG005A	UEG20114;	UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry	20	2	Nil	UEG20114; UEG30114; UEG40114; UEG50114; UEG60114	

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UEGNSG142A	Conduct isolations under the permit to work system for gas industry work sites	80	3	UEGNSG005A, MSAPMOHS217A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114

C - Distribution Discipline (200)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UEGNSG204B	Coordinate and conduct gas distribution pipeline repair and modifications	110	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG207B	Coordinate construction, laying and testing of gas distribution pipelines	110	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG210B	Supervise and monitor contract staff for work on distribution pipelines	120	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG212B	Construct, lay and connect a gas distribution service to a plastic main	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG213B	Construct, lay and connect a gas distribution service to a steel main	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG216A	Commission or decommission gas distribution pipelines	100	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A; UEGNSG006A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG217A	Launch and recover PIGs in a gas distribution pipeline	100	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG218A	Carry out surveillance on gas distribution assets	90	3	UEGNSG141A, UEGNSG005A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG219A	Conduct excavations in the utilities industry	60	2	UEGNSG141A, UEGNSG004A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG220A	Construct and lay Polyethylene gas distribution mains	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG221A	First on site response to gas pipeline emergencies	90	2	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A, HLTAID003, CPPFES2005A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG222A	Construct and lay nylon or PVC gas distribution mains	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG223A	Construct and lay steel gas distribution pipelines	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG224A	Construct and lay copper and stainless steel gas distribution pipelines	60	2	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A'		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG225A	Perform routine maintenance on distribution pipeline facilities and equipment	100	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG006A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG226A	Assist with the construction, laying and connection of gas distribution services to mains	40	2	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG227A	Assist with the construction and laying of gas distribution mains	40	2	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG228A	Construct and lay large copper gas distribution pipelines	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG30114; UEG40114, UEG50114; UEG60114
UEGNSG229A	Prepare simple drawings of as laid gas mains and services	40	3	**Common Unit Group;** UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, **Plastic Main Services Pathway**; UEGNSG212B **Steel Main Service Pathway;** UEGNSG213B		UEG30114; UEG40114, UEG50114; UEG60114

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				Polyethylene Mains Pathway; UEGNSG222A **Nylon or PVC Mains Pathway**; UEGNSG222A **Steel Mains Pathway;** UEGNSG223A		

D - Transmission Discipline (300)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UEGNSG305B	Coordinate gas transmission pipeline repair and modifications	110	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines	40	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG310B	Supervise and monitor contract work	60	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline	80	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG314B	Liaise with third party and	40	4	Nil		UEG40114;

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	the community to maintain pipeline integrity and community safety					UEG50114; UEG60114
UEGNSG319B	Custody transfer metering and gas quality analysis	80	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG324A	Follow company procedures to deal with incidents related to the abuse of drugs and alcohol	60	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG325A	Coordinate the operation of relevant plant and equipment for transmission pipeline construction	80	4	UEGNSG328A or UEGNSG348A plus its pre-req's		UEG40114; UEG50114; UEG60114
UEGNSG326A	Coordinate and monitor staff and contractors	60	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG327A	Coordinate transmission pipeline construction operations	60	4	UEGNSG320A, UEGNSG328A or UEGNSG331A, UEGNSG348A plus their pre-req's		UEG40114; UEG50114; UEG60114
UEGNSG330A	Coat metallic pipelines	80	2	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG20114; UEG30114; UEG40114;

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						UEG50114; UEG60114
UEGNSG331A	Establish right of way access for transmission pipeline construction	60	2	UEGNSG141A, UEGNSG005A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG332A	Undertake hydro-testing for transmission pipeline construction	60	2	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG333A	Work in proximity of transmission pipeline construction plant and equipment	40	2	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG20114; UEG30114; UEG40114, UEG50114; UEG60114
UEGNSG342A	Maintain pipeline easements	40	2	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A		UEG20114; UEG30114; UEG40114, UEG50114; UEG60114

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UEGNSG344A	Commission or decommission gas transmission pipelines	120	3	UEGNSG141A, UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG134A, UEGNSG140A,		UEG30114; UEG40114, UEG50114; UEG60114
UEGNSG346A	Launch and recover PIGs in gas transmission pipelines	100	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG347A	Perform routine maintenance on transmission pipeline facilities and equipment	110	3	UEGNSG141A, UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG348A	Supervise the operation of plant and equipment for the construction of gas transmission pipelines	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A, UEGNSG004A, UEGNSG006A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG349A	Carry out surveillance of gas transmission pipelines	110	3	UEGNSG141A, UEGNSG005A, UEGNSG140A		UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG350A	First response to a gas facility event	60	3	UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A, HLTAID003, CPPFES2005A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG352A	Check and report on gas station conditions	40	3	UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG353A	Carry out aerial surveillance of gas transmission pipelines	60	3	UEGNSG005A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG354A	Control excavations in the vicinity of gas transmission pipelines	60	3	UEGNSG004A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG355A	Monitor and report on cathodic protection systems	60	3	UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG356A	Monitor and operate flow control, pressure measuring and regulating devices for gas transmission	100	3	UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114

E - Cathodic Protection Discipline (400)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UEGNSG411A	Maintain cathodic protection systems	110	3	UEGNSG141A, UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG412A	Install cathodic protection systems	110	3	UEGNSG141A, UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG30114; UEG40114; UEG50114; UEG60114

F - Control Centre Discipline (500)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective

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UEGNSG506A	Respond to Gas Infrastructure Emergencies	80	3	UEGNSG141A; UEGNSG005A; UEGNSG132A; UEGNSG140A; HLTAID003		UEG30114; UEG50114.
UEGNSG507A	Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices	90	3	UEGNSG005A; UEGNSG132A; UEGNSG140A; UEGNSG141A; MSS402061A.		UEG30114; UEG50114.
UEGNSG508A	Remotely check and report on gas station conditions	40	3	MSS402061A; UEGNSG005A; UEGNSG132A; UEGNSG140A; UEGNSG141A.		UEG30114; UEG50114.

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UEGNSG511A	Operate gas infrastructure to meet nominated demand	120	4	Common Group Units UEGNSG005A UEGNSG132A UEGNSG133A UEGNSG141A Distribution Pathway UEGNSG216A UEGNSG134A Transmission Pathway UEGNSG344A UEGNSG006A UEGNSG134A Controller Pathway UEGNSG507A MSS402061A		UEG40114, UEG50114; UEG60114

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UEGNSG512A	Control centre communication with gas industry stakeholders	110	4	Common Group Units UEGNSG005A UEGNSG132A UEGNSG133A UEGNSG141A Distribution Pathway UEGNSG216A UEGNSG134A Transmission Pathway UEGNSG344A UEGNSG006A UEGNSG134A Controller Pathway UEPOPS203B		UEG40114, UEG50114; UEG60114

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UEGNSG513A	Manage emergencies and critical incidents for gas infrastructure	120	5	Common Group Units UEGNSG005A UEGNSG132A UEGNSG133A UEGNSG141A Distribution Pathway UEGNSG216A UEGNSG134A Transmission Pathway UEGNSG344A UEGNSG006A UEGNSG134A Controller Pathway UEGNSG506A HLTAID003		UEG50114; UEG60114

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UEGNSG514A	Managing and Controlling Field Activities	110	4	Common Unit Group UEGNSG005A UEGNSG132A UEGNSG133A UEGNSG141A Distribution Pathway UEGNSG216A UEGNSG134A Transmission Pathway UEGNSG344A UEGNSG006A UEGNSG134A Controller Pathway UEPOPS203B		UEG40114; UEG50114; UEG60114
UEGNSG515A	Use control centre systems to monitor and control gas infrastructure	110	4	Common Unit Group UEGNSG005A UEGNSG132A UEGNSG133A UEGNSG141A Distribution Pathway UEGNSG216A		UEG40114; UEG50114; UEG60114

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				UEGNSG134A Transmission Pathway UEGNSG344A UEGNSG006A UEGNSG134A Controller Pathway UEGNSG507A, MSS402061A		

G - Gaseous Fuel Vessels Discipline (600)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UEGNSG611B	Control LPG storage/processing operations	110	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG612B	Supervise technical operations for liquefied petroleum gas storage and processing	120	4	Nil		UEG40114; UEG50114; UEG60114
UEGNSG614A	Load, unload, exchange and connect LPG cylinders	80	3	UEGNSG141A, UEGNSG005A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG615A	Fill LPG cylinders	80	2	UEGNSG141A, UEGNSG005A		UEG20114;

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						UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG616A	Refurbish gas cylinders	80	2	UEGNSG141A, UEGNSG005A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG617A	Monitor and control the transfer of bulk LPG	100	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG618A	Process Liquefied Petroleum Gas (LPG)	100	3	UEGNSG617A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A,		UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG619A	Perform scheduled maintenance on gas processing or storage facilities and equipment	110	3	Relevant Cert III plus UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG140A, UEGNSG134A,		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG620A	Organise the repair of faults in LPG processing or storage facilities and equipment	80	3	UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG621A	Control bulk storage of LPG	80	3	UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A,		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG622A	Assess the operational capability of gas safety equipment on a delivery vehicle	40	3	UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG140A, UEGNSG134A		UEG30114; UEG40114; UEG50114; UEG60114

H - Support Services Discipline (700)

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective

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UEGNSG705A	Disconnect and reconnect small capacity gas meters	40	2	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG706A	Test New Residential and Small Commercial Gas Installations	60	3	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG708A	Pressure Test Residential and Small Commercial Gas Installations	40	2	UEGNSG141A, UEGNSG005A, UEGNSG132A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG711A	Process meter reading information using appropriate technology	40	2	UEGNSG141A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG712A	Read and record meter readings	40	2	UEGNSG141A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG713A	Investigate billing exceptions-conditions	60	3	UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG714A	Relight Type A gas appliances	60	2	UEGNSG141A, UEGNSG005A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114

I - Pressure Control Discipline (800)

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Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UEGNSG804A	Maintain Single Stage and Single Run Gas Flow and Pressure Control and Measuring Devices	80	2	UEGNSG006A, UEGNSG141A, UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG805A	Maintain Multi-Stage and Multi-Run Gas Flow and Pressure Measuring and Regulating Devices	80	3	UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A, UEGNSG804A		UEG30114; UEG40114; UEG50114; UEG60114
UEGNSG806A	Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment	100	4	UEGNSG005A, UEGNSG006A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A, UEGNSG804A UEGNSG805A		UEG40114; UEG50114; UEG60114
UEGNSG807A	Install Gas Flow, Measuring and Pressure Regulating Devices	80	3	UEGNSG005A; UEGNSG006A; UEGNSG132A; UEGNSG134A; UEGNSG140A; UEGNSG141A;		UEG30114; UEG40114; UEG50114; UEG60114

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UEGNSG811A	Monitor and operate complex flow control, measuring and regulating devices for gas distribution	110	3	UEGNSG005A, UEGNSG132A, UEGNSG134A, UEGNSG140A, UEGNSG141A		UEG30114; UEG40114; UEG50114; UEG60114

Index 2 - Imported Units

BSB07 Business Services Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
BSBCUS401B	Coordinate implementation of customer service strategies	40	4	Nil		UEG40114
BSBCUS501C	Manage quality customer service	40	5	Nil		UEG50114; UEG60114
BSBFLM303C	Contribute to effective workplace relationships	40	3	Nil	UEG30114	UEG40114
BSBFLM305C	Support operational plan	40	3	Nil		UEG30114; UEG40114
BSBFLM306C	Provide workplace information and resourcing plans	40	3	Nil		UEG30114; UEG40114
BSBFLM309C	Support continuous improvement	40	3	Nil		UEG30114; UEG40114;

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	systems and processes					UEG50114; UEG60114
BSBFLM311C	Support a workplace learning environment	40	3	Nil		UEG30114; UEG40114
BSBFLM312C	Contribute to team effectiveness	40	3	Nil	UEG30114	UEG40114
BSBINM401A	Implement workplace information system	40	4	Nil		UEG40114
BSBINM501A	Manage an information or knowledge management system	50	5	Nil		UEG50114; UEG60114
BSBINM601A	Manage knowledge and information	80	6	Nil		UEG60114
BSBINN301A	Promote innovation in a team environment	40	3	Nil		UEG30114; UEG40114
BSBINN502A	Build and sustain an innovative work environment	50	5	Nil		UEG50114; UEG60114
BSBINN601B	Manage organisational change	60	6	Nil		UEG60114
BSBLED401A	Develop teams and individuals	40	4	Nil		UEG40114
BSBLED501A	Develop a workplace learning environment	60	5	Nil		UEG50114; UEG60114
BSBMGT402A	Implement operational plan	40	4	Nil	UEG40114	

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BSBMGT403A	Implement continuous improvement	40	4	Nil		UEG40114
BSBMGT502B	Manage people performance	70	5	Nil		UEG40114
BSBMGT515A	Manage operational plan	60	5	Nil		UEG50114; UEG60114
BSBMGT516C	Facilitate continuous improvement	60	5	Nil		UEG50114; UEG60114
BSBWHS301A	Maintain workplace safety	40	3	Nil	UEG30114	UEG40114
BSBWHS303A	Participate in WHS hazard identification, risk assessment and risk control	50	3	Nil		UEG30114; UEG40114
BSBWHS501A	Ensure a safe workplace	60	5	Nil		UEG50114; UEG60114
BSBWHS601A	Apply legislative frameworks for WHS	40	6	Nil		UEG60114
BSBWHS602A	Facilitate WHS activities	50	6	Nil		UEG60114
BSBWHS603A	Implement WHS risk management	50	6	Nil		UEG60114
BSBWOR301B	Organise personal work priorities and development	40	3	Nil	UEG30114	UEG40114
BSBWOR401A	Establish effective workplace relationships	50	4	Nil		UEG40114
BSBWOR402A	Promote team effectiveness	50	4	Nil	UEG40114	

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BSBWOR404B	Develop work priorities	40	4	Nil	UEG40114	
BSBWOR501B	Manage personal work priorities and professional development	60	5	Nil		UEG50114; UEG60114
BSBWOR502B	Ensure team effectiveness	60	5	Nil		UEG50114; UEG60114

CPC08 Construction, Plumbing and Services Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
CPCCLDG3001A	Licence to perform dogging	30	3	Nil		UEG20114; UEG30114; UEG40114
CPCCLRG3001A	Licence to perform rigging basic level	40	3	CPCCLDG3001A		UEG20114; UEG30114; UEG40114
CPCCLRG3002A	Licence to perform rigging intermediate level	40	3	CPCCLRG3001A		UEG30114; UEG40114
CPCCOHS1001A	Work safely in the construction industry	10	1	Nil		UEG20114; UEG30114; UEG40114
CPCPCM4012A	Estimate and cost work	40	4	Nil		UEG40114

CPP07 Property Services Training Package

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Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
CPPFES2005A	Demonstrate first attack firefighting equipment	15	2	Nil		UEG20114; UEG30114; UEG40114

HLT Health Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
HLTAID001	Provide cardiopulmonary resuscitation	10	2	Nil		UEG20114; UEG30114; UEG40114
HLTAID003	Provide first aid	10	3	Nil		UEG20114; UEG30114; UEG40114
HLTAID005	Provide first aid in remote situations	10	3	Nil		UEG20114; UEG30114; UEG40114
HLTHSE204D	Follow safe manual handling practices	20	2	Nil		UEG20114; UEG30114; UEG40114

MEM05 Metal and Engineering Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective

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MEM05004C	Perform routine oxy acetylene welding	20	2	Nil		UEG20114; UEG30114; UEG40114
MEM05012C	Perform routine manual metal arc welding	20	2	Nil		UEG20114; UEG30114; UEG40114
MEM05015D	Weld using manual metal arc welding process	40	3			UEG30114; UEG40114
MEM05045B	Perform pipe welds to code standards using manual metal arc welding process	60	4			UEG40114

MSA07 Manufacturing Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
MSAPMOHS110A	Follow emergency response procedures	20	1	Nil		UEG20114; UEG30114; UEG40114
MSAPMOHS205A	Control minor incidents	30	2	Nil		UEG20114; UEG30114; UEG40114
MSAPMOHS216A	Operate breathing apparatus	20	2	Nil		UEG20114; UEG30114; UEG40114

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MSAPMOHS217A	Gas test atmospheres	30	2	Nil		UEG20114; UEG30114; UEG40114
MSAPMOPS400A	Optimise process/plant area	60	4	MSAPMSUP390A		UEG40114
MSAPMPER200C	Work in accordance with an issued permit	20	2	Nil		UEG20114; UEG30114; UEG40114
MSAPMPER201A	Monitor and control work permits	20	2	Nil		UEG20114; UEG30114; UEG40114
MSAPMPER202A	Observe permit work	20	2	Nil		UEG20114; UEG30114; UEG40114
MSAPMPER300C	Issue work permits	20	3	RIIRIS201A		UEG30114; UEG40114
MSAPMPER400A	Coordinate permit process	30	4	MSAPMPER300C		UEG30114; UEG40114
MSAPMSUP200A	Achieve work outcomes	30	2	Nil		UEG30114; UEG40114
MSAPMSUP210A	Process and record information	30	2	Nil		UEG20114; UEG30114; UEG40114
MSAPMSUP240A	Undertake minor maintenance	30	2	Nil		UEG20114; UEG30114; UEG40114
MSAPMSUP303A	Identify equipment faults	40	3	Nil		UEG30114; UEG40114
MSAPMSUP390A	Use structured problem solving tools	40	3	Nil		UEG30114; UEG40114

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MSS11 Sustainability Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
MSS402061A	Use SCADA systems in operations	30	2	Nil		UEG20114; UEG30114; UEG40114
MSS402080A	Undertake root cause analysis	50	3	Nil		UEG30114; UEG40114

PMA08 Chemical, Hydrocarbons and Refining Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
PMAOHS211B	Prepare equipment for emergency response	20	2	Nil		UEG20114; UEG30114; UEG40114
PMAOHS310B	Investigate incidents	30	3	Nil		UEG30114; UEG40114
PMAOHS311B	Lead emergency teams	20	3	Nil		UEG30114; UEG40114
PMAOMIR210B	Control evacuation to muster point	20	2	Nil		UEG20114; UEG30114; UEG40114

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PMAOMIR346B	Assess and secure an incident site	30	3	Nil		UEG30114; UEG40114
PMAOMIR407B	Audit incident preparedness and established response systems	80	4	Nil		UEG40114
PMAOMIR418B	Coordinate incident response	40	4	Nil		UEG40114
PMAOMIR430B	Conduct and assess incident exercises	35	4	Nil		UEG40114
PMAOMIR444B	Develop incident containment tactics	40	4	Nil		UEG40114
PMAOMIR512B	Establish incident response preparedness and response systems	70	5	Nil		UEG50114; UEG60114
PMAOPS305B	Operate process control systems	60	3	Nil		UEG30114
PMAOPS312B	Undertake ship loading/unloading operations	40	3	Nil		UEG30114; UEG40114
PMAOPS330B	Communicate and monitor pipeline activities	40	3	Nil		UEG30114; UEG40114
PMAOPS402A	Respond to abnormal process situations	50	4	MSAPMSUP390A		UEG40114
PMAOPS405A	Operate complex control systems	80	4	Nil		UEG40114
PMAOPS410B	Monitor remote production facilities	40	4	Nil		UEG40114

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PMASUP311A	Operate communications hub	40	4	Nil		UEG40114
PMASUP410B	Develop plant documentation	30	4	Nil		UEG40114
PMASUP444A	Plan plant preparation and isolation	50	4	Nil		UEG40114

PMB07 Plastics, Rubber and Cablemaking Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
PMBWELD301B	Butt weld polyethylene plastic pipelines	20	3	Nil		UEG30114; UEG40114
PMBWELD302B	Electrofusion weld polyethylene pipelines	20	3	Nil		UEG30114; UEG40114

PMC10 Manufactured Mineral Products

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
PMC563081C	Carry out stock control	20	3	Nil		UEG30114; UEG40114

RII Resources and Infrastructure Industry Training Package

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Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
RIICCM205D	Carry out manual excavation	10	2	Nil		UEG20114; UEG30114; UEG40114
RIICCM206D	Support plant operations	10	2	Nil		UEG20114; UEG30114; UEG40114
RIICCM207D	Spread and compact materials manually	10	2	Nil		UEG20114; UEG30114; UEG40114
RIICCM208D	Carry out basic levelling	10	2	Nil		UEG20114; UEG30114; UEG40114
RIICCM210D	Install trench support	15	2	Nil		UEG20114; UEG30114; UEG40114
RIICRC208D	Lay pipes	40	2	Nil		UEG20114; UEG30114; UEG40114
RIIHAN309D	Conduct telescopic materials handler operations	80	3	Nil		UEG30114; UEG40114

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RIIMPO304D	Conduct wheel loader operations	40	3	Nil		UEG30114
RIIMPO308D	Conduct tracked dozer operations	40	3	Nil		UEG20114; UEG30114; UEG40114
RIIMPO309D	Conduct wheeled dozer operations	40	3	Nil		UEG30114; UEG40114
RIIMPO318D	Conduct civil construction skid steer loader operations	70	3	Nil		UEG20114; UEG30114; UEG40114
RIIMPO319D	Conduct backhoe/loader operations	50	3	Nil		UEG30114; UEG40114
RIIMPO320D	Conduct civil construction excavator operations	80	3	Nil		UEG30114; UEG40114
RIIWHS202D	Enter and work in confined spaces	30	2	Nil		UEG20114; UEG30114; UEG40114
RIIWHS204D	Work safely at heights	20	2	Nil		UEG20114; UEG30114; UEG40114
RIIWHS205D	Control traffic with stop-slow bat	10	2	Nil		UEG20114
RIIWHS302D	Implement traffic management plan	20	3	Nil		UEG30114;

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						UEG40114
RIIRIS301D	Apply risk management processes	40	3	Nil		UEG40114
RIISAM201D	Handle resources and infrastructure materials and safely dispose of nontoxic materials	15	2	Nil		UEG20114; UEG30114; UEG40114
RIIWMG203D	Drain and dewater civil construction site	20	2	Nil		UEG20114; UEG30114; UEG40114

TLI07 Transport and Logistics Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
TLIB2004A	Carry out vehicle inspection	20	2	Nil		UEG20114; UEG30114; UEG40114
TLIC2002A	Drive light rigid vehicle	40	2	Nil		UEG20114; UEG30114; UEG40114
TLIC2025A	Operate four wheel drive vehicle	40	2	Nil		UEG20114; UEG30114; UEG40114

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TLIC3003A	Drive medium rigid vehicle	40	3	Nil		UEG20114; UEG30114; UEG40114
TLIC3004A	Drive heavy rigid vehicle	40	3	Nil		UEG20114; UEG30114; UEG40114
TLIC3005A	Drive heavy combination vehicle	40	3	Nil		UEG20114; UEG30114; UEG40114
TLIC4006A	Drive multi-combination vehicle	40	4	Nil		UEG40114
TLIC4067A	Operate LP gas tanker	40	4	TLILIC3013A		UEG30114; UEG40114;
TLID2003A	Handle dangerous goods/hazardous substances	40	2	Nil		UEG20114; UEG30114; UEG40114
TLID2010A	Operate a forklift	40	2	Nil		UEG20114; UEG30114; UEG40114
TLID2016A	Load and unload explosives and dangerous goods	30	2	Nil		UEG20114; UEG30114; UEG40114
TLID3015A	Identify and label explosives and dangerous	20	3	Nil		UEG30114;

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	goods					UEG40114
TLID3023A	Use specialised liquid bulk gas transfer equipment	40	3	Nil		UEG30114; UEG40114
TLID3027A	Prepare for transport of dangerous goods	50	3	Nil		UEG30114; UEG40114
TLID3033A	Operate a vehicle-mounted loading crane	40	3	Nil		UEG20114; UEG30114; UEG40114
TLID3036A	Lift and move load using a mobile crane	40	3	Nil		UEG30114; UEG40114
TLIF2006A	Apply accident-emergency procedures	20	2	Nil		UEG20114; UEG30114; UEG40114
TLIF2010A	Apply Fatigue Management Strategies	30	2	Nil		UEG20114; UEG30114; UEG40114
TLIF2012A	Apply safe procedures when handling/transporting dangerous goods or explosives	30	2	Nil		UEG20114; UEG30114; UEG40114
TLIF3063A	Administer the implementation of fatigue management strategies	50	3	Nil		UEG40114;
TLIF3093A	Implement chain of responsibility regulations	30	3	Nil		UEG40114;

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TLIF3096A	Carry out emergency response to a dangerous goods incident	40	3	Nil		UEG40114;
TLIF4007A	Implement and coordinate accident-emergency procedures	40	4	Nil		UEG40114;
TLIF4065A	Ensure compliance with Australian Dangerous Goods Code	70	4	Nil		UEG40114;
TLIF4066A	Implement and supervise transport regulations compliance systems	80	4	Nil		UEG40114;
TLIF4094A	Ensure compliance with chain of responsibility	40	4	Nil		UEG40114;
TLIL4059A	Implement asset management systems	40	4	Nil		UEG40114;
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	40	3	Nil		UEG20114; UEG30114; UEG40114
TLILIC2001A	Licence to operate a forklift truck	40	2	Nil		UEG20114; UEG30114; UEG40114
TLILIC2014B	Licence to drive a light rigid vehicle	40	2	Nil		UEG20114; UEG30114; UEG40114
TLILIC2015B	Licence to drive a medium rigid vehicle	40	2	Nil		UEG20114; UEG30114;

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						UEG40114
TLILIC2016B	Licence to drive a heavy rigid vehicle	50	2	Nil		UEG20114; UEG30114; UEG40114
TLILIC3006A	Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)	60	3	Nil		UEG30114; UEG40114
TLILIC3008A	Licence to operate a slewing mobile crane (up to 20 tonnes)	70	3	Nil		UEG30114; UEG40114
TLILIC3013A	Preparation to transport dangerous goods by road	50	3	Nil		UEG30114; UEG40114
TLILIC3017B	Licence to drive a heavy combination vehicle	60	3	Nil		UEG20114; UEG30114; UEG40114
TLILIC3018B	Licence to drive a multi combination vehicle	60	3	Nil		UEG30114; UEG40114
TLILIC4009A	Licence to operate a slewing mobile crane (up to 60 tonnes)	70	4	Nil		UEG30114; UEG40114

UEE11 Electrotechnology Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective

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UEENEEC001B	Maintain documentation	20	2	Nil		UEG20114; UEG30114; UEG40114
UEENEED101A	Use computer applications relevant to a workplace	20	2	UEENEEE101A		UEG20114; UEG30114; UEG40114
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20	4	Nil	UEG40114	UEG50114; UEG60114
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40	2	UEENEEE101A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40	2	UEENEEE101A		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEENEEM020A	Attend to breakdowns in hazardous areas - gas atmospheres	20	3	UEENEEM080A plus Competencies in attending to breakdowns		UEG30114; UEG40114; UEG50114; UEG60114
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20	3	UEENEEM080A plus Competencies required by a given industry		UEG30114; UEG40114; UEG50114; UEG60114

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UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20	2	Competencies required by a given industry		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114

UEP12 Electricity Supply Industry - Generation Sector Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UEPMNT367A	Install and commission stationary gas fuelled reciprocating engines	60	3	UEENEEE101A, CPCCOHS1001A, HLTCPR201A		UEG30114;UEG40114; UEG50114; UEG60114
UEPMNT368A	Repair and maintain stationary gas fuelled reciprocating engines	60	3	UEENEEE101A, CPCCOHS1001A, HLTCPR201A		UEG30114; UEG40114; UEG50114; UEG60114
UEPOPS203B	Operate and Monitor Communications System	20	2	Nil		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEPOPS205B	Conduct Minor Mechanical Maintenance	30	2	Nil		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114
UEPOPS317B	Operate and Monitor Fixed Fire Protection Systems	30	3	Nil		UEG30114; UEG40114, UEG50114; UEG60114
UEPOPS336B	Manage, operate and	60	3	Nil		UEG30114; UEG50114.

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	monitor a gas turbine unit					
UEPOPS347B	Operate and monitor supervisory, control and data acquisition systems	40	3	Nil		UEG30114; UEG40114, UEG50114; UEG60114

UET12 Transmission, Distribution and Rail Sector Training Package

Unit Code	Unit Title	Weighting Points	AQF Level	Pre-requisites	Qualification Core	Qualification Elective
UETTDREL14A	Working safely near live electrical apparatus as a non-electrical worker	40	2	Nil		UEG20114; UEG30114; UEG40114; UEG50114; UEG60114

1.2.10 Diagrams Showing Unit Relationships

2.10 Mapping of Competency Standard Units

Relationships between units which have been amended, added or deleted from versions of Gas Industry Training Package

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Table 1 — Mapping Units of Standard Competency UEG11 Gas Industry Training Package Version 2 and UEG11 Gas Industry Training Package Version 1

CSU Code in UEG11 Version 2.0	Title	CSU Code in UEG11 Version 1.1	Title	Equivalent (E) or Not Equivalent (N)
UEGNSG004A	Locate, prove and protect utility assets	UEGNSG003A	Locate, prove and protect gas distribution assets	N
UEGNSG005A	Prepare to work in the gas industry	New Unit	New Unit	
UEGNSG006A	Use a portable gas detector to locate escape	New Unit	New Unit	
UEGNSG132A	Carry out basic work activities in a gas industry work environment	UEGNSG102B	Carry out work activities in a utilities industry work environment	N
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry	UEGNSG104B	Comply with environmental policies and procedures	N
UEGNSG134A	Establish a utilities infrastructure work site	UEGNSG105B	Establish the work site	N
UEGNSG134A	Establish a utilities infrastructure work site	UEGNSG128A	Establish a transmission pipeline construction work site	N
UEGNSG135A	Monitor and control gas odourisation	UEGNSG107B	Control gas odourisation	N
UEGNSG136A	Carry out transmission pipeline construction work activities	UEGNSG125A	Carry out transmission pipeline construction work activities	N

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UEGNSG137A	Operate and Maintain Gas Station Water Bath Heaters	New Unit	New Unit	
UEGNSG138A	Install and commission stationary gas fuelled turbine engines	New Unit	New Unit	
UEGNSG139A	Repair and maintain stationary gas fuelled turbine engines	New Unit	New Unit	
UEGNSG140A	Apply environmental policies and procedures in the utilities industry	New Unit	New Unit	
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry	New Unit	New Unit	
UEGNSG142A	Conduct isolations under the permit to work system for gas industry work sites	UEGNSG112B	Conduct isolation procedures for permit to work system for gas industry work site	N
UEGNSG212B	Construct, lay and connect gas distribution service pipelines to a plastic mains	UEGNSG212A	Construct, lay and connect a residential single point gas distribution service to a plastic main	E
UEGNSG213B	Construct, lay and connect a gas distribution service to a steel main	UEGNSG213A	Construct, lay and connect a residential single point gas distribution service to a metal main	E
UEGNSG216A	Commission or decommission gas distribution pipelines	UEGNSG203B	Commission or decommission gas distribution pipelines	N

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UEGNSG217A	Launch and recover PIGs in a gas distribution pipeline	UEGNSG205B	Launch and recover PIG in a gas distribution pipeline	N
UEGNSG218A	Carry out surveillance on gas distribution assets	UEGNSG208B	Gas distribution pipeline surveillance	N
UEGNSG219A	Conduct excavations in the utilities industry	UEGNSG215A	Conduct excavations in the gas industry	N
UEGNSG220A	Construct and lay Polyethylene gas distribution mains	UEGNSG214A	Construct and lay gas distribution mains	N
UEGNSG221A	First on site response to gas pipeline emergencies	UEGNSG209B	First on site emergency response on a distribution pipeline	N
UEGNSG221A	First on site response to gas pipeline emergencies	UEGNSG309B	First on site emergency response on a transmission pipeline	N
UEGNSG222A	Construct and lay nylon or PVC gas distribution mains	UEGNSG214A	Construct and lay gas distribution mains	N
UEGNSG223A	Construct and lay steel gas distribution mains	UEGNSG214A	Construct and lay gas distribution mains	N
UEGNSG224A	Construct and lay copper and stainless steel gas distribution pipelines	UEGNSG214A	Construct and lay gas distribution mains	N
UEGNSG225A	Perform routine maintenance on distribution pipeline facilities and equipment	UEGNSG206B	Perform routine maintenance on distribution pipeline facilities and equipment	N

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UEGNSG226A	Assist with the construction, laying and connection of gas distribution services to a mains	New Unit	New Unit	
UEGNSG227A	Assist with the construction and laying of gas distribution mains	New Unit	New Unit	
UEGNSG228A	Construct and lay large copper gas distribution pipelines	UEGNSG214A	Construct and lay gas distribution mains	N
UEGNSG229A	Prepare simple drawings of as laid gas mains and services	New Unit	New Unit	
Removed	Removed	UEGNSG202B	Construct and lay distribution pipelines and services	
UEGNSG330A	Coat metallic pipelines	UEGNSG301B	Coat gas pipelines	N
UEGNSG331A	Establish right of way access for transmission pipeline construction	UEGNSG320A	Establish right of way access for transmission pipeline construction	N
UEGNSG332A	Undertake hydrotesting for transmission pipeline construction	UEGNSG321A	Undertake hydrotesting for transmission pipeline construction	N
UEGNSG333A	Work in proximity of transmission pipeline construction plant and equipment	UEGNSG323A	Operate transmission pipeline construction plant and equipment	N
UEGNSG342A	Maintain pipeline easements	UEGNSG302B	Maintain pipeline easements	N

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UEGNSG344A	Commission or decommission gas transmission pipelines	UEGNSG304B	Commission or decommission gas transmission pipelines	N
UEGNSG346A	Launch and recover PIGs in gas transmission pipelines	UEGNSG306B	Pipeline pigging in gas transmission pipeline	N
UEGNSG347A	Perform routine maintenance on transmission pipeline facilities and equipment	UEGNSG307B	Perform routine maintenance on transmission pipeline facilities and equipment	N
UEGNSG348A	Supervise the operation of plant and equipment for the construction of transmission pipelines	UEGNSG328A	Supervise the operation of plant and equipment for the construction of transmission pipelines	N
UEGNSG349A	Carry out surveillance of gas transmission pipelines	UEGNSG329A	Gas transmission pipeline surveillance	N
UEGNSG350A	First response to a gas facility event	UEGNSG312B	First response to a facility event	N
UEGNSG352A	Check and report on gas station conditions	UEGNSG313B	Check and report on station conditions	
UEGNSG353A	Carry out aerial of gas transmission pipelines	UEGNSG315B	Aerial transmission pipeline surveillance	N
UEGNSG354A	Control excavations in the vicinity of a transmission pipelines	UEGNSG316B	Site control of excavations in the vicinity of a transmission pipeline	N
UEGNSG355A	Monitor and report on cathodic protection systems	UEGNSG317B	Monitor and report on cathodic protection systems	N

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UEGNSG356A	Monitor and operate flow control, pressure measuring and regulating devices for gas transmission	UEGNSG318B	Monitor and operate flow control, pressure, measuring and regulating devices for gas transmission	N
Removed	Removed	UEGNSG322A	Undertake rigging operations for transmission pipeline construction	
UEGNSG411A	Maintain cathodic protection systems	UEGNSG401B	Maintain cathodic protection systems	N
UEGNSG412A	Install cathodic protection systems	UEGNSG402B	Install cathodic protection systems	N
UEGNSG506A	Respond to Gas Infrastructure Emergencies	New Unit	New Unit	
UEGNSG507A	Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices	New Unit	New Unit	
UEGNSG508A	Remotely check and report on gas station conditions	New Unit	New Unit	
UEGNSG511A	Operate gas infrastructure to meet nominated demand	UEGNSG501B	Operate gas infrastructure to meet nominated demand	N
UEGNSG512A	Control centre communication with gas industry stakeholders	UEGNSG502B	Control centre communication with gas industry stakeholders	N
UEGNSG513A	Manage emergencies and critical incidents for gas infrastructure	UEGNSG503B	Manage emergencies and critical incidents for gas infrastructure	N

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UEGNSG514A	Monitoring and controlling field activities	UEGNSG504B	Monitoring and controlling field activities	N
UEGNSG515A	Use control centre systems to monitor and control gas infrastructure	UEGNSG505B	Use control centre systems to monitor and control gas infrastructure	N
UEGNSG614A	Load, unload, exchange and connect LPG cylinders	UEGNSG603B	Load, unload and exchanging gas cylinders	N
UEGNSG615A	Fill LPG cylinders	UEGNSG604B	Fill gas cylinders	N
UEGNSG616A	Refurbish gas cylinders	UEGNSG605B	Refurbish gas cylinders	N
UEGNSG617A	Monitor and control the transfer of bulk LPG	UEGNSG606B	Monitor and control the transfer of LPG	N
UEGNSG618A	Process Liquefied Petroleum Gas (LPG)	UEGNSG607B	Process LPG	N
UEGNSG619A	Perform scheduled maintenance on gas processing or storage facilities and equipment	UEGNSG608B	Perform minor maintenance on gas processing/storage facilities and equipment	N
UEGNSG620A	Organise the repair of faults in LPG processing or storage facilities and equipment	UEGNSG609B	Coordinate repair of faults in gas processing/storage facilities and equipment	N
UEGNSG621A	Control bulk storage of LPG	UEGNSG610B	Control storage of LPG in terminal	N
UEGNSG622A	Assess the operational capability of gas safety equipment on a delivery vehicle	UEGNSG613A	Assess the operational capability of gas safety equipment on delivery vehicle	N

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Removed	Removed	UEGNSG602A	Load, discharging LPG by road tanker	
UEGNSG705A	Disconnect and reconnect small capacity gas meters	New Unit	New Unit	
UEGNSG706A	Test New Residential and Small Commercial Gas Installations	New Unit	New Unit	
UEGNSG708A	Pressure test existing residential and small commercial gas installations	New Unit	New Unit	
UEGNSG711A	Process meter reading information using appropriate technology	UEGNSG701B	Process meter reading information using appropriate technology	N
UEGNSG712A	Read and record meter readings	UEGNSG702B	Read and record meter readings	N
UEGNSG713A	Investigate billing exceptions-conditions	UEGNSG703B	Investigate billing exceptions-conditions	N
UEGNSG714A	Relight Type A gas appliances	UEGNSG704A	Conduct an appliance relight	N
UEGNSG804A	Maintain Single Stage and Single Run Gas Flow and Pressure Control and Measuring Devices	New Unit	New Unit	
UEGNSG805A	Maintain Multi-Stage and Multi-Run Gas Flow and Pressure Measuring and Regulating Devices	New Unit	New Unit	
UEGNSG806A	Maintain SCADA controlled gas flow and pressure & electronic gas	New Unit	New Unit	

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	measurement equipment			
UEGNSG807A	Install Gas Flow, Measuring and Pressure Regulating Devices	New Unit	New Unit	
UEGNSG811A	Monitor and operate complex flow control, measuring and regulating devices for gas distribution	UEGNSG801B	Monitor and operate flow control, measuring and regulating devices for gas pressure control	N

Table 2— Mapping Units of Standard Competency UEG11 Gas Industry Training Package Version 1 and UEG06 Gas Industry Training Package Version 1.1

CSU Code in UEG11 Version 1	Title	Competency Standard Unit Code UEG06 Version 1.1	Title	Equivalent (E) or Not Equivalent (N)
Deleted	Deleted	UEGNSG001A	Working safely near gas pipelines and other gas	N/A
UEGNSG003A	Locate, prove and protect gas distribution assets	New Unit		New Unit
Deleted	Deleted	UEGNSG101A	Use equipment and tools to perform work in a utilities industry work environment	N/A
UEGNSG102B	Carry out work activities in a utilities	UEGNSG102A	Carry out work activities in a utilities	E

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	industry work environment		industry work environment	
Deleted	Deleted	UEGNSG103A	Comply with workplace OHS procedures and practices	N/A
UEGNSG104B	Comply with environmental policies and procedures	UEGNSG104A	Comply with environmental policies and procedures	E
UEGNSG105B	Establish the work site	UEGNSG105A	Establish the work site	E
UEGNSG106B	Coordinate repair of pipeline, facilities and equipment	UEGNSG106A	Coordinate repair of pipeline, facilities and equipment	E
UEGNSG107B	Control gas odourisation	UEGNSG107A	Control gas odourisation	E
UEGNSG108B	Operate and monitor pipeline control systems	UEGNSG108A	Operate and monitor pipeline control systems	E
UEGNSG109B	Control field pipeline operations	UEGNSG109A	Control field pipeline operations	E
UEGNSG110B	Supervise technical operations for gas distribution/transmission	UEGNSG110A	Supervise technical operations for gas distribution/transmission	E
UEGNSG111B	Produce maintenance strategies and plans for a gas facility	UEGNSG111A	Produce maintenance strategies and plans for a gas facility	E
UEGNSG112B	Conduct isolation procedures for permit to work system for a gas industry work site	UEGNSG112A	Conduct isolation procedures for permit to work system for a gas industry work site	E

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UEGNSG113B	Manage a utilities industry OHS management system	UEGNSG113A	Manage a utilities industry OHS management system	E
UEGNSG114B	Coordinate and monitor implementation of a risk management plan for a utilities industry facility	UEGNSG114A	Coordinate and monitor implementation of a risk management plan for a utilities industry facility	E
UEGNSG115B	Manage gas industry systems projects	UEGNSG115A	Manage gas industry systems projects	E
UEGNSG116B	Manage gas industry physical resources	UEGNSG116A	Manage gas industry physical resources	E
UEGNSG117B	Plan and implement the data acquisition and metering requirements of a gas system	UEGNSG117A	Plan and implement the data acquisition and metering requirements of a gas system	E
UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications	UEGNSG118A	Select and commission equipment to meet pressure and temperature control specifications	E
UEGNSG119B	Manage workplace risk in a gas industry facility	UEGNSG119A	Manage workplace risk in a gas industry facility	E
UEGNSG120B	Manage gas system environmental compliance	UEGNSG120A	Manage gas system environmental compliance	E
UEGNSG121B	Prepare safe design specifications of a gas system	UEGNSG121A	Prepare safe design specifications of a gas system	E
UEGNSG122B	Manage a customer service gas business unit	UEGNSG122A	Manage a customer service gas business unit	E

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UEGNSG123B	Manage financial resources in a gas industry facility	UEGNSG123A	Manage financial resources in a gas industry facility	E
Deleted	Deleted	UEGNSG124A	Install and maintain process control systems — extra low voltage	N/A
UEGNSG125A	Carry out transmission pipeline construction work activities	New Unit		New Unit
UEGNSG128A	Establish a transmission pipeline construction work site	New Unit		New Unit
UEGNSG131A	Compile a gas industry technical report	New Unit		New Unit
Deleted	Deleted	UEGNSG201A	Excavate for underground utilities services operating plant and equipment	N/A
UEGNSG202B	Construct and lay distribution pipelines	UEGNSG202A	Construct and lay distribution pipelines	E
UEGNSG203B	Commission/decommission gas distribution pipelines	UEGNSG203A	Commission/decommission gas distribution pipelines	E
UEGNSG204B	Coordinate gas distribution pipeline repair and modifications	UEGNSG204A	Coordinate gas distribution pipeline repair and modifications	E
UEGNSG205B	Launch and recover PIG in a gas distribution pipeline	UEGNSG205A	Launch and recover PIG in a gas distribution pipeline	E
UEGNSG206B	Perform routine maintenance on distribution pipeline facilities and	UEGNSG206A	Perform routine maintenance on distribution pipeline facilities and	E

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	equipment		equipment	
UEGNSG207B	Coordinate construction, laying and testing of gas distribution pipelines	UEGNSG207A	Coordinate construction, laying and testing of gas distribution pipelines	E
UEGNSG208B	Gas distribution pipeline surveillance	UEGNSG208A	Gas distribution pipeline surveillance	E
UEGNSG209B	First on site emergency response on a distribution pipeline	UEGNSG209A	First on site emergency response on a distribution pipeline	E
UEGNSG210B	Supervise and monitor contract staff for work on distribution pipelines	UEGNSG210A	Supervise and monitor contract staff for work on distribution pipelines	E
Deleted	Deleted	UEGNSG211A	Lay underground electrical supply cables	N/A
UEGNSG212A	Construct, lay and connect a residential single point gas distribution service to a plastic main	New Unit		New Unit
UEGNSG213A	Construct, lay and connect a residential single point gas distribution service to a metal main	New Unit		New Unit
UEGNSG214A	Construct and lay gas distribution plastic mains	New Unit		New Unit
UEGNSG215A	Conduct excavations in the gas industry	New Unit		New Unit
UEGNSG301B	Coat gas pipelines	UEGNSG301A	Coat gas pipelines	E

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UEGNSG302B	Maintain pipeline easements	UEGNSG302A	Maintain pipeline easements	E
Deleted	Deleted	UEGNSG303A	Ground transmission pipeline surveillance	E
UEGNSG304B	Commission/decommission gas transmission pipelines	UEGNSG304A	Commission/decommission gas transmission pipelines	E
UEGNSG305B	Coordinate gas transmission pipeline repair and modification	UEGNSG305A	Coordinate gas transmission pipeline repair and modification	E
UEGNSG306B	Pipeline pigging in gas transmission pipeline	UEGNSG306A	Pipeline pigging in gas transmission pipeline	E
UEGNSG307B	Perform routine maintenance on transmission pipeline facilities and equipment	UEGNSG307A	Perform routine maintenance on transmission pipeline facilities and equipment	E
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines	UEGNSG308A	Identify, evaluate and control threats to transmission pipelines	E
UEGNSG309B	First on site emergency response on a transmission pipeline	UEGNSG309A	First on site emergency response on a transmission pipeline	E
UEGNSG310B	Supervision and monitor contract work	UEGNSG310A	Supervision and monitor contract work	E
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline	UEGNSG311A	Site control of third party works in the vicinity of a transmission pipeline	E
UEGNSG312B	First response to a facility event	UEGNSG312A	First response to a facility event	E

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UEGNSG313B	Check and report on station conditions	UEGNSG313A	Check and report on station conditions	E
UEGNSG314B	Liaise with third party and the community to maintain pipeline integrity and community safety	UEGNSG314A	Liaise with third party and the community to maintain pipeline integrity and community safety	E
UEGNSG315B	Aerial transmission pipeline surveillance	UEGNSG315A	Aerial transmission pipeline surveillance	E
UEGNSG316B	Site control of excavations in the vicinity of a transmission pipeline	UEGNSG316A	Site control of excavations in the vicinity of a transmission pipeline	E
UEGNSG317B	Monitor and report on cathodic protection systems	UEGNSG317A	Monitor and report on cathodic protection systems	E
UEGNSG318B	Monitor and operate flow control, pressure, measuring and regulating devices for gas transmission	UEGNSG318A	Monitor and operate flow control, pressure, measuring and regulating devices for gas transmission	E
UEGNSG319B	Custody transfer metering and gas quality analysis	UEGNSG319A	Custody transfer metering and gas quality analysis	E
UEGNSG320A	Establish right of way access for transmission pipeline construction	New Unit		New Unit
UEGNSG321A	Undertake hydrotesting for transmission pipeline construction	New Unit		New Unit
UEGNSG322A	Undertake rigging operations for transmission pipeline construction	New Unit		New Unit

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UEGNSG323A	Operate transmission pipeline construction plant and equipment	New Unit		New Unit
UEGNSG324A	Follow company procedures to deal with incidents related to the abuse of drugs and alcohol	New Unit		New Unit
UEGNSG325A	Coordinate the operation of relevant plant and equipment for transmission pipeline construction	New Unit		New Unit
UEGNSG326A	Coordinate and monitor staff and contractors	New Unit		New Unit
UEGNSG327A	Coordinate transmission pipeline construction operations	New Unit		New Unit
UEGNSG328A	Supervise the operation of relevant plant and equipment for transmission pipeline construction	New Unit		New Unit
UEGNSG329A	Ground transmission pipeline surveillance	New Unit		New Unit
UEGNSG401B	Maintain cathodic protection systems	UEGNSG401A	Maintain cathodic protection systems	E
UEGNSG402B	Install cathodic protection systems	UEGNSG402A	Install cathodic protection systems	E
UEGNSG501B	Operate gas infrastructure to meet nominated demand	UEGNSG501A	Operate gas infrastructure to meet nominated demand	E

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UEGNSG502B	Control centre communication with gas industry stakeholders	UEGNSG502A	Control centre communication with gas industry stakeholders	E
UEGNSG503B	Manage emergencies and critical incidents for gas infrastructure	UEGNSG503A	Manage emergencies and critical incidents for gas infrastructure	E
UEGNSG504B	Monitoring and controlling field activities	UEGNSG504A	Monitoring and controlling field activities	E
UEGNSG505B	Use control centre systems to monitor and control gas infrastructure	UEGNSG505A	Use control centre systems to monitor and control gas infrastructure	E
Deleted	Deleted	UEGNSG601A	Assess the operational capability of gas safety equipment on tankers	N/A
UEGNSG602B	Load, discharging LPG by road tanker	UEGNSG602A	Load, discharging LPG by road tanker	E
UEGNSG603B	Load, unload and exchanging gas cylinders	UEGNSG603A	Load, unload and exchanging gas cylinders	E
UEGNSG604B	Fill gas cylinders	UEGNSG604A	Fill gas cylinders	E
UEGNSG605B	Refurbish gas cylinders	UEGNSG605A	Refurbish gas cylinders	E
UEGNSG606B	Monitor and control the transfer of LPG	UEGNSG606A	Monitor and control the transfer of LPG	E
UEGNSG607B	Process LPG	UEGNSG607A	Process LPG	E
UEGNSG608B	Perform minor maintenance on gas processing/storage facilities and	UEGNSG608A	Perform minor maintenance on gas processing/storage facilities and	E

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	equipment		equipment	
UEGNSG609B	Coordinate repair of faults in gas processing/storage facilities and equipment	UEGNSG609A	Coordinate repair of faults in gas processing/storage facilities and equipment	E
UEGNSG610B	Control storage of LPG in terminal	UEGNSG610A	Control storage of LPG in terminal	E
UEGNSG611B	Control LPG storage/processing operations	UEGNSG611A	Control LPG storage/processing operations	E
UEGNSG612B	Supervise technical operations for liquefied petroleum gas storage and processing	UEGNSG612A	Supervise technical operations for liquefied petroleum gas storage and processing	E
UEGNSG613A	Assess the operational capability of gas safety equipment on delivery vehicles	New Unit		New Unit
UEGNSG701B	Process meter reading information using appropriate technology	UEGNSG701A	Process meter reading information using appropriate technology	E
UEGNSG702B	Read and record meter readings	UEGNSG702A	Read and record meter readings	E
UEGNSG703B	Investigate billing exceptions/conditions	UEGNSG703A	Investigate billing exceptions/conditions	E
UEGNSG704A	Conduct an appliance relight	New Unit		New Unit
UEGNSG801B	Monitor and operate complex flow control, measuring and regulating devices for gas pressure control	UEGNSG801A	Monitor and operate complex flow control, measuring and regulating devices for gas pressure control	E

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Deleted	Deleted	UEGNSG802A	Install flow control, measuring and regulating devices for gas pressure control	N/A

Table 3 - Mapping of Units from UEE07 to "XX" units in UEG06 Version 1

UEG06 Version 1.1 CSU Code	Title	UEG06 Version 1 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (for relevant pre-requisite or co-requisite refer respective unit)	AQF Align.	Weighting Points	Equivalent - Full, part or not
UEENEEM001B	Report on the integrity of explosion-protected equipment in hazardous areas	UEENEEMXX1A	New Imported unit from UEE07 replacing "XX" unit	Plant or machinery operation or installations, maintenance or service functions at AQF level 2 or equivalent	2	30	Full
UEENEEM002B	Attend to breakdowns in hazardous areas	UEENEEMXX2A	New Imported unit from UEE07 replacing "XX" unit	M001B and competencies in attending to breakdowns in general electrical or instrumentation equipment at AQF level 3 or equivalent.	3	30	Full

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UEG06 Version 1.1 CSU Code	Title	UEG06 Version 1 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (for relevant pre-requisite or co-requisite refer respective unit)	AQF Align.	Weighting Points	Equivalent - Full, part or not
UEENEEM003B	Use and maintain the integrity of portable gas detection devices	UEENEEMXX3A	New Imported unit from UEE07 replacing "XX" unit	Plant or machinery operation or installations, maintenance or service functions at AQF level 2 or equivalent	3	90	Full
UEENEE002B	Dismantle, assemble and fabricate electrotechnology components	UEENEEEXX2A	New Imported unit from UEE07 replacing "XX" unit	None	1-Feb	180	Full
UEENEE005B	Fix and secure equipment	UEENEEEXX5A	New Imported unit from UEE07 replacing "XX" unit	None	1/02/2003		Full
UEENEE007B	Apply methods to maintain currency of industry developments	UEENEEEXX7A	New Imported unit from UEE07 replacing "XX" unit	None	2		Full

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UEG06 Version 1.1 CSU Code	Title	UEG06 Version 1 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (for relevant pre-requisite or co-requisite refer respective unit)	AQF Align.	Weighting Points	Equivalent - Full, part or not
UEENEE008B	Lay wiring/cabling and terminate accessories for extra-low voltage circuits	UEENEEEXX8A	New Imported unit from UEE07 replacing "XX" unit	UEENEE005B; UEENEE007B	2		Full

Table 4 — Mapping Units in former Training Packages UEG06 – Version 1 to UTG98

CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG001A	Working safely near gas pipelines and other gas infrastructure	New unit	New unit developed for persons working near gas infrastructure from outside the Gas Industry. This unit is not found in any Gas Industry qualifications	Nil	N/A	N/A	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG101A	Use equipment and tools to perform work in a utilities industry work environment	New unit	New unit developed for Certificate I qualification that was not found in UTG98	Nil	1	Core	None
UEGNSG102A	Carry out work activities in a utilities industry work environment	New unit	New unit developed for Certificate I qualification that was not found in UTG98	Nil	1 & 2	Core	None
UEGNSG103A	Comply with workplace OHS procedures and practices	UTGNGS001A UTGNGS002A UTGNGS003A	Re-alignment of UTG98 core competencies into a generic utilities core focus	Nil	2	Core	Part — with relevant range and subject to notes above
UEGNSG104A	Comply with environmental policies and procedures	UTGNGS001A UTGNGS002A UTGNGS003A	Re-alignment of UTG98 core competencies into a generic utilities core focus	Nil	2	Core	Part — with relevant range and subject to notes above
UEGNSG105A	Establish the work site	UTGNGS001A	Re-alignment of UTG98 core	Nil	2	Core	Part — with relevant

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
		UTGNGS002A UTGNGS003A	competencies into a generic utilities core focus				range and subject to notes above
UEGNSG106A	Coordinate repair of pipeline, facilities and equipment	UTGNGS312B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG107A	Control gas odorisation	UTGNGS313B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG108A	Operate and monitor pipeline control systems	UTGNGS311A	Change of code from UTG98	Nil	4	120	Full — with relevant range and subject to notes above
UEGNSG109A	Control field pipeline operations	UTGNGS314A	Change of code from UTG98	Nil	4	120	Full — with relevant

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
							range and subject to notes above
UEGNSG110A	Supervise technical operations for gas distribution/transmission	UTGNGS319A	Change of code from UTG98	Nil	4	120	Full — with relevant range and subject to notes above
UEGNSG111A	Produce maintenance strategies and plans for a gas facility	New unit	New unit developed for Cert IV qualification not found in UTG98	Nil	4	110	Full — with relevant range and subject to notes above
UEGNSG112A	Conduct isolation procedures for permit to work system for a Gas Industry work site	New unit	New unit developed for Cert IV qualification not found in UTG98	Nil	4	110	None
UEGNSG113A	Manage a utilities industry OHS management system	New unit	New unit developed for Diploma qualification not found	Nil	5	Core	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
			in UTG98				
UEGNSG114A	Coordinate and monitor implementation of a risk management plan for a utilities industry facility	UTGNGS321A	Change of code from UTG98	Nil	5 & 6	160	Full — with relevant range and subject to notes above
UEGNSG115A	Manage Gas Industry systems projects	UTGNGS606A	Change of code from UTG98	Nil	5 & 6	Core	Full — with relevant range and subject to notes above
UEGNSG116A	Manage Gas Industry physical resources	UTGNGS609A	Change of code from UTG98	Nil	5 & 6	Core	Full — with relevant range and subject to notes above
UEGNSG117A	Plan and implement the data acquisition and metering requirements of a gas system	UTGNGS601A	Change of code from UTG98	Nil	6	Core	Full — with relevant range and subject to

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
							notes above
UEGNSG118A	Select and commission equipment to meet pressure and temperature control specifications	UTGNGS602A	Change of code from UTG98	Nil	6	Core	Full — with relevant range and subject to notes above
UEGNSG119A	Manage workplace risk in a Gas Industry facility	UTGNGS603A	Change of code from UTG98	Nil	6	Core	Full — with relevant range and subject to notes above
UEGNSG120A	Manage gas system environmental compliance	UTGNGS604A	Change of code from UTG98	Nil	6	Core	Full — with relevant range and subject to notes above
UEGNSG121A	Prepare safe design specifications of a gas system	UTGNGS605A	Change of code from UTG98	Nil	6	Core	Full — with relevant range and subject to

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
							notes above
UEGNSG122A	Manage a customer service gas business unit	UTGNGS607A	Change of code from UTG98	Nil	6	Core	Full — with relevant range and subject to notes above
UEGNSG123A	Manage financial resources in a Gas Industry facility	UTGNGS608A	Change of code from UTG98	Nil	6	Core	Full — with relevant range and subject to notes above
UEGNSG124A	Install and maintain process control systems — extra low voltage	New unit	New unit developed for Cert IV qualification not found in UTG98	CIII Gas qualification or trade equivalent from allied industry	4	130	None
UEGNSG201A	Excavate for underground utilities services operating plant and equipment	UTGNGS302A UTGNGS317B UTGNGS318A	Collapsing of 3 units from UTG98 and re-aligned into 2 units in UEG04	Nil	2	30	Part — with relevant range and subject to

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
							notes above
UEGNSG202A	Construct and lay distribution pipelines	UTGNGS302A UTGNGS317B UTGNGS318A	Collapsing of 3 units from UTG98 and re-aligned into 2 units in UEG04	Nil	2	30	Part — with relevant range and subject to notes above
UEGNSG203A	Commission and decommission gas distribution pipelines	UTGNGS303B	Change of code from UTG98	Nil	3	80	Full — with relevant range and subject to notes above
UEGNSG204A	Coordinate gas distribution pipeline repair and modifications	UTGNGS306B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG205A	Launch and recover PIG for a gas distribution pipeline	UTGNGS307B	Change of code from UTG98	Nil	3	80	Full — with relevant range and subject to

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
							notes above
UEGNSG206A	Perform routine maintenance on distribution pipeline facilities and equipment	UTGNGS310B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG207A	Coordinate construction, laying and testing of gas distribution pipelines	UTGNGS316B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG208A	Gas distribution pipeline surveillance	New unit	New unit developed for Cert III qualification not found in UTG98	Nil	3	90	None
UEGNSG209A	First on site emergency response on a distribution pipeline	New unit	New unit developed for Cert III qualification not found in UTG98	Nil	3	110	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG210A	Supervise and monitor contract staff for work on distribution pipelines	New unit	New unit developed for Cert III qualification not found in UTG98	Nil	3	110	None
UEGNSG211A	Lay underground electrical supply cables	New unit	New unit develop for Cert III qualification not found in UTG98	Nil	2	30	None
UEGNSG301A	Coat gas pipelines	UTGNGS304A	Change of code from UTG98	Nil	3 & 4	80	Full — with relevant range and subject to notes above
UEGNSG302A	Maintain pipeline easements	UTGNGS305A	Change of code from UTG98	Nil	2 & 4	30	Full — with relevant range and subject to notes above
UEGNSG303A	Gas transmission pipeline surveillance	New unit	New unit developed for Cert III and Cert IV Transmission	Nil	3 & 4	90 (Cert III)	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
			Pipeline qualification not found in UTG98			Or Core (Cert IV)	
UEGNSG304A	Commission/decommission gas transmission pipelines	New unit	New unit developed for Cert III qualification not found in UTG98	Nil	3	80	None
UEGNSG305A	Coordinate gas transmission pipeline repair and modification	New unit	New unit developed for Cert III qualification not found in UTG98	Nil	3	90	None
UEGNSG306A	Pipeline pigging in gas transmission pipeline	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	40	None
UEGNSG307A	Perform routine maintenance on transmission pipeline facilities and equipment	New unit	New unit developed for Cert III qualification not found	Nil	3	90	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
			in UTG98				
UEGNSG308A	Identify, evaluate and control threats to transmission pipelines	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	Core	None
UEGNSG309A	First on site emergency response	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	Core	None
UEGNSG310A	Supervision and monitor contract staff	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	Core	None
UEGNSG311A	Site control of third party works in the vicinity of a transmission pipeline	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found	Nil	4	Core	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
			in UTG98				
UEGNSG312A	First response to a facility event	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	80	None
UEGNSG313A	Check and report on station conditions	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	40	None
UEGNSG314A	Liaise with third party and the community to maintain pipeline integrity and community safety	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	90	None
UEGNSG315A	Aerial transmission pipeline surveillance	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found	Nil	4	40	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
			in UTG98				
UEGNSG316A	Site control of excavations in the vicinity of a transmission	New unit	New unit developed for Cert IV Transmission Pipeline qualification not found in UTG98	Nil	4	80	None
UEGNSG317A	Monitor and report on cathodic protection systems	New unit	New unit developed for Cert IV transmission Pipeline qualification not found in UTG98	Nil	4	40	None
UEGNSG318A	Monitor and operate flow control, pressure, measuring and regulating devices for gas transmission	New unit	New unit developed for Cert IV qualification not found in UTG98	CIII Gas qualification or trade equivalent from allied industry	4	90	None
UEGNSG319A	Custody transfer metering & gas quality analysis	New Unit	New unit developed for Cert IV qualification not found in UTG98	Nil	4	120	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG401A	Maintain cathodic protection systems	UTGNGS308B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG402A	Install cathodic protection systems	UTGNGS309B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG501A	Operate gas infrastructure to meet nominated demand	New unit	New unit developed for Cert IV qualification not found in UTG98	CIII Gas qualification or trade equivalent from allied industry	4	120	None
UEGNSG502A	Control centre communication with Gas Industry stakeholders	New unit	New unit developed for Cert III qualification not found in UTG98	CIII Gas qualification or trade equivalent from allied industry	4	120	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG503A	Manage emergencies and critical incidents for gas infrastructure	New Unit	New unit developed for Cert IV qualification not found in UTG98	CIII Gas qualification or trade equivalent from allied industry	4	120	None
UEGNSG504A	Monitoring and controlling field activities	New Unit	New unit developed for Cert IV qualification not found in UTG98	CIII Gas qualification or trade equivalent from allied industry	4	130	None
UEGNSG505A	Use control centre systems to monitor and control gas infrastructure	New Unit	New unit developed for Cert IV qualification not found in UTG98	CIII Gas qualification or trade equivalent from allied industry	4	110	None
UEGNSG601A	Assess the operational capability of gas safety equipment on tankers	UTGNGS201A	Change of code from UTG98	Nil	2	30	Full — with relevant range and subject to notes above

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG602A	Load, discharging LPG by road tanker	UTGNGS202A	Change of code from UTG98	Nil	2	30	Full — with relevant range and subject to notes above
UEGNSG603A	Load, unload and exchanging gas cylinders	UTGNGS203A	Change of code from UTG98	Nil	2	30	Full — with relevant range and subject to notes above
UEGNSG604A	Fill gas cylinders	UTGNGS204A	Change of code from UTG98	Nil	2	30	Full — with relevant range and subject to notes above
UEGNSG605A	Refurbish gas cylinders	UTGNGS605A	Change of code from UTG98	Nil	2	30	Full — with relevant range and subject to notes above

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG606A	Monitor and control the transfer of LPG	UTGNGS206B	Change of code from UTG98	Nil	3	80	Full — with relevant range and subject to notes above
UEGNSG607A	Process LPG	UTGNGS207B	Change of code from UTG98	Nil	3	80	Full — with relevant range and subject to notes above
UEGNSG608A	Perform minor maintenance on gas processing/storage facilities and equipment	UTGNGS208B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG609A	Coordinate repair of faults in gas processing/storage facilities and equipment	UTGNGS209B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG610A	Control storage of LPG in terminal	UTGNGS210B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG611A	Control LPG storage/processing operations	UTGNGS211A	Change of code from UTG98	Nil	4	110	Full — with relevant range and subject to notes above
UEGNSG612A	Supervise technical operations for liquefied petroleum gas storage and processing	UTGNGS320A	Change of code from UTG98	Nil	4	120	Full — with relevant range and subject to notes above
UEGNSG701A	Process meter reading information using appropriate technology	New unit	New unit developed for Cert II qualification not found in UTG98	Nil	2	30	None

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CSU Code in UEG06 Version 1	Title	UTG98 Competency Standard Unit Code	Relationship and comments to units in the former Training Package	Prerequisite requirements (also refer to each unit for definitive prerequisites)	AQF	Weighting Points	Equivalent — Full, part or none
UEGNSG702A	Read and record meter readings	UTGNGS101A	Change of code from UTG98	Nil	2	30	Full — with relevant range and subject to notes above
UEGNSG703A	Investigate billing exceptions/conditions	UTGNGS102B	Change of code from UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG801A	Monitor and operate complex flow control, measuring and regulating devices for gas pressure control	New unit	New unit developed for Cert III qualification not found in UTG98	Nil	3	90	Full — with relevant range and subject to notes above
UEGNSG802A	Install complex flow control, measuring and regulating devices for gas pressure control	New unit	New unit developed for Cert III qualification not found in UTG98	Nil	3	90	Full — with relevant range and subject to notes above

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1.3.00 Assessment Guidelines

Volume 1 Part 3

Assessment Guidelines

1.3.01 Introduction

3.1 Introduction

These Assessment Guidelines provide the endorsed framework for assessment of units of competency in this Training Package. They are designed to ensure that assessment is consistent with the Australian Quality Training Framework (AQTF) Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012. Assessments against the units of competency in this Training Package must be carried out in accordance with these Assessment Guidelines.

Note:

a. Using this guideline to support any assessment strategy or process does not remove the responsibility of employers and employees to ensure appropriate 'duty of care' arrangements are maintained under relevant occupational health and safety legislation, and any other prevailing legislation, regulation, standard or code. RTOs should recognise this in their assessment processes and provide requisite advice.

b. In the assessment process it should be acknowledged that State/Territory regulatory requirements and/or Codes of Practice may vary. Therefore there may be a requirement for the demonstration of a greater range of items to those specified in respective competency standard units. RTOs should incorporate this in their assessment processes and practices.

c.

1.3.02 Assessment System Overview

3.2 Assessment System Overview

This section provides an overview of the requirements for assessment when using this Training Package, including a summary of the AQTF requirements; licensing/registration requirements; and assessment pathways.

Quality assessment underpins the credibility of the vocational education and training sector. The Assessment Guidelines of a Training Package are an important tool in supporting quality assessment.

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Assessment within the National Skills Framework is the process of collecting evidence and making judgements about whether competency has been achieved to confirm whether an individual can perform to the standards expected in the workplace, as expressed in the relevant endorsed unit of competency.

Assessment must be carried out in accordance with the:

- benchmarks for assessment
- specific industry requirements
- principles of assessment
- rules of evidence
- assessment requirements set out in the AQTF

By way of supporting, and reinforcing, both the concept of competency and the competency standard unit, the Gas Industry embraces the following tenets:

- Wherever practicable, summative (or final) assessment is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with any approved industry and, Regulatory policy in this regard.
- All persons may claim formal recognition for an assessment of an individual competency standard unit, or a group of units (skill clusters).
- All persons have the right to have relevant competencies recognised through the most expeditious assessment system and method.

Benchmarks for Assessment

The purpose of assessment is to confirm through evidence whether an individual can perform to the standards expected in the Gas Industry workplace, as expressed in the relevant endorsed competency standard unit.

The competency standard units in this Training Package are the benchmarks for assessment in the Gas Industry. They are the basis for nationally recognised Australian Qualifications Framework (AQF) qualifications and Statements of Attainment issued by Registered Training Organisations (RTOs).

The competency standard units in this Training Package include:

- National Gas Industry (UEG) Competency Standards, Version 1, 2006 and subsequent endorsed revisions.
- Imported competency standard units from other endorsed Training Packages that have been valued by the National Gas Industry Competency Advisory Council (NGICAC) for inclusion in Qualifications in this Training Package.

An index of the developed competency standard units is contained in Volume 1 Part 2.

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Assessment Requirements of the Australian Quality Training Framework

Assessment leading to nationally recognised AQF qualifications and Statements of Attainment in the vocational education and training sector must meet the requirements of the AQTF as expressed in the AQTF 2010 Essential Standards for Registration or the Standards for NVR Registered Training Organisations 2012.

The AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012 can be downloaded from http://www.training.com.au.

The following points summarise the assessment requirements.

Registration of Training Organisations

Assessment must be conducted by, or on behalf of, an RTO formally registered by a State or Territory Registering/Course Accrediting Body in accordance with the AQTF 2010 or the Standards for NVR Registered Training Organisations 2012. The RTO must have the specific competency standard units and/or AQF qualifications on its scope of registration.

The Registered Training Organisation is to be responsible for all aspects of assessment. The assessment must cover the critical aspects of evidence (assessment) detailed in each competency standard unit. In addressing these critical aspects, and ensuring reasonable consistency, the assessment is to ensure that:

- the individual satisfies the requirements in terms of underpinning/essential knowledge and associated skills so that their ability to transfer the competency to differing circumstances may reasonably be inferred
- the individual is competent to safely perform all the practical applications required.

The RTO is also responsible for the issue of formal recognition in the form of National Qualifications or Statements of Attainment and where regulatory requirements apply provide additional information so required, and enter, where applicable and preferred by industry relevant information into an individual Industry Skills Passport, or other industry approved instrument. The RTO will therefore:

- issue the National Qualification based on individuals having been assessed as competent for the qualification and all the competency standard units which constitute the qualification. (See Part 1 of this Training Package), and/or
- issue formal recognition (Statements of Attainment) in respect of individual or clusters of competency standard units for which candidates have been assessed and found competent, and/or
- where required for regulated or industry purposes, issue additional formal information as specified by the industry and relevant regulator.

Quality Training and Assessment

Each RTO must provide quality training and assessment across all its operations. See the AQTF 2010 Essential Standards for Initial and Continuing Registration, Standard 1 or the Standards for NVR Registered Training Organisations 2012.

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Assessor Competency Requirements

Each person involved in training and assessment must be competent for the functions they perform. See the AQTF 2010 Essential Standards for Initial and Continuing Registration, Standard 1 for assessor (and trainer) competency requirements or the Standards for NVR Registered Training Organisations 2012. See also the AQTF 2010 Users' Guide to the Essential Standards for Registration – Appendix 2.

Assessment Requirements

The RTOs assessments, including RPL, must meet the requirements of the relevant endorsed Training Package. See the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012 or the Standards for NVR Registered Training Organisations 2012.

Assessment Strategies

Each RTO must have strategies for training and assessment that meet the requirements of the relevant Training Package or accredited course and are developed in consultation with industry stakeholders. See the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

National Recognition

Each RTO must recognise the AQF qualifications and Statements of Attainment issued by any other RTO. See the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

Access and Equity and Client Outcomes

Each RTO must adhere to the principles of access and equity and maximise outcomes for its clients. See the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

Monitoring Assessments

Training and/or assessment provided on behalf of the RTO must be monitored to ensure that it is in accordance with all aspects of the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

Recording Assessment Outcomes

Each RTO must manage records to ensure their accuracy and integrity. See the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

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Issuing AQF qualifications and Statement of Attainment

Each RTO must issue AQF qualifications and Statements of Attainment that meet the requirements of the current AQF Implementation Handbook and the endorsed Training Packages within the scope of its registration. An AQF qualification is issued once the full requirements for a qualification, as specified in the nationally endorsed Training Package are met. A Statement of Attainment is issued when an individual has completed one or more units of competency from nationally recognised qualification(s)/courses(s). See the AQTF and the edition of the AQF Implementation Handbook—available on the AQF Council website http://www.aqf.edu.au.

Licensing/Registration Requirements

Licensing and registration requirements that apply to specific industries, and vocational education and training, vary between each State and Territory, and can regularly change. The developers of this Training Package consider that the licensing/registration requirements described in this section apply to RTOs, assessors or candidates with respect to this Training Package. While reasonable care has been taken in its preparation, the developers of this Training Package and the Department cannot guarantee that the list is definitive or accurate at the time of reading; the information in this section is provided in good faith on that basis.

Contact the relevant State or Territory Department(s) to check if the licensing/registration requirements described below still apply, and to check if there are any others with which you must comply. For further information contact:

Jurisdiction	Organisation	Website	Telephone Number
Australian Capital Territory	ACT Accreditation and Registration Council	www.det.act.gov.au/vhe/accreditation_and_registration	02 6205 7091
New South Wales	Vocational Education and Training Accreditation Board, NSW	http://www.service.nsw.gov.au/nswgovdirectory/vocational-education-and-training-accreditation-board-nsw	13 77 88
Northern Territory	NT Department of Education and Training	www.det.nt.gov.au/rto	08 8901 1339
Queensland	QLD Training and Employment Recognition Council	www.training.qld.gov.au/registration	(07) 3237 9959; (07) 3222 2775
South Australia	SA Training and Skills Commission	www.training.sa.gov.au	08 8226 4359

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Tasmania	Tasmanian Qualifications Authority (TQA)	www.tqa.tas.gov.au	03 6233 6354
Victoria	Victorian Registration and Qualifications Authority (VRQA)	www.vrqa.vic.gov.au	03 9637 2806
Western Australia	WA Training Accreditation Council	www.tac.wa.gov.au	08 9441 1910

Licensing and/or registration requirements relevant to training, assessment and performance in the workplace of competencies in the Gas Industry Training Package are documented in the relevant units of competency at: 1.2) License to practice.

Licensing Line News

Licensing Line News is a Department of Education, Employment and Workplace Relations funded communication initiative to support the Council of Australian Governments (COAG) occupational licensing reform agenda. This website provides updated information on licensing and regulatory requirements. See: http://www.licensinglinenews.com/

Requirements for Assessors

In order to conduct assessment for statutory licensing or other industry registration requirements, assessors must meet the requirements of relevant authorities in the jurisdiction within which they are providing training and assessment. For further information contact the licensing/regulatory authorities listed above.

Mutual Recognition

Registered Training Organisations may contact E-Oz Energy Skills Australia as the declared National Industry Skills Council for the ElectroComms and EnergyUtilities Industry, for assistance regarding mutual recognition.

Partnership Arrangements

RTOs must have, and comply with, written agreements with each organisation providing training and/or assessment on its behalf. See AQTF Standard 1.6 of the Standards for Registered Training Organisations or the Standards for NVR Registered Training Organisations 2012.

RTOs operating in partnership with other organisations are responsible for the quality of the partnering organisation services and service outcomes. Under the AQTF, RTOs may through written agreement enter into partnerships with external and/or non-registered third party organisations, such as schools, industry organisations and enterprises, for delivery and assessment within the RTOs scope of registration.

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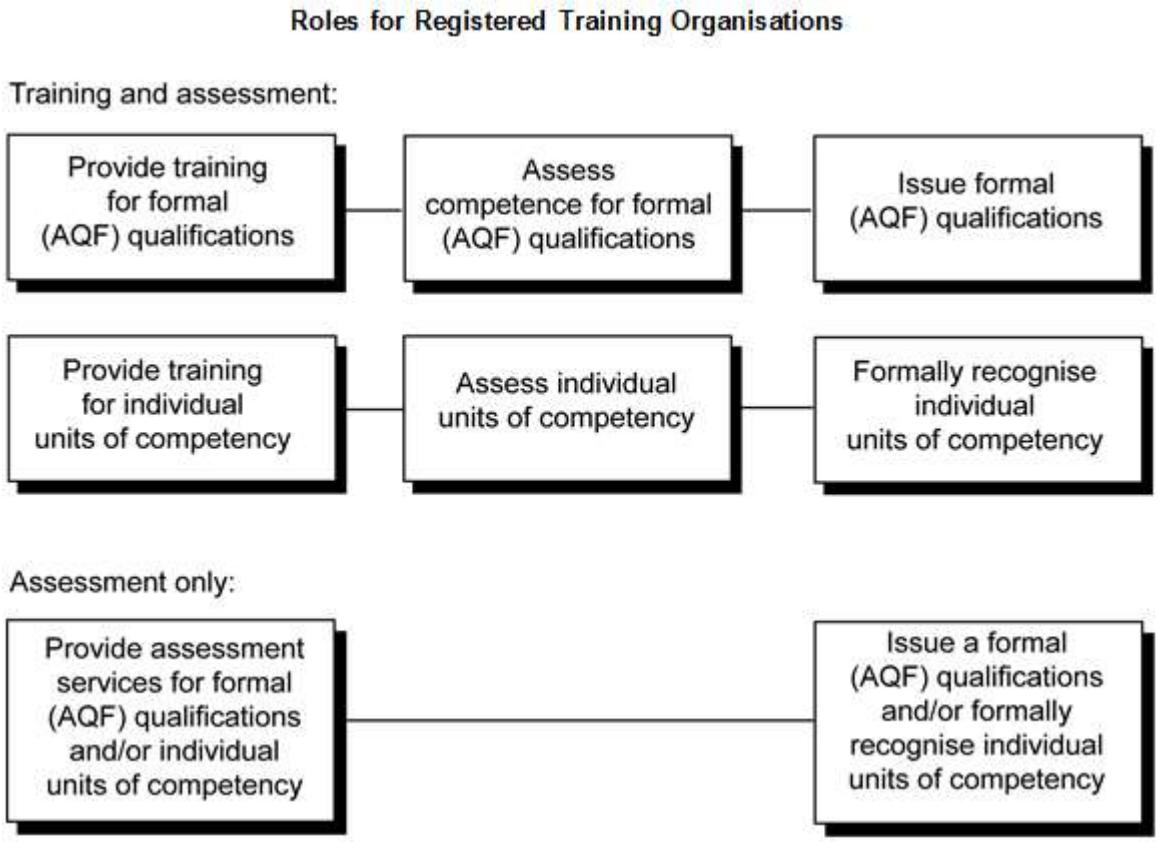
External and/or non-registered third party organisations need not be Registered Training Organisations (RTOs). However, the agreement must specify how each party to the agreement will discharge its responsibilities for compliance with all aspects of the Standards for Registered Training Organisations.



Where the RTO establishes a partnership arrangement it must have a formal agreement with the organisation that provides the training and/or assessment services. The agreement must specify how all parties will discharge their responsibilities for ensuring the quality of the training and/or assessment conducted on its behalf, including the qualification requirements of those to be involved in delivery and assessment.

The RTO has full responsibility for the quality and outcomes of any training or assessment conducted on its behalf, and must maintain a register of all such agreements.

Recording Assessment Outcomes

Each RTO must manage records to ensure their accuracy and integrity. See the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.

Statements of Attainment and qualifications issued under the AQF must comply with the relevant provisions in the current Australian Qualifications Framework Implementation Handbook and any other guides issued by the respective State Training Authorities, as well as any regulated requirements and those preferred by industry and advised within this Training Package.

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Issuing AQF Qualifications and Statements of Attainment

Each RTO must issue AQF qualifications and Statements of Attainment that meet the requirements of the AQF Implementation Handbook and the endorsed Training Packages within the scope of its registration.

An AQF qualification is issued once the full requirements for a qualification, as specified in the nationally endorsed Training Package, are met as well as a statement of results achieved of the specified Essential Knowledge and Associated Skills underpinning each competency standard unit. A Statement of Attainment is issued where the individual is assessed as competent against fewer competency standard unit(s) (along with the statement of essential knowledge and skills results) than required for an AQF qualification.

For this Training Package the RTO is responsible for the issuance of formal recognition in the form of national qualifications or statements of attainment. Where regulatory requirements apply and if required by the relevant regulatory authority the RTO should enter relevant information into the individual's industry Skills Passport or approved instrument. Where the industry prefers the use of an industry Skills Passport or industry approved instrument this may be negotiated directly with RTOs.

Where regulated requirements advise the use of training support material(s) and it is used to provide the Essential Knowledge and Skills specified in the competency standard unit, then, details of the support material(s) and their achievement should form part of the statement of results attached to the qualification or statement of attainment.

Requirements for Assessors

In order to conduct assessment for statutory licensing or other industry registration requirements assessors must meet the requirements established by regulatory agencies and respective nominees, in addition to the AQTF requirements. Assessors are to liaise with respective agencies to ensure respective requirements are followed and met.

Requirements for RTOs

Selected competency standard units and qualifications in this Training Package provide the basis for a range of statutory licensing and industry registration arrangements. To satisfy these licensing and registration arrangements, RTOs are to keep abreast of developments and any additional requirements detailed by such bodies and their respective nominees. RTOs and their assessors are therefore required to liaise with the Training Package developer and respective agencies to ensure requirements are known and met.

Requirements for Candidates

Individuals being assessed under statutory licensing and industry registration systems may be required to comply with training and experience requirements additional to any minimum requirements identified in this Training Package. These additional requirements are to be formally communicated by the RTOs to individuals prior to the delivery of the Training Package outcomes.

Pathways

The competencies in this Training Package may be attained in a number of ways including through:

- formal or informal education and training

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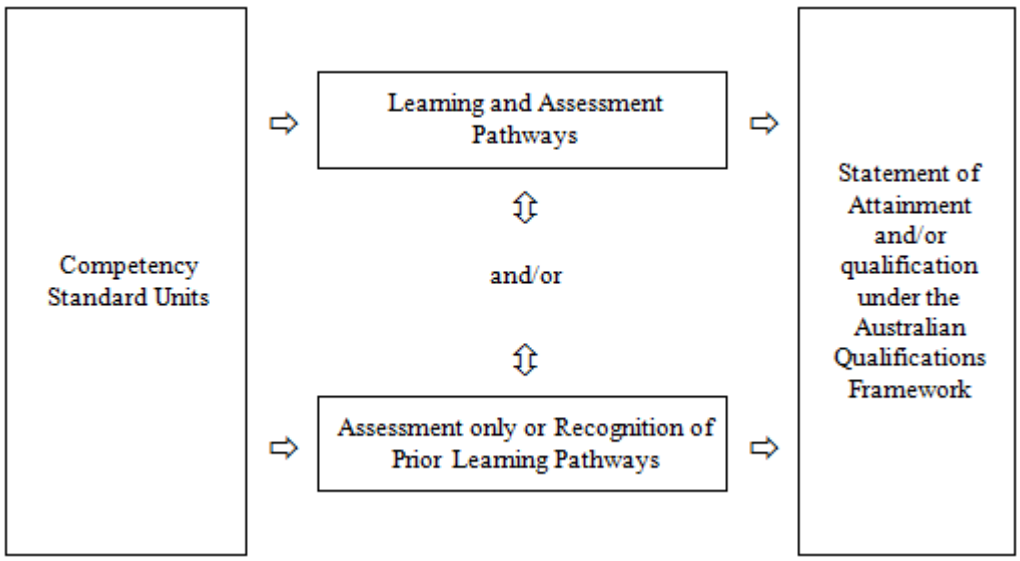
- experiences in the workplace
- general life experience, and/or
- any combination of the above.

Assessment under this Training Package leading to an AQF qualification or Statement of Attainment may follow a learning and assessment pathway, or a recognition pathway, or a combination of the two as illustrated in the following diagram.



Each of these assessment pathways leads to full recognition of competencies held – the critical issue is that the candidate is competent, not how the competency was acquired.

Assessment, by any pathway, must comply with the assessment requirements set out in the Standards for Registered Training Organisations.

Learning and Assessment Pathways

Usually, learning and assessment are integrated, with evidence being collected and feedback provided to the candidate at anytime throughout the learning and assessment process.

Learning and assessment pathways may include structured programs in a variety of contexts using a range of strategies to meet different learner needs. Structured learning and assessment programs could be: group-based, work-based, project-based, self-paced, action learning-based; conducted by distance or e-learning; and/or involve practice and experience in the workplace.

Learning and assessment pathways to suit Australian Apprenticeships have a mix of formal structured training and structured workplace experience with formative assessment activities through which candidates can acquire and demonstrate skills and knowledge from the relevant units of competency.

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New Entrants

Learning and assessment for new entrants is integrated and in part structured, with assessment evidence being collected progressively and feedback being provided to the candidate any time throughout the competency development learning and assessment process. Learning and assessment pathways may include structured programs in a variety of contexts using a range of strategies to meet different learner needs. Structured learning and assessment programs could be group-based, work-based, project-based, self paced, action learning-based; conducted by distance or e-learning; and involve practice and experience in the workplace.

Learning and assessment pathways that suit New Apprenticeships are a mix of formal training and workplace experience. They may be structured but need to take into account:

- typical irregular work activity
- work availability as it affects access to the range of activities required to be covered
- structured formative assessment activities through which candidates can acquire and demonstrate the practical skills and knowledge identified in the relevant competency standards.

The model that best accommodates a learner who has had no prior experiences (new entrant) in the industry is one that recognises that learning occurs/is facilitated best in directed workplace learning activities followed by recurring practice of these activities in a structured educational program. That is, the model is based on a combination of on-the-job and off-the-job learning experiences aligned to competency standard unit requirements. It recognises that learning occurs in an active way and should involve appropriate learning strategies. The model provides coherence and integration between respective components. It also represents:

- a most effective and efficient means of effecting quality education and training
- a means of assessing if learning has occurred and competence has been attained.

Competency standard units are specifications of work performance which do not provide specific information about the provision of training or detail as to how assessment activities are to be carried out. Given the nature of the information (content and its interrelationship) contained within the competency standard units there is the potential for a variety of interpretations to occur when RTOs are designing training programs.

To improve opportunities for consistency in interpretation, the industry's preferred approach is to support the use of appropriate learning and assessment strategies. To this end it has developed a Guideline Training and Assessment Model detailing the preferred approach. A copy of the model is available from E-Oz Energy Skills Australia.

Recognition of Prior Learning Pathway

Recognition of Prior Learning (RPL) is an assessment process which determines the credit outcomes of an individual application for credit.

The availability of Recognition of Prior Learning (RPL) provides all potential learners with access to credit opportunities.

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The recognition of prior learning pathway is appropriate for candidates who have previously attained skills and knowledge and who, when enrolling in qualifications, seek to shorten the duration of their training and either continue or commence working. This may include the following groups of people:

- existing workers;
- individuals with overseas qualifications;
- recent migrants with established work histories;
- people returning to the workplace; and
- people with disabilities or injuries requiring a change in career.

As with all assessment, RPL assessment should be undertaken by academic or teaching staff with expertise in the subject, content of skills area, as well as knowledge of and expertise in RPL assessment policies and procedures.

Assessment methods used for RPL should provide a range of ways for individuals to demonstrate that they have met the required outcomes and can be granted credit. These might include:

- questioning (oral or written)
- consideration of a portfolio and review of contents
- consideration of third party reports and/or other documentation such as documentation such as articles, reports, project material, papers, testimonials or other products prepared by the RPL applicant that relate to the learning outcomes of the relevant qualification component
- mapping of learning outcomes from prior formal or non-formal learning to the relevant qualification components
- observation of performance, and
- participation in structured assessment activities the individual would normally be required to undertake if they were enrolled in the qualification component/s.

In a Recognition of Prior Learning (RPL) pathway, the candidate provides current, quality evidence of their competency against the relevant unit of competency. This process may be directed by the candidate and verified by the assessor. Where the outcomes of this process indicate that the candidate is competent, structured training is not required. The RPL requirements of the AQTF must be met.

As with all assessment, the assessor must be confident that the evidence indicates that the candidate is currently competent against the endorsed unit of competency. This evidence may take a variety of forms and might include certification, references from past employers, testimonials from clients, work samples and/or observation of the candidate. The onus is on candidates to provide sufficient evidence to satisfy assessors that they currently hold the relevant competencies. In judging evidence, the assessor must ensure that the evidence of prior learning is:

- authentic (the candidate's own work);
- valid (directly related to the current version of the relevant endorsed unit of competency);
- reliable (shows that the candidate consistently meets the endorsed unit of competency);

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- current (reflects the candidate's current capacity to perform the aspect of the work covered by the endorsed unit of competency); and
- sufficient (covers the full range of elements in the relevant unit of competency and addresses the four dimensions of competency, namely task skills, task management skills, contingency management skills, and job/role environment skills).

Credit Transfer

Credit is the value assigned for the recognition of equivalence in content between different types of learning and/or qualifications which reduces the volume of learning required to achieve a qualification.

Credit arrangements must be offered by all RTOs that offer Training Package qualifications. Each RTO must have a systematic institutional approach with clear, accessible and transparent policies and procedures.

Competencies already held by individuals can be formally assessed against the units of competency in this Training Package, and should be recognised regardless of how, when or where they were acquired, provided that the learning is relevant to the unit of competency outcomes.

Combination of Pathways

Credit may be awarded on the basis of a combination of credit transfer plus an individual RPL assessment for additional learning. Once credit has been awarded on the basis of RPL, subsequent credit transfer based on these learning outcomes should not include revisiting the RPL assessment but should be based on credit transfer or articulation or other arrangements between providers.

Where candidates have gained competencies through work and life experience and gaps in their competence are identified, or where they require training in new areas, a combination of approaches may be appropriate.

In such situations, the candidate may undertake an initial assessment to determine their current competence using an 'assessment only pathway'. Once current competence is identified, a structured training and assessment program may be established to ensure that the candidate acquires the required additional competencies or gap. These would be achieved through a 'training and assessment pathway'.

1.3.03 Learning and Assessment pathways

3.3 Learning and Assessment pathways

Within the general Training Package Pathways continuum framework, referred to in the previous section, three distinct Assessment Pathways have been identified for use within the Gas Industry.

Pathway 1: New entrant competency development

Pathway 2: Recognition of currently held competencies or prior learning and workplace experience

Pathway 3: Recognition of other currently held competencies (other industry standards)

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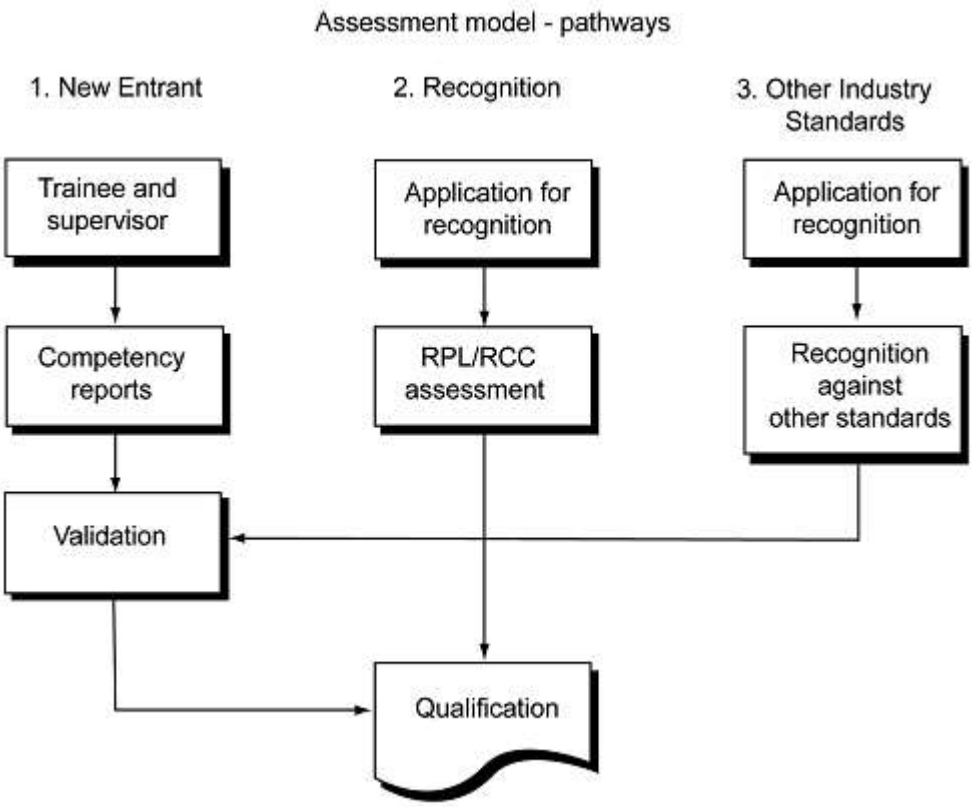

Although not exclusive, the three pathways provide typical recognition processes for individual competency standard units or groups of units that make up Qualifications or Statements of Attainment. From an industry perspective, assessment is to lead to formal recognition of the Industry's benchmark competencies or formal recognition of competencies from other industries. Formal recognition may be for individual competencies or for groups of competencies, which may also be combined to satisfy the requirements of a National Qualification.

Pathway 1: New Entrant Competency Development

This pathway is for individuals who are undertaking an industry-preferred competency development plan. The users of this pathway may be:

- contracted employment based employees who are generally new apprentices and who undertake an approved training program that supports a competency development plan, **or**
- those that undertake an approved structured training program in an institutional environment to achieve competency outcomes.

Evidence of Competency

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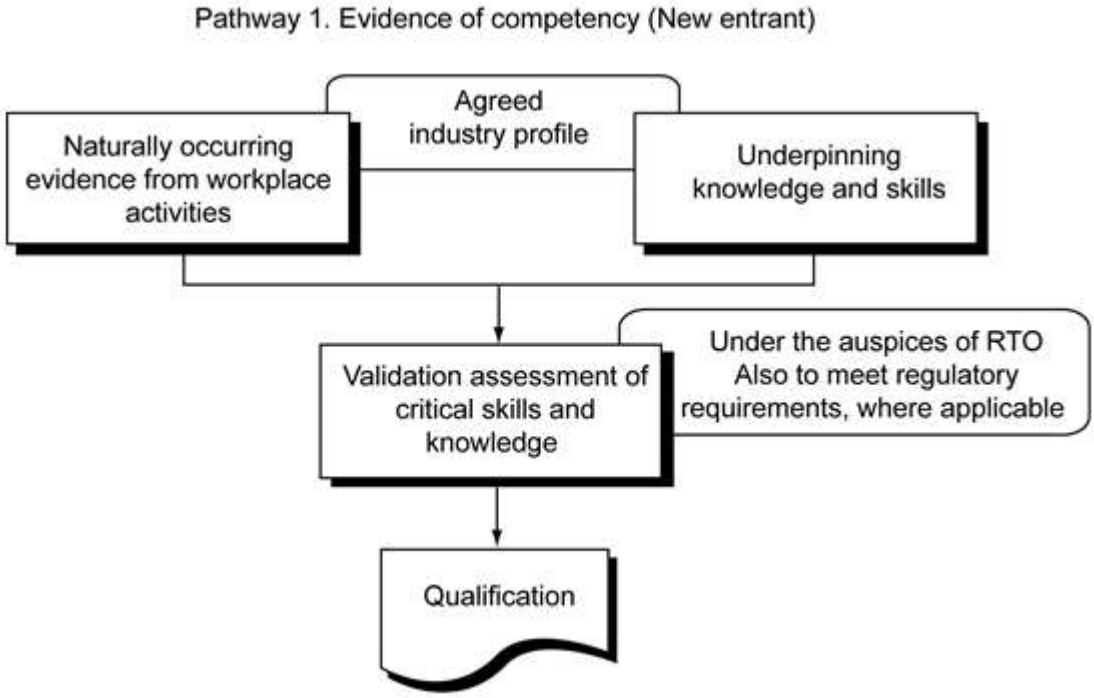
In this pathway evidence required to determine competence for the issuance of the qualification or Statement of Attainment is to be in accordance with **3.5 Assessment within the Gas Industry** contained herein. The evidence however, must be sufficient in quality, quantity and type and be gathered in an on-going way and in a timely and accurate manner from several sources, such as workplace and educational experiences based on the approved industry training program and related competency development plan in which individuals are involved.



Pathway 2: Recognition of Prior Learning/Current Competencies (RPL/RCC)

This pathway is for those who may have acquired skills and knowledge in relevant competency standard units outside formally recognised processes. The users of this pathway will include applicants from overseas and also applicants who have developed skills in allied industries but who have no formal recognition in respect of industry standards or qualifications. In using this pathway RTOs should also identify if any equivalence mapping document exists as per Pathway 3.

Additionally, an existing national mechanism for the recognition as a tradesperson exists through the *Tradesmen's Rights Regulation Act*, which is administered by Trades Recognition Australia (TRA), part of the Commonwealth Department of Industrial Relations. TRA grants recognition for the purposes of migration but further analysis of the applicant’s knowledge and skills is often needed before competency can be attributed.

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The Trades Recognition Australia process mainly operates to provide formal recognition of the knowledge and skills migrants have developed through structured training and/or work experience in overseas countries. It is also an important mechanism for the assessment and recognition of the competencies of people who may not have had access to the industry-preferred new entrant model of competency development for trade vocations in Australia. For more information visit:

http://www.workplace.gov.au/workplace/Category/SchemesInitiatives/TRA/TRA-TradeClassificationsAssessed.htm

Evidence of Competency

In this pathway many types of evidence can be used to determine competency for the issuance of Qualifications or Statements of Attainment. The evidence may come from records of previous relevant work experience. This type of evidence will need endorsement by a supervisor/mentor skilled in the units for which recognition is sought. Evidence may consist of portfolios, which include projects or products completed for other purposes or from non-registered training programs or ad hoc prior experience or from overseas programs of a similar nature.

Industry would expect this evidence to be assessed by the Registered Organisation (or their nominee – a qualified industry assessor) and a judgement made. The result will be either that the applicant is judged competent for the competency standard unit(s) or gaps are identified and noted.

Where a gap is identified the applicant can either accept the judgement, pursue gap training or elect to appeal the decision. Evidence used in the judgement process may come from a variety of sources including a personal portfolio, curriculum vitae, interview, and comments by peers or employers and challenge tests.

The recognition of a subset of the competency standard units — skills, forming a cluster of Statements of Attainment within a Qualification — would generally require individuals to complete the additional units in order to attain the relevant Qualification Pathway that provides credit. This information may be developed by the Registered Training Organisation in consultation with respective stakeholders.

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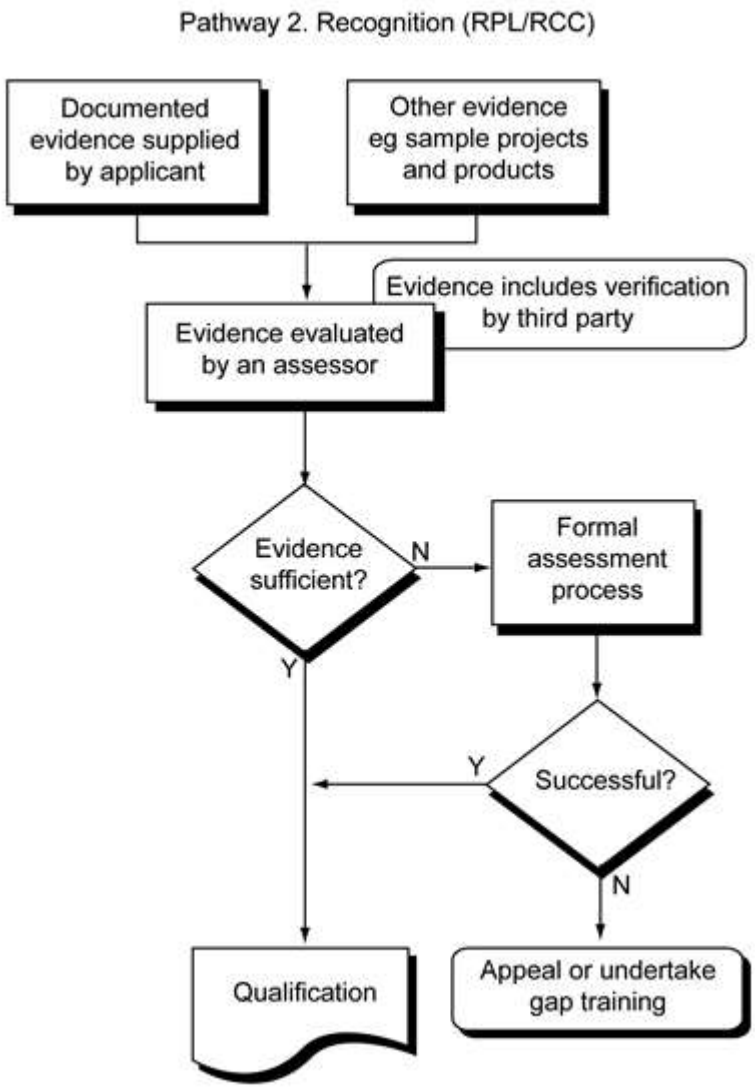

Pathway 3: Recognition of Other Industry/Enterprise Standards

This pathway is for individuals who have developed skills based on other nationally recognised industry or enterprise competency standards and who have received formal recognition in competency standards unit(s) from these areas. Recognition of equivalence of competency standard units between industries is through an agreed and formal mapping process. Equivalence of outcomes are declared by Industry Skills Councils for respective Training Packages. The recognition of Units, as part of any mapping arrangements is the responsibility of the parties who maintain the competency standards; in this instance E-Oz Energy Skills Australia. RTOs should investigate whether there are any existing mapping agreements by contacting the relevant Industry Skills Councils.

Evidence of Competency

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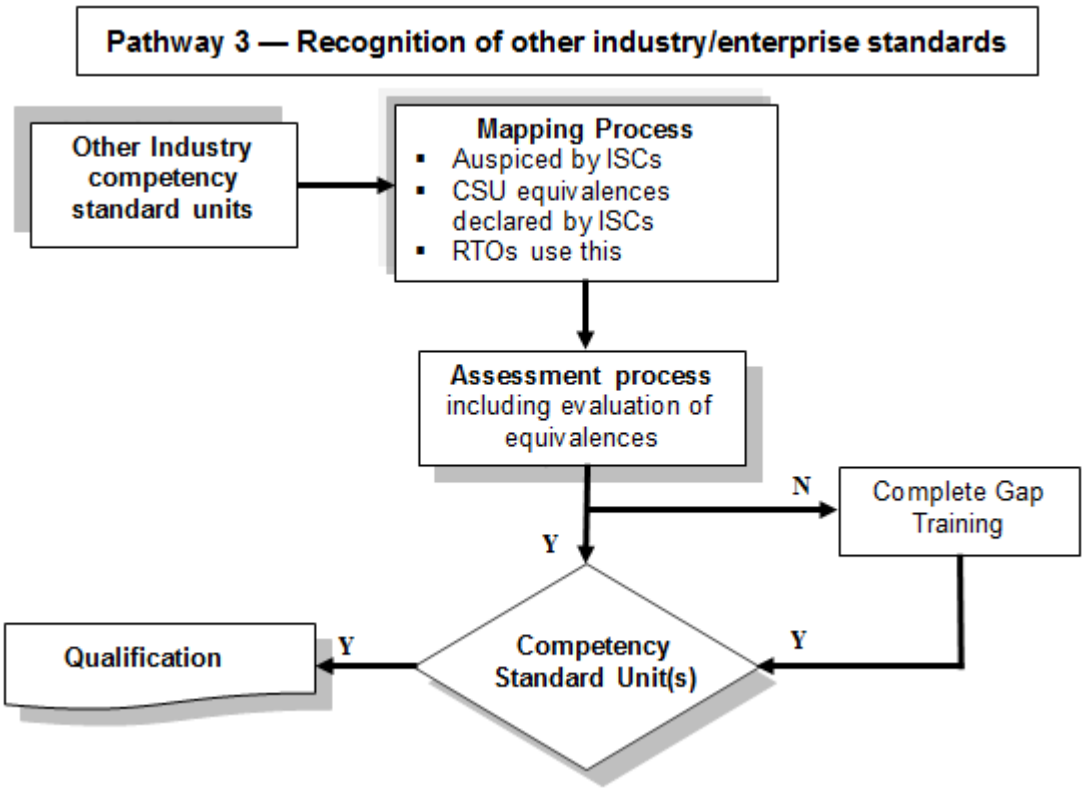
In this pathway, evidence will be based on formally-agreed mapping declaration(s) of competency standards unit(s) from other Industry Competency Standards against the unit(s) in the Gas Industry Training Package for which formal recognition is sought. The equivalence mapping declaration agreement would be formalised between Industry Skills Councils.

The applicant would be required to supply details of the unit(s) held including any currency, and the unit(s) sought in consultation with the RTO, including submitting any assessment reports to the RTO for a determination. This equivalence evidence will be reviewed against the mapping advice obtained by the RTO (or their nominee) and a judgement made. The result will be either that the applicant is deemed competent for the unit(s) and a Statement of Attainment issued, or gaps are identified and noted. Where a gap has been identified the applicant can consider the judgement, pursue gap training or appeal the decision. Evidence used in the judgement process is based on the individual's records of achievement relative to the competency standard units for which recognition is sought.



1.3.04 Assessment Principles within the Gas Industry

3.4 Assessment Principles within the Gas Industry

All assessments carried out by RTOs are required to demonstrate compliance with the principles of assessment:

- validity
- reliability

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- flexibility
- fairness
- sufficiency

These principles must be addressed in the:

- design, establishment and management of the assessment system for this Training Package
- development of assessment tools, and
- the conduct of assessment.

Assessment Principles

Validity

Assessment is valid when the process is sound and assesses what it claims to assess.

Validity requires that:

a. assessment against the units of competency must cover the broad range of skills and knowledge that are essential to competent performance
b. assessment of knowledge and skills must be integrated with their practical application
c. judgement of competence must be based on sufficient evidence (that is, evidence gathered on a number of occasions and in a range of contexts using different assessment methods). The specific evidence requirements of each unit of competency provide advice on sufficiency

The assessment instruments and tasks must be designed, implemented and administered in a manner which ensures they measure the intended Essential Knowledge and Associated Skills with workplace performance requirement, and the evidence gathered relates directly to the competency standard unit(s) being assessed.

Validity includes the need to involve others with expertise in the assessments being implemented in the development, selection and review of the instruments and methods used in the assessment process.

To be valid the assessment judgements need to be based on more than one task with evidence gathered on a number of occasions and in a variety of contexts or situations.

Reliability

Reliability refers to the degree to which evidence presented for assessment is consistently interpreted and results in consistent assessment outcomes. Reliability requires the assessor to have the required competencies in assessment and relevant vocational competencies (or to assess in conjunction with someone who has the vocational competencies). It can only be achieved when assessors share a common interpretation of the assessment requirements of the unit(s) being assessed.

RTOs will ensure clear guidelines are available to assessors to ensure consistent judgements are made based on the evidence provided. Where industry and/or regulatory-endorsed training support materials are available, it is recommended that this material is used to support and increase the reliability of assessment. This approach will assist in establishing and maintaining consistency of performance of the essential knowledge and skills and work performance requirements specified in the competency standard units.

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Flexibility

To be flexible, assessment should reflect the candidate's needs; provide for recognition of competencies no matter how, where or when they have been acquired; draw on a range of methods appropriate to the context, competency and the candidate; and support continuous competency development.

The assessment approach should be developed to meet the needs of potential candidates and where appropriate negotiated between the candidate and assessor.

Assessments are to cover both the skill and knowledge components of competency as described in the competency standard units without any one-assessment method being prescribed.

A range of assessment instruments and items should be made available and, where appropriate, the time and place of assessment should be determined to suit the availability of resources, assessors and candidates. However, where supported by the Industry for the purposes of enhancing consistency, the preferred assessment arrangements should be adopted and used.

Fairness

Fairness in assessment requires consideration of the individual candidate's needs and characteristics, and any reasonable adjustments that need to be applied to take account of them. It requires clear communication between the assessor and the candidate to ensure that the candidate is fully informed about, understands and is able to participate in, the assessment process, and agrees that the process is appropriate. It also includes an opportunity for the person being assessed to challenge the result of the assessment and to be reassessed if necessary.

Assessment methods and practices shall be equitable to all individuals.

Candidates will be made aware of the assessment methods and procedures together with details of the criteria against which they are to be assessed.

Specific needs of individual candidates will be accommodated as is practicable and reasonable adjustment is made while maintaining the integrity of the assessment outcomes based on the competency standard unit(s) being assessed.

Sufficiency

Sufficiency relates to the quality and quantity of evidence assessed. It requires collection of enough appropriate evidence to ensure that all aspects of competency have been satisfied and that competency can be demonstrated repeatedly. Supplementary sources of evidence may be necessary. The specific evidence requirements of each unit of competency provide advice on sufficiency. Sufficiency is also one of the rules of evidence.

In all instances competency is to be attributed on evidence sufficient to show that a person has the necessary skills required for the scope of work. This includes:

- Task skills — performing individual tasks
- Task management skills — managing a number of different tasks
- Contingency management skills — responding to irregularities and breakdowns in routines, and

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- Job/role environment skills — dealing with the responsibilities and expectations of the work environment including working with others.

Evidence must demonstrate that an individual can perform competently across the specified range of activities and has the essential knowledge, understanding and associated skills underpinning competency.

Currency

The principle to be applied in the Gas Industry for currency of evidence is that claims are to be fully substantiated through both direct and supporting assessment processes.

Assessment processes must satisfy the requirement for currency in terms of:

- technology and/or processes
- recency of application

Rules of Evidence

The rules of evidence guide the collection of evidence that address the principles of validity and reliability, guiding the collection of evidence to ensure that it is valid, sufficient, current and authentic.

Valid

Valid evidence must relate directly to the requirements of the unit of competency. In ensuring evidence is valid, assessors must ensure that the evidence collected supports demonstration of the outcomes and performance requirements of the unit of competency together with the knowledge and skills necessary for competent performance. Valid evidence must encapsulate the breadth and depth of the unit of competency, which will necessitate using a number of different assessment methods.

Sufficient

Sufficiency relates to the quality and quantity of evidence assessed. It requires collection of enough appropriate evidence to ensure that all aspects of competency have been satisfied and that competency can be demonstrated repeatedly. Supplementary sources of evidence may be necessary. The specific evidence requirements of each unit of competency provide advice on sufficiency.

Current

In assessment, currency relates to the age of the evidence presented by a candidate to demonstrate that they are still competent. Competency requires demonstration of current performance, so the evidence collected must be from either the present or the very recent past.

Authentic

To accept evidence as authentic, an assessor must be assured that the evidence presented for assessment is the candidate’s own work.

Sufficiency of Evidence

In all instances competency is to be attributed on evidence sufficient to show that a person has the necessary skills required for the scope of work. This includes:

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- Task skills — performing individual tasks
- Task management skills — managing a number of different tasks
- Contingency management skills — responding to irregularities and breakdowns in routines, and
- Job/role environment skills — dealing with the responsibilities and expectations of the work environment including working with others.

Evidence must demonstrate that an individual can perform competently across the specified range of activities and has the essential knowledge, understanding and associated skills underpinning competency.

Currency of Evidence

Evidence must be relevant to what is outlined in competency standard units and not outdated or irrelevant.

Note: The deeming of competence at a point in time does not mean that competence exists for all time; competency must be maintained by use and/or retraining. Also refer to Section 3.9 Guide to Assessment Methods and Items for more detailed information on currency.

The principle to be applied in the Gas Industry for currency of evidence is that claims are to be fully substantiated through both direct and supporting assessment processes.

Additionally, assessment processes must satisfy the requirement for currency in relation to evidence of competency in terms of technology and/or processes and recency of application.

If there has been a recent change in technology, then evidence of actions before such change is unlikely to reflect the required currency. Similarly, if the individual claiming competency has not performed/applied that competency for extensive periods of time then documentary evidence would not suffice as a basis of assessment.

Authenticity

Evidence is to be genuine and relate to the person being assessed, and no one else.

By way of supporting and reinforcing both the concept of competency and the competency standard units as the currency for the Vocational Education and Training (VET) system, the Gas Industry embraces the following tenets:

- Assessment (summative or final) is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment.
- Simulation must be in accord with any prevailing industry policy. It is recognised that in some circumstances, assessment may occur outside the workplace, however this should only occur where necessary and in accord with any industry policy. In relation to this Training Package the Industry Skills Council for ElectroComms and EnergyUtilities, E-Oz Energy Skills Australia, have developed an industry Simulation Policy. This can be accessed from the E-Oz Energy Skills Australia website at: www.e-oz.com.au.
- All persons may claim formal recognition for an assessment of an individual competency standard unit or a group of units.

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- All persons have the right to have relevant competencies recognised through the most expeditious assessment system and method.
- Under-represented groups are not biased from participation and access.

Regulatory/Context of Assessment

Competency is to be determined on evidence of having consistently performed across a representative range of specified equipment, processes and activities for the scope of work and/or endorsement for which competency is being sought; autonomously and to requirements. Equivalent evidence from other sources, eg formal assessment is also acceptable.

With respect to the essential knowledge and associated skills component of each competency standard unit, assessment activities shall be in accordance with the approach required by the regulatory environment. This may include the use of industry-supported essential knowledge and associated skills learning specifications structured in a conducive learning environment to facilitate the development of depth and breadth of learning, aid in retention and enhance transferability. For this component where graded assessment is a regulatory requirement, it will apply to the underpinning knowledge off-the-job component and not the competency standard unit as a whole. The Industry preference is for a percentile based graded assessment system to be used. Also, although it is preferred that assessing competency be carried out in the workplace, it can be undertaken in a simulated work environment approved for that purpose by the industry. Refer to any Industry policy that may apply in this regard.

Assessment Judgments

Attributing Competency

The deeming of competency shall be based on evidence that is sufficient, current and authentic, so that a quality low risk judgment can be made based on the assessment principles outlined herein.

Competencies shall be attributed on evidence showing that the person deemed to be competent is able to undertake the responsibilities for all safety measures, care of technology, plant and equipment, use of standards, manuals and procedures, and care of the environment, directly related to the work function for which such competencies are required.

Note:

a. Where the consequences of unjustifiably or mistakenly deeming a person competent carries a risk of injury to persons, commerce, or damage to property and/or the environment, the level of evidence required for sufficiency is higher than where there is little risk. The risk of attributing competence to an individual should, therefore, form a critical part of the assessment process and methodology. Consideration should be given as to whether all pre-requisites and/or corequisites have been appropriately achieved.

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b. The decision to attribute competence differs from training effort and delivery. The decision to attribute competence is based on evidence being present for an assessor to attribute such and not a person in learning. Learners, however, can undertake training in competency standard units without being awarded the competency standard units even when they may not have acquired in the required sequence any of the prerequisite competency standard units. However, they cannot be attributed the competency standard unit until they have acquired the prerequisite.
c. For more detailed information refer to Section 3.9 Guide to Assessment Methods and Items.
d.

1.3.05 Assessment Processes within the Gas Industry

3.5 Assessment Processes within the Gas Industry

Within the Gas Industry sampling, profiling and portfolio are recognised as the three main methods of collecting evidence to assist the assessment processes and, while they are not mandatory, they have become accepted and the preferred industry practice. It is not the purpose of these Guidelines to provide an extensive technical description of each of these methods; however, it is important to recognise the impact each will have on the management of assessment practices. Profiling, however, is the Industry-preferred model for new entrant contracted entry-level employment, eg apprenticeships. Therefore, an overview of each is provided in this Guideline along with sample templates to assist Registered Training Organisations (RTOs) in planning, managing and administering training and assessment delivery.

1. Sampling

Sampling requires evidence of competence to be derived from a limited sample of performance event(s). Technical/application skills are normally assessed by practical measures, and knowledge underpinning performance is assessed, typically in conducive learning environments like classrooms, by conventional written or oral questioning.

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2. Profiling

Profiling requires the progressive collection of many samples through structured documentation and progress summative reporting. Progressive monitoring of direct and possibly indirect evidence, over an extended period of time is used to assist in intervention and, making judgements about the developing competency profile of the candidate/learner. The focus of evidence collection is set against the Elements; Range Statement; and critical aspects detailed in the competency standard units and complemented with the level of supervision applied. The evidence collection process is staged against known and predefined work performance outcomes as specified in the Competency standard units. Profiling will assist in obtaining a series of periodical audit assessments and/or a final holistic assessment event where regulatory/licensing requirements apply. Profiling is the preferred industry model that assists with assessment for entry-level contracted employment. Technical educational achievements may be incorporated in the Profiling Model or augment information gathered directly from the workplace into the profile. In the latter case it is preferred that a final summative and holistic assessment event be applied prior to the issuance of the qualification or relevant Statement of Attainment.

3. Portfolio

The Portfolio approach is best suited to assessment conducted as Recognition of Prior Learning (RPL) and is to be in accord with AQTF Standard 8.2 or the Standards for NVR Registered Training Organisations 2012 or its replacement/equivalent. It requires the collection or build-up of indirect evidence of an individual's competence.

The Portfolio of evidence could include Statements of Attainment issued by other RTOs (Mutual Recognition AQTF Standard 5), suitably focused references and testimonials, formal project appraisals, work records and any other evidence which is current and relevant to the competencies sought.

Opportunities for Combined Approaches

The assessment processes described above are not mutually exclusive and a combination of approaches may be implemented. The process selected will be acceptable to the industry if the outcome is valid, the approach supports industry-wide consistency, the requirements of the Competency standard units are satisfied and in accordance with the preferred industry approach and costs are acceptable to the industry.

1.3.06 Assessor Requirements

3.6 Assessor Requirements

This section identifies the specific requirements on the vocational competence and experience for assessors, to ensure that they meet the needs of industry and their obligations under AQTF, and clarifies how others may contribute to the assessment process where one person alone does not hold all the required competencies.

The integrity of the Gas Industry assessment processes is centred on the need for all assessments to be conducted under the direction or the authority of a Registered Training Organisation using qualified assessors who may function with or within the Registered Training Organisation.

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Within an assessment process, responsibility for some activities may be delegated and it is therefore not necessary that every aspect of assessment must be personally and directly attended to by a qualified assessor. For example, in a long term profiling process the qualified assessor may establish with an approved industry data gathering administrator/manager the system and identify the evidence required. They may then cause the evidence to be gathered by others after which they will examine the evidence and make judgments.

The partnership between assessors and other competent persons is essential if the information is to be qualitative. It should be noted that technical assessment responsibility and systems accountability may only be exercised by a Registered Training Organisation using qualified assessors.

Assessor Qualifications

Assessments against the competencies in this Training Package will be carried out in accordance with these endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment and where the required technical and assessment competencies may not be held by any one person.

The Assessment for Competency

Assessors are to be competent in the competencies which they are to assess or are to be assisted by an appropriate subject matter expert who is currently competent in the unit being assessed. This may also include such things as language literacy and numeracy (LLN), cultural diversity and under-represented groups, environmental, industrial, occupational health and safety (OHS).

Assessors (and their subject matter expert) are to know current industry practices for the job or the role against which the performance is being assessed, and practice the necessary interpersonal skills required in the assessment process.

All persons required to plan, assess, develop or validate assessment-related matters are to be currently competent and comply with the Australian Quality Training Framework, Standards for Registered Training Organisations, Standard 7.3 (a) and (b)] .

Using Qualified Assessors

All assessment is to be under the authority of a formally qualified assessor. Within this constraint, the Registered Training Organisation may adopt any or all of the following processes:

- using a workplace assessor who is currently competent and complies with the Australian Quality Training Framework, Standards for Registered Training Organisations, Standard 7.3 (a) and (b) and the relevant industry vocational competencies
- using a workplace assessor who is currently competent and complies with the Australian Quality Training Framework, Standards for Registered Training Organisations, Standard 7.3 (a) and (b) and who has ready access to another person who is competent in, and can advise the assessor on, the relevant vocational competencies to at least the level being assessed

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- using an assessment panel which includes at least one person who is currently competent and complies with the Australian Quality Training Framework, Standards for Registered Training Organisations, Standard 7.3 (a) and (b) as well as at least one person who is competent in the relevant vocational competencies to at least the level being assessed
- using an external assessor who is currently competent and complies with the Australian Quality Training Framework, Standards for Registered Training Organisations, Standard 7.3 (a) and (b) but with the assessment evidence being collected, utilising industry endorsed assessment procedures, by a workplace supervisor who has the relevant vocational competencies to at least the level being assessed
- using a workplace supervisor, with the relevant vocational competencies to at least the level being assessed, who utilises industry endorsed assessment procedures with the outcome being validated by an externally qualified assessor who is currently competent against the assessor standards and complies with the Australian Quality Training Framework, Standards for Registered Training Organisations, Standard 7.3 (a) and (b).

Notwithstanding, the industry would expect, in relation to the new entrant pathway, that in all instances the Registered Training Organisation will retain the responsibility of managing the competency development training program and related plan, the ultimate attributing of competence against Competency standard units using qualified assessors, and the issuing of qualifications, and/or Statements of Attainment. It will also include any additional information that may be required for licensing requirements and specified by regulators or Industry.

The process should be undertaken in accordance with the recognition processes defined by relevant training authorities.

Assessor Competencies

The AQTF and Standards for NVR Registered Training Organisations 2012 specify mandatory competency requirements for assessors. For information see Element 1.4 from the AQTF 2010 Essential Standards for Registration, or Element 4.4 and 15.4 from the Standards for NVR Registered Training Organisations 2012 follows:

Training and assessment are conducted by trainers and assessors who:

- have the necessary training and assessment competencies as determined by the National Quality Council or its successors, and
- have the relevant vocational competencies at least to the level being delivered or assessed, and
- can demonstrate current industry skills directly relevant to the training/assessment being undertaken, and
- continue to develop their Vocational Education and Training (VET) knowledge and skills as well as their industry currency and trainer/assessor competence.

* See AQTF 2010 Users' Guide to the Essential Standards for Registration – Appendix 2,

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or the Standards for NVR Registered Training Organisations 2012

All assessors who are engaged in assessing against this Training Package must be engaged by an RTO or be acting under the registration of an RTO (for example, an assessor working in an enterprise, or a consultant that has a partnership arrangement with the RTO).

This Training Package provides a range of options for meeting these assessor requirements. Assessments can be undertaken in a variety of workplace and enterprise contexts by individual assessors, partnerships involving assessors and technical experts or teams of assessors.

The options below show how the requirement to use qualified assessors can be met.

Assessors, Technical Experts and Workplace Supervisors

Single Assessor — Single Arrangement

Where an individual assessor conducts the assessment the assessor is required to:

- hold formal recognition of competence in the relevant units in the Training Package for Training and Assessment
- be deemed competent and, where possible, hold formal recognition of competence in the specific Competency standard units in this Training Package, at least to the level being assessed.

In addition, it is recommended by the industry that the assessor can:

- demonstrate current knowledge of the Gas Industry, industry practices, and the job or role against which performance is being assessed
- demonstrate current knowledge and skill in assessing against this Training Package which contains the vocational standards for industry in a range of contexts
- demonstrate the necessary interpersonal and communication skills required in the assessment process
- continue to meet the requirements of the industry
- ensure assessment is consistent with the Australian Quality Training Framework Standards or Standards for NVR Registered Training Organisations 2012 for Registered Training Organisations or Standards for NVR Registered Training Organisations 2012
- promote confidence in the system and the assessment outcomes on the part of industry, employers, enterprises, unions, employees, trainees, assessors and trainers
- ensure assessment processes and outcomes are valid, reliable, fair and flexible

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- support RTOs in effectively carrying out their responsibilities
- participate in professional development
- have relevant work experience
- participate in professional/industry networks and assessor programs
- have recent planning and review of assessment activities
- participate in assessment validation processes
- have recent assessment and/or workplace training activities.

Partnership Arrangement

Option 1 — Working with a Technical Expert

An assessor works with a technical expert to conduct the assessment. The Assessor is required to hold formal recognition of competence in the relevant units in the Training Package for Training and Assessment.

In addition, it is recommended that the assessor is able to:

- demonstrate current knowledge and skill in assessing against this Training Package which contains the vocational standards for industry in a range of contexts;
- demonstrate capability to assess with a technical expert;
- demonstrate the interpersonal and communication skills required in the assessment process.

A technical expert is one that is required to be deemed currently competent and, where possible, hold formal recognition of competence in the specific Competency Standard Units from this Training Package which contains the vocational standards for industry, at least to the level being assessed.

In addition, it is recommended that the Technical Expert is able to:

- demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed;
- communicate and liaise with the assessor throughout the assessment process.

Option 2 — Working with a Workplace Supervisor

An assessor works with workplace supervisor in collecting evidence for valid assessment.

The assessor is required to:

- make the assessment decision
- demonstrate a capability to assess using a workplace supervisor as a valid and reliable source of evidence collaboration
- communicate and liaise, where appropriate, with the workplace supervisor throughout the assessment process.

A workplace supervisor is required to be deemed currently competent and, where possible, is to hold formal recognition of competence in the specific competency standard units from this Training Package at least to the level being assessed.

In addition, it is recommended that the workplace supervisor is able to:

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- demonstrate current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- communicate and liaise, where appropriate, with the assessor throughout the assessment process
- use agreed practices to gather and record evidence for the assessor to use in making a valid judgement on competency.

Assessment Team/Panel

A team works together to conduct the assessment.

Members of an assessment team or panel that comprises assessment and industry experience and expertise works together in the collection of evidence and in making judgements about competency. The members of the team must include at least one person who:

- holds formal recognition of competence in training and assessment in the relevant units in the Training and Assessment Training Package
- is deemed competent and, where possible, holds formal recognition of competence in the specific Competency standard units from this Training Package at least to the level being assessed, and where not technically competent uses team/panel members with current technical competence in requisite units.

It is recommended that members of the team/panel involved in the assessment are able to demonstrate:

- current knowledge of the industry, industry practices, and the job or role against which performance is being assessed
- current knowledge and skill in assessing against this Training Package in a range of contexts
- the interpersonal and communication skills required in the assessment process and liaise with other team/panel members throughout the assessment process.

Assessments against the competencies in the Training Package will be carried out in accordance with these endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment and where the required technical and assessment competencies may not be held by any one person.

1.3.07 Assessment Tools

3.7 Designing Assessment Tools

This section provides an overview of assessment tools and their suggested use in the industry.

Use of Assessment Tools

Assessment resources provide a means of collecting the evidence that assessors use in making judgements about whether candidates have achieved competency.

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There is no set format or process for the design, production or development of assessment tools. Assessors may use prepared assessment materials, such as those specifically developed to support this Training Package — Training and Assessment Advice Manual for the Gas Industry Training Package UEG11, available from E-Oz Energy Skills Australia (www.e-oz.com.au). Alternatively they may develop their own assessment materials to meet the needs of their clients by utilising pre-developed training and assessment instruments included in Section 3.8 Gas Industry Guidelines for designing assessment materials.

Using Prepared Assessment Tools

If using prepared assessment materials, assessors should ensure that the materials are benchmarked or mapped against the current version of the relevant competency standard unit(s) and any industry-preferred model and supported by the industry. This can be done by checking that the materials are listed on www.training.gov.au or E-Oz Energy Skills Australia (www.e-oz.com.au). Specific materials on the list have been noted by the National Skills Standards Council (NSSC) as meeting their quality criteria for Training Packages.

Developing Assessment Tools

When developing their own assessment materials, assessors must ensure that the tools:

- are benchmarked against the selected competency standard unit(s)
- are benchmarked against the industry-preferred competency assessment model
- are reviewed as part of the validation of assessment strategies as required under AQTF Standard 9.2 i of the Standards for Registered Training Organisations or the Standards for NVR Registered Training Organisations 2012
- meet the assessment requirements expressed in the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012.
- A key reference for assessors developing assessment tools is TAE10 Training and Education Training Package.

Language, Literacy and Numeracy

The design of assessment tools must reflect the language, literacy and numeracy competencies required for the performance of a task in the workplace and not exceed these expectations. Guidance on the appropriate level of LL&N skills to best equip the candidate for successful achievement is provided within each unit of competency at section 2.2) Literacy and numeracy skills.

Conducting Assessment

This section details the mandatory assessment requirements and provides information on equity in assessment including reasonable adjustment.

Mandatory Assessment Requirements

Assessments must meet the criteria set out in the AQTF 2010 Essential Standards for Initial and Continuing Registration or the Standards for NVR Registered Training Organisations 2012. For information, the mandatory assessment requirements from Standard 1 from the AQTF 2010 Essential Standards for Initial and Continuing Registration or Element 4.5 and 15.5 of the Standards for NVR Registered Training Organisations 2012 are as follows:

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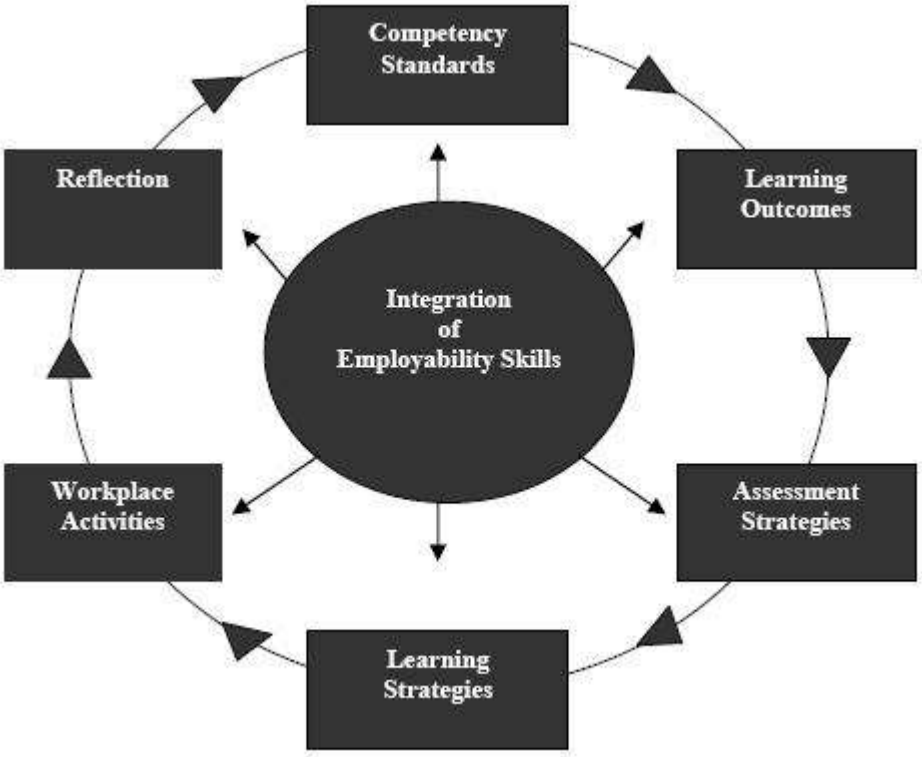
Assessment, including Recognition of Prior Learning (RPL):

- meets the requirements of the relevant Training Package or accredited course
- is conducted in accordance with the principles of assessment and the rules of evidence
- meets workplace and, where relevant, regulatory requirements
- is systematically validated.

Assessment of Employability Skills

Employability Skills are integral to workplace competency. As such, they must be considered in the design, customisation, delivery and assessment of vocational education and training programs in an integrated and holistic way, as represented diagrammatically below.



Employability Skills are embedded and explicit within each unit of competency. Training providers must use Employability Skills information in order to design valid and reliable training and assessment strategies. This analysis could include:

- reviewing units of competency to locate relevant Employability Skills and determine how they are applied within the unit
- analysing the Employability Skills Summary for the qualification in which the unit or units are packaged to help clarify relevant industry and workplace contexts and the application of Employability Skills at that qualification outcome
- designing training and assessment to address Employability Skills requirements.

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The National Quality Council has endorsed a model for assessing and reporting Employability Skills, which contains further suggestions about good practice strategies in teaching, assessing, learning and reporting Employability Skills. The model is available from http://www.training.com.au/

The endorsed approach includes learners downloading qualification specific Employability Skills Summaries for Training Package qualifications from an online repository at http://employabilityskills.training.com.au

For more information on Employability Skills in this UEG11 Gas Training Package, Version 2, go to the E-Oz Energy Skills Australia website at www.e-oz.com.au

Access and Equity

An individual's access to the assessment process should not be adversely affected by restrictions placed on the location or context of assessment beyond the requirements specified in this Training Package: training and assessment must be bias free.

Under the rules for their development, Training Packages must reflect and cater for the increasing diversity of Australia's VET clients and Australia's current and future workforce. The flexibilities offered by Training Packages should enhance opportunities and potential outcomes for all people so that we can all benefit from a wider national skills base and a shared contribution to Australia's economic development and social and cultural life.

Reasonable adjustments

It is important that education providers take meaningful, transparent and reasonable steps to consult, consider and implement reasonable adjustments for students with disability.

Under the Disability Standards for Education 2005, education providers must make reasonable adjustments for people with disability to the maximum extent that those adjustments do not cause that provider unjustifiable hardship. While 'reasonable adjustment' and 'unjustifiable hardship' are different concepts and involve different considerations, they both seek to strike a balance between the interests of education providers and the interests of students with and without disability.

An adjustment is any measure or action that a student requires because of their disability, and which has the effect of assisting the student to access and participate in education and training on the same basis as students without a disability. An adjustment is reasonable if it achieves this purpose while taking into account factors such as the nature of the student's disability, the views of the student, the potential effect of the adjustment on the student and others who might be affected, and the costs and benefits of making the adjustment.

An education provider is also entitled to maintain the academic integrity of a course or program and to consider the requirements or components that are inherent or essential to its nature when assessing whether an adjustment is reasonable. There may be more than one adjustment that is reasonable in a given set of circumstances; education providers are required to make adjustments that are reasonable and that do not cause them unjustifiable hardship.

The Training Package Guidelines provides more information on reasonable adjustment, including examples of adjustments. Go to:

http://www.deewr.gov.au/tpdh/Pages/home.aspx

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1.3.08 Guidelines for Designing Assessment Materials

3.8 Guidelines for Designing Assessment Materials

Assessment materials are developed, designed and implemented by appropriately authorised and competent assessors. Materials may range from relatively straight forward questions/answers and task tests to quite elaborate simulations for assessing concepts and values. Assessment materials need to facilitate assessment by:

- detailing the personnel and material preparations required to support the **assessment** process
- establishing and/or confirming the circumstances under which the assessment is to take place
- detailing the evidence to be collected and the method(s) to be used to do this
- providing for the systematic review/analysis of the evidence and for the making of logical and supportable judgments
- providing the means for the recording of the process and the judgments as required and in accordance with any regulatory and/or industry-preferred arrangement
- providing a basis for post-assessment
- providing **counselling** and guidance for the candidate
- identifying specialist technical advice related to such things as OHS, LLN, **environmental** and equity matters.

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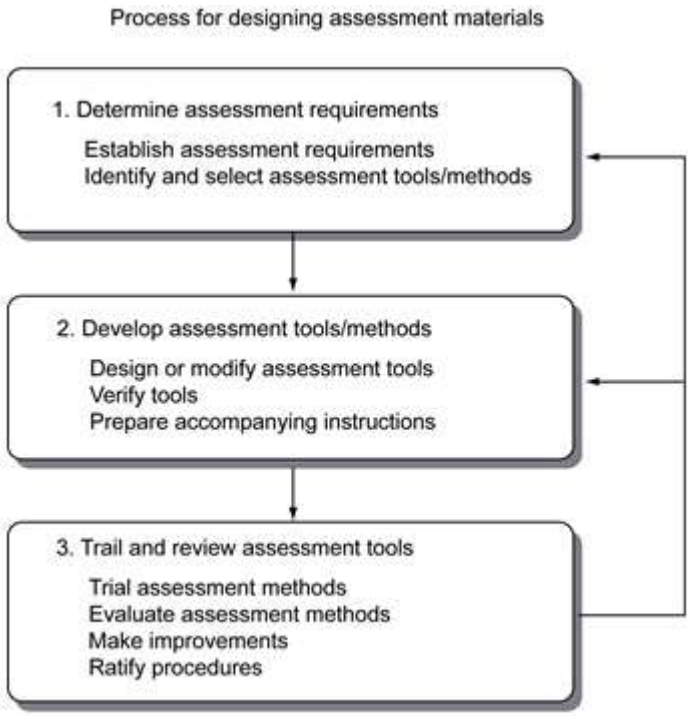
Assessment Material Design Process



a) Determine assessment requirements

Identify and select assessment tools/methods The assessor will be required to identify and select the assessment methods consistent with Gas Industry assessment guidelines and procedures.

In developing tools and methods the assessor will need to determine the range of methods appropriate to the assessment context and the characteristics of the person being assessed. The assessor may use the following questions when designing the assessment method:

Is the data **gathering** process sufficient, timely, valid and reliable to ensure the decision about competence relates to the overall requirements of the unit?

Do you always need to assess real work?

How is the **critical** evidence specified?

How many **assessment** tasks are required to collect the critical evidence of competency?

Which **assessment** tasks will provide broad coverage of the Range Statement?

Are there any skills that the candidate should have or can develop before they are assessed for the unit?

b) Develop assessment tools/methods

Design or modify assessment tools The assessor will be required to design or modify existing assessment tools so that their format, language, literacy and numeracy requirements are appropriate to the characteristics of the assessment context and the person being assessed.

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Verify tools The assessor will need to verify the assessment tools, which maintain validity but are easy to administer and allow sufficient flexibility to meet the range of possible assessment contexts.

Prepare accompanying instructions The assessment system/process must be comprehensively and clearly documented so that the stages of assessment and their constituent parts may be observed and evaluated. The assessment materials must relate directly to the competency standard unit or group of units making up a qualification and address the totality of competency in a realistic, holistic and effective way.

c) Trial and review assessment tools

Trial and validate assessment tools

The assessor will be required to trial and validate the assessment methods with a representative group of people similar to those who will ultimately be assessed. Once trials are conducted the assessor will need to seek responses from all parties and compile and analyse these responses.

Evaluate assessment methods The assessor will evaluate the assessment methods and tools for clarity, reliability, validity, fairness and cost-effectiveness.

Make improvements The assessor will modify the assessment tools based on the responses to the trials.

Ratify procedures The assessor ratifies, with relevant people in the Gas Industry, procedures of the evidence requirements, assessment methods and assessment tools and the processes used in developing them.

Assessment Material Requirements

Essential requirements to be met by assessment materials include the following:

Assessment of Competency Standard Units — assessment must directly address the competency standard unit or group of units making up a qualification or skills cluster and, within this, satisfy the *critical aspects of evidence* including the related performance criteria, Range Statement and essential knowledge and associated skills.

Assessment of practical applications — summative assessment of practical applications should, whenever possible and practicable, be conducted in a real work environment or in a realistically simulated work environment. Removal of the summative assessment from the real work environment should occur only to the extent necessitated by circumstances such as safety, noise, excessive cost and disruption to equipment operation, and access to the required work.

Learning outcomes or other curricula documents — are not to be the primary focus of summative assessment unless their direct relationship to the competency standard unit(s) is formally approved by industry and recorded.

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Assessment of essential theory — summative assessment of the theory (essential knowledge and associated skills) underpinning competent performance is to be sufficiently rigorous and searching to ensure that individuals comprehend why they are doing something, the options they may use to achieve the required goal, and the fact that they can recall and/or locate and, interpret and transfer this information in varying contexts if it is needed at some other time. Typically, the specific level of depth and breadth the individual is required achieve is contained in industry and RTO sponsored essential knowledge and associated skills learning specifications that are aligned to respective competency standard units.

Assessment of learners with low language/literacy/numeracy skills/under-represented groups — assessment systems need to be capable of being applied in cases of low language/literacy/numeracy skills/under-represented groups. Reasonable adjustment strategies to address assessment of those with low language, literacy and numeracy skills and under-represented groups should be included in any Assessment Materials used by Registered Training Organisations, and be consistent with the quality assurance requirements of State Training Authorities for registration.

Range of Assessment Methods and their Uses

Types of Assessment

A variety of assessment types apply and can be used individually or in combination. These are:

Direct observation Observe the learner carrying out their usual practical tasks in the workplace. This may be accompanied by questions. Direct observation is probably the easiest and most convenient method of assessment.

Third party reports Information provided by the immediate supervisory or other appropriate persons. An external assessor may not have the opportunity to make multiple observations of a candidate over a period of time, unlike an internal (in-house) assessor. The external assessor may obtain third party reports to supplement an assessment.

Demonstration and questioning The candidate gives a demonstration of a practical task. If there is no opportunity to observe this competency in the standard work environment, the assessor may ask the candidate to provide a practical demonstration. The assessor can see both the process and the finished product.

Pen and paper tests and essays These are used to measure the extent of knowledge or may test problem-solving capability. They can complement practical demonstration.

Oral tests These can be an adjunct to practical demonstration.

Projects — these tend to be unsupervised. The assessor uses the final product as a basis for judgement.

Simulation This may involve an off-site practical test. The actual tasks and conditions are similar to real life situations and are in accord with prevailing industry policy enunciated by the Industry Skills Council for the industry. A Simulation Policy has been developed and can be obtained at www.e-oz.com.

Portfolios These are used for assessing skills achieved in the past. They can include work samples.

Profiling Information gathered over time from a structured profiled data entry card and resultant report.

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Assessment Methods

Assessment methods must be appropriate to the situation. Learners can be encouraged to use these methods for self-assessment. Combinations of these methods will be required for most situations (eg. observations and oral questioning). The recommended assessment methods for collecting the various kinds of evidence required to determine the candidate's competency are:

A — Oral questioning

B — Structured observation of work

C — Indirect supporting evidence (supervisor's reports).

Not all the methods need to be used. For example, during the assessment period the assessor may find that they don't need all three methods to collect sufficient evidence. The assessor may also plan to use other, equally valid, combinations of assessment methods. It is recommended that assessors use open questions in conjunction with direct observations to assess the candidate's ability to:

- apply relevant knowledge to the particular task
- perform the required tasks safely and efficiently
- handle unforeseen contingencies and circumstances
- recognise and solve problems associated with the whole job (which may not necessarily occur during the assessment).

It is recommended that supervisor's reports or verified calculations are used to confirm that workplace job activities have been completed on time and meet the required specifications. This is particularly relevant when the assessor is not for the total duration of the workplace job activity and/or the learner/candidate works as part of a team.

More information is contained in the following section 3.10 — Guide to Assessment Methods and Items.

1.3.09 Sample assessment instruments to support training and assessment material design

3.9 Sample assessment instruments to support training and assessment material design

Information related to assessment material design, training and assessment activities, and sample assessment materials against competency standard units in this Training Package is included in Appendix B — Sample assessment instruments to support training and assessment material design.

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1.3.10 Guide to Assessment Methods and Items

3.10 Guide to Assessment Methods and Items

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity and electrical equipment carries risk in deeming a person competent. Hence, sources of evidence need to be ‘rich’ in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its ‘richness’. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. These considerations can be summarised as follows:

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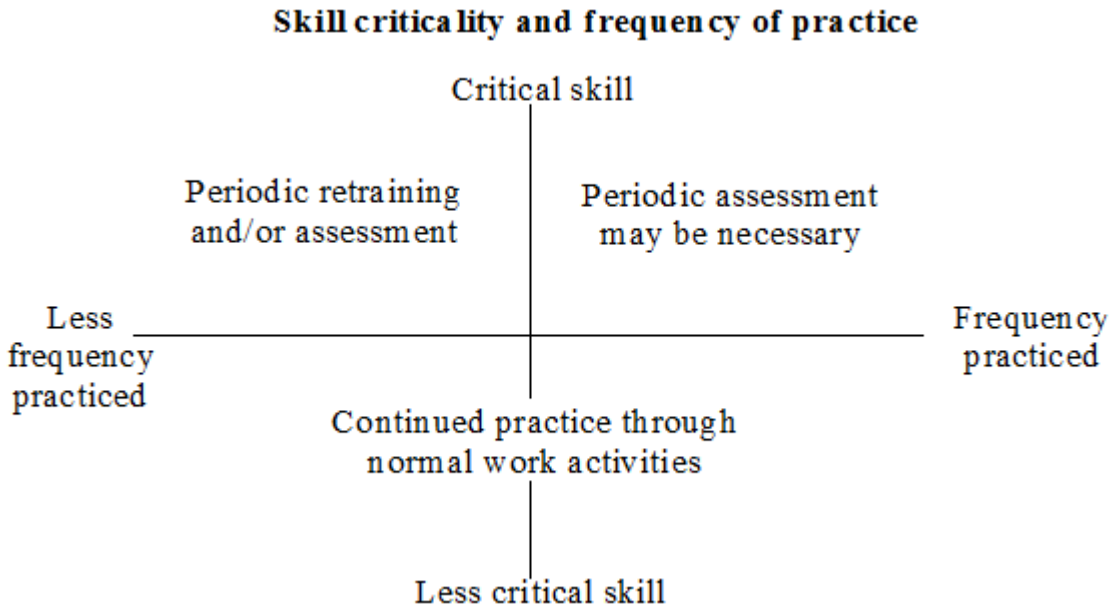

Irrespective of these considerations the assessment methods and instruments used should satisfy the conditions associated with sufficiency, currency, authenticity, validity, reliability, and be holistic in nature.

The following *Guide to Assessment Methods and Items* provides a summary of assessment methods in common use and the situations in which they may apply.

Guide to Assessment Methods and Items

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Assessment method	Appropriate instruments	Valid purposes or use	Conditions and numbers	Time constraints	Repeat assessments
Written objective tests	True/false Multiple choice Matching Completion	Confirming essential factual knowledge, principles Assessing deduction, transfer of knowledge Complementing other methods	Controlled classroom High level supervision Large numbers	Moderate	Many
Written responses, short and extended answers	Calculations Definitions, explanations Essays	Assessing use of information Application of knowledge General ideas and solutions Research, organisation and expression of concepts or ideas	Test condition as above or Minimal supervision, and assistance	Moderate	Many
Oral test/ technical interview	Set question Scenarios	Assessing depth and breadth of knowledge Application of knowledge Relative to experience	Interview condition One to one	Moderate	Many
On job or workplace assessment	Observation, checklist Product assessment Questioning to complement observations	Identifying mastery or competence of practical task, technical skill or interpersonal skill in real or simulated setting Identifying gaps in education and training	Normal working conditions Moderate level supervision One to one Avoid expensive or	High	Nil to many depending on assessment of product or process

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			hazardous situations		
Practical/ Exercises	Stimulated work exercises Structured practical exercises Fault finding exercises	Checking mastery or competence of a practical task, technical skill, or subset of performance in a simulated work setting	Controlled laboratory or field setting High level supervision 10 to 15	Low	Several
Practical projects	Research task or investigation Product or process development Individual learning contract	Assessing integration and application of a number of work related skills to solve a given problem Assessing individual approaches, innovation, creativity Assessing interaction with others	Access to laboratory, workshop or workplace Little supervision 10 to 15	Low	Several
Assignments	Resource life Case studied Poster presentation Reports of video or speaker presentations Reports of laboratory/field work, excursions Individual learning contracts Writing simple manuals	Confirming competence to research, analyse and synthesise information Assessment of application of knowledge, skills and attitudes where practical testing is not feasible Assessment of communication skills	Moderate of level control Non-test conditions Little supervision 10 to 15	Low	Several

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	or procedures				
Personal appraisal	Checklists or criteria which enable peer or self assessment	Establishing readiness for summative assessments Assessment of an individual's performance within a team effort	Non-test conditions Little supervision Small numbers	Low	Many
Verbal assessment	Oral exposition or lecture Seminar, presentation and group discussion Oral/aural tests Interviews	Confirming understanding of principles underpinning performance Supplement other assessment methods Verification of learner's submitted work.	Moderate level of control High level of supervision One to one	Low	Several
Profiling	Structure manual or computer-based log.	Tracks competency development against the industry standard profile specified by CSUs. Identifies when remedial action is required during development period.	[3]Real work conditions under workplace supervision. Off-job assessment events Any number	Low / Medium	On going

[2]A valid profile is based on periodic collection of relevant data over the duration of a competency development training program.

[3]A complete profile is constructed from all required evidence of competency, however where a profile of only workplace performance is used it must be supplemented with other methods such as those outlined in this table.

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1.3.11 Guidelines for Conducting Assessments

3.11 Guidelines for Conducting Assessments

The following guidelines describe the industry-preferred process for conducting assessments against the competency standard unit(s) in this Training Package. This process applies to all assessments conducted for the purposes of national recognition in both institutional and workplace contexts.

Assessment within the Gas Industry is to be carried out by a qualified assessor trained in the conduct of assessment:

- Assessment should be planned, arranged and organised well in advance of the event/process.
- The candidate should be involved in the planning and preparation so that their readiness and availability is assured, and their advice on evidence collection opportunities may be considered.
- The environment within which assessment is to occur is acceptable to the parties and conducive to the assessment process.
- The assessor's actions throughout the process are firm, fair, friendly and unambiguous.
- Specific rulings on safety breaches are explained up-front and acted on in accordance with the assessment materials.
- The assessment process should contain no surprises for any party.
- Feedback is provided as required throughout the assessment process.
- Post assessment activities including recording, reporting, counselling etc. are finalised promptly.

Candidates will invariably be accepting of the outcomes of an assessment process in which:

- they consider they were treated fairly, consistently and with dignity
- they were given the full opportunity to demonstrate their capabilities
- the reasons for the assessment decisions were appropriate, logical and constructively explained
- the assessment judgements are conveyed in a sensitive and constructive manner.

The following provides an overview for assessment within the Gas Industry. It outlines the process involved in conducting assessment in both the institutional and workplace context, and consists of three major components that each assessor will need to do:

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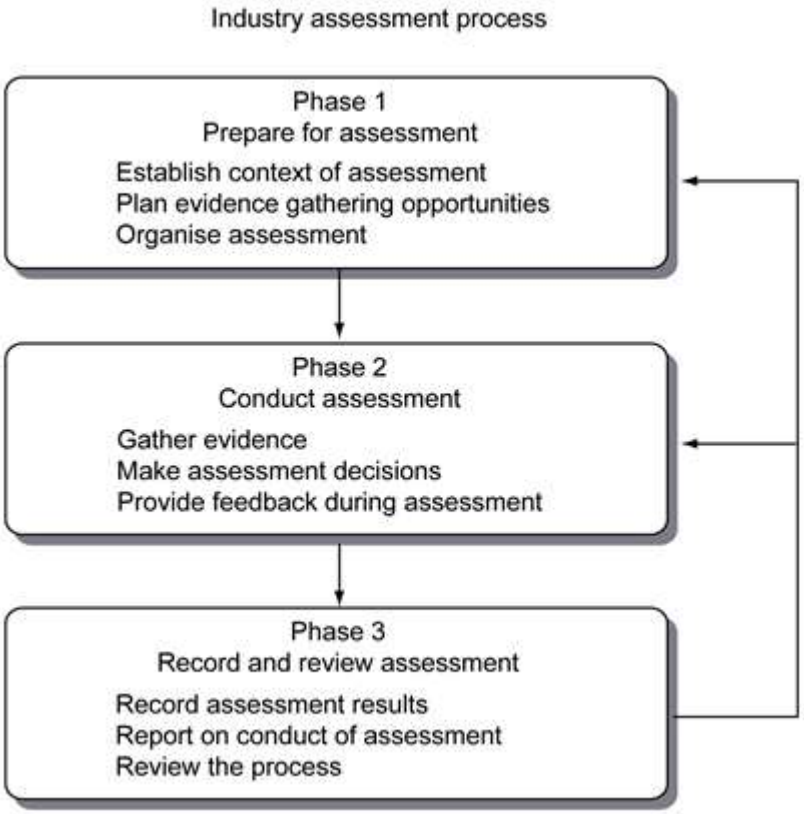
Prepare for Assessment



The assessor:

- establishes the context and purpose of the assessment
- identifies the relevant competency standard unit(s), assessment guidelines and qualification framework in this Training Package which contains the vocational standards for industry including the relevant performance measures applying to assessment
- identifies any NSSC noted support materials that have been developed to facilitate the assessment process
- analyses the competency standards and identifies the evidence requirements;
- identifies potential evidence collection methods
- identifies issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.

Prepare the candidate

The assessor meets with the candidate to:

- discuss and confirm the purpose of assessment with the candidate and where appropriate, the employer
- explain the context and purpose of the assessment and the assessment process
- explain the competency standards to be assessed and the evidence to be collected and ensure the candidate has access to the relevant competency standards and other relevant information
- explain and obtain agreement to the assessment procedure

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- advise on self-assessment, including processes and criteria
- outline the assessment procedure, the preparation the candidate should undertake, and answer any questions
- assess the needs of the candidate and, where applicable, negotiate reasonable adjustment for assessing people with disabilities without compromising the integrity of the competencies
- seek feedback regarding the candidate's understanding of the competency standard unit(s), evidence requirements and assessment process
- determine if the candidate is ready for assessment and, in consultation with the candidate, decide on the time and place of the assessment
- develop an assessment plan
- discuss the Gas Industry and enterprise assessment policy with the candidate (ie how the competencies to be assessed will fit in with the Industry training policy and preferred framework or enterprise arrangements for training and assessment. The assessor should also understand what the candidate has done to acquire the knowledge and skills).

Plan and prepare evidence-gathering process

Practical assessment should preferably be conducted on site. However, if on-site practical assessment is not possible then off-site assessment at a mutually agreeable site could be appropriate. It can be part of the current work (i.e. observation of current tasks) or a demonstration, ie a simulated task.

The assessor must:

- establish a plan for gathering sufficient quality evidence about the candidate's performance in order to make the assessment decision (and involve industry representatives in the development of plans for the validation of assessment)
- identify opportunities to gather evidence of competence which occurs as part of the workplace activities
- ensure the planned approach to gathering evidence will provide sufficient, reliable, valid and fair evidence of competence
- source or develop assessment materials to assist in the evidence gathering process
- choose the techniques that will be used to assess the candidate's knowledge and skill
- organise equipment or resources required to support the evidence gathering process
- check the assessment environment permits fair, valid and reliable assessment and that it is safe and accessible
- inform other relevant people of assessment plans, coordinate and brief other personnel involved in the evidence gathering process
- identify the need to gather additional evidence which may not occur as part of workplace activities
- consider issues related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment.

Collect the evidence and make assessment decisions

The assessor must:

- establish and oversee the evidence gathering process to ensure its validity, reliability, fairness, flexibility and consistency

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- collect appropriate evidence and assess this against the Elements, Performance Criteria, Range Statement and Evidence Guide in the relevant competency standard unit(s)
- evaluate evidence in terms of the four dimensions of competency — task skills, task management skills, contingency management skills, and job/role environment skills
- incorporate allowable adjustments to the assessment procedure without compromising the integrity of the competencies
- evaluate the evidence in terms of validity, consistency, currency, equity, authenticity and sufficiency
- gathers evidence related to techniques, OHS, language and literacy, cultural diversity, under-represented groups, key competencies and skills enabling employment
- consult and work with other staff, assessment panel members or technical experts involved in the assessment process
- document the evidence gathered in accordance with the assessment procedure and record details of evidence collected
- make a judgement about the candidate's competency based on the evidence and the relevant competency standard unit(s) and the criteria specified in the assessment procedure.

Provide feedback on the assessment

The assessor must provide advice to the candidate about the outcomes of the assessment process. This includes providing the candidate with:

- clear and constructive feedback on the assessment decision
- information on ways of overcoming any identified gaps in competency revealed by the assessment
- the opportunity to discuss the assessment process and outcome
- information on reassessment and the appeals process.

Record and report results

The assessor must:

- record the assessment outcome according to the policies and procedures of the RTO
- maintain records of the assessment procedure, evidence collected and the outcome according to the policies and procedures of the RTO
- maintain the confidentiality of the assessment outcome
- organise the issuing of qualifications and/or Statements of Attainment according to the policies and procedures of the RTO.

Review assessment process

On completion of the assessment process, the assessor must:

- review the assessment process
- report on the positive and negative features of the assessment to those responsible for the assessment procedures
- if necessary, suggest to appropriate personnel in the RTO ways of improving the assessment procedures.

Participate in the reassessment and appeals process

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The assessor must:

- provide feedback and counsel the candidate, if required, regarding the assessment outcome or process, including guidance on further options
- provide the candidate with information on the reassessment and appeals process
- report any disputed assessment decision to the appropriate personnel in the RTO
- participate in the reassessment or appeal according to the policies and procedures of the RTO.

Review and maintenance of the assessment system

The developer and custodian, E-Oz Energy Skills Australia of this Training Package which contains the vocational standards for industry is responsible for the ongoing monitoring and review of these Assessment Guidelines. This process will be incorporated in the general review and maintenance of this Training Package.

1.3.12 Maintenance of Assessment Guidelines

3.12 Maintenance of Assessment Guidelines

The Gas Industry Assessment Guidelines were developed by, and are therefore owned by, the industry.

The Assessment Guidelines must be maintained so that it reflects the ongoing needs of the Industry sector and responds in a timely manner to changed technologies, work organisation, skills development and related circumstances.

Responsibility for maintaining of the Assessment Guidelines is shared by the parties who constitute the sector:

- Assessment Guidelines maintenance will be coordinated and managed by E-Oz Energy Skills Australia in its role as a declared Industry Skills Council for ElectroComms and EnergyUtilities, and
- Suggestions and proposals for changes from all parties are welcome. These should be documented and submitted to E-Oz Energy Skills Australia the DOI declared Industry Skills Council for the ElectroComms and EnergyUtilities Industry.
-

1.3.13 General Resources

3.13 Further Sources of Information

Contacts

ElectroComms and EnergyUtilities Industry Skills Council Ltd

Trading as: E-Oz Energy Skills Australia

48 Mort St

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Braddon ACT 2612

Telephone: (02) 6154 5180 Fax: (02) 6241 2177

Email: office@e-oz.com.au

Website: www.e-oz.com.au

For information on the Training & Education TAE10 Training Package contact:

Innovation & Business Skills Australia

Level 11, 176 Wellington Parade,

East Melbourne, VIC, 3002

Telephone: (03) 9815 7000

Facsimile: (03) 9815 7001

Email: virtual@ibsa.org.au

Web: www.ibsa.org.au

General Resources

AQF Implementation Handbook, Fourth Edition 2007. Australian Qualifications Framework Advisory Board, 2002 <www.aqf.edu.au>

Australian Quality Training Framework (AQTF) and AQTF 2010 Users' Guide to the Essential Standards for Registration – http://www.training.com.au/pages/menuitem5cbe14d51b49dd34b225261017a62dbc.aspx

Standards for NVR Registered Training Organisations 2012 - http://www.comlaw.gov.au/Details/F2013L00167/Download

For general information and resources go to http://www.training.com.au/

training.gov.au is an electronic database providing comprehensive information about RTOs, Training Packages and accredited courses - www.training.gov.au

The Standards for Training Packages site provides National Skills Standards Council policy for the development of Training Packages. The site also provides guidance material for the application of that policy, and other useful information and links. http://www.nssc.natese.gov.au/training_packages/standards_and_policies

Assessment Resources

Registered training organisations (RTOs) are at the forefront of vocational education and training (VET) in Australia. They translate the needs of industry into relevant, quality, client-focussed training and assessment.

RTOs should strive for innovation in VET teaching and learning practices and develop highly flexible approaches to assessment which take cognisance of specific needs of learners, in order to improve delivery and outcomes of training.

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Training Package Assessment Guides

A range of resources to assist RTOs in developing Training Package assessment materials (originally developed by DEST with funding from the Department of Education, Training and Youth Affairs) and made up of 10 separate titles, as described at the publications page of <www.dest.gov.au>.

Go to: http://www.resourcegenerator.gov.au/loadpage.asp?TPAG.htm

Printed and CD ROM versions of the Guides can be purchased from Technical and Vocational Education and Training Australia Limited (TVET). The resource includes the following guides:

a. Training Package Assessment Materials Kit
b. Assessing Competencies in Higher Qualifications
c. Recognition Resource
d. Kit to Support Assessor Training
e. Candidate's Kit: Guide to Assessment in Australian Apprenticeships
f. Assessment Approaches for Small Workplaces
g. Assessment Using Partnership Arrangements
h. Strategies for ensuring Consistency in Assessment
i. Networking for Assessors
j. Quality Assurance Guide for Assessment

An additional guide 'Delivery and Assessment Strategies' has been developed to complement these resources.

Assessment Tool Design and Conducting Assessment

VETASSESS and Western Australian Department of Training and Employment, 2000, Designing Tests — Guidelines for designing knowledge based tests for Training Packages.

Vocational Education and Assessment Centre 1997, Designing Workplace Assessment Tools, A self-directed learning program, NSW TAFE.

Manufacturing Learning Australia, 2000, Assessment solutions, Australian Training products, Melbourne.

Rumsey, David 1994, Assessment practical guide, Australian Government Publishing Service, Canberra.

Assessor Training

Australian Committee on Training Curriculum (ACTRAC), 1994, Assessor training program — learning materials, Australian Training products, Melbourne.

Australian National Training Authority, A Guide for Professional Development, ANTA, Brisbane.

Australian National Training Authority, Facilitator Packs for Certificate IV in Training and Assessment.

Australian National Training Authority, Facilitator's Pack for Train Small Groups and Assessment.

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Australian Training Products Ltd, Training and Assessment, Training Package — Toolbox.

Green, M., Moritz, R., Moyle, K. and Vale, K., 1997, Key competencies professional development Package, Department for Education and Children's Services, South Australia.

Victorian TAFE Association, 2000, The professional development CD: A learning tool, VTA, Melbourne.

Conducting assessments

Bloch, B. and Thomson, P., 1994, Working Towards Best Practice in Assessment: A case study approach to some issues concerning competency-based assessment in the vocational education and training sector, NCVER, Adelaide.

Docking, R., 1991, An A-Z of Assessment Myths and Assessment in the Workplace, Competence assessment briefing series, No. 4, Employment Department, Perth, Western Australia.

Hawke, Geoff, 1996, Integrating Assessment of Learning Outcomes, Assessment Centre for Vocational Education, Sydney.

Hawke, Geoff, 1995, Work-based Learning: Advice From Literature, Assessment Centre for Vocational Education, Sydney.

National Assessors and Workplace Trainers Body, Putting it into practice [Training Package implementation Guide].

Parsloe, E., 1992, Coaching, Mentoring and Assessing: A practical guide to developing competence, Kogan Page, London.

Rumsey, David, 1993, 'Practical issues in Workplace Assessment' in National Assessment Research Forum: A forum for research into competency-based assessment. [VEETAC Competency Based Training Working party Assessment Steering Group], NSW TAFE Commission, Sydney.

Rumsey, David, 1994, Assessment Practical Guide, Australian Government Publishing Service, Canberra.

Evidence gathering methods

Australian National Training Authority, 1998, A new assessment tool, ANTA, Melbourne.

Gonczi, A. (ed.), 1992, Developing a competent workforce: adult learning strategies for vocational education and training, TAFE National Centre for Research and Development, Adelaide.

Kearney, Paul, 1992, Collaborative assessment techniques, Artemis, Tasmania.

National Assessors and Workplace Trainers Body, The evidence resource kit — containing language, literacy and numeracy video and CD ROM

National Assessors and Workplace Trainers Body, The evidence workbooks

Assessment System Design and Management

Office of Training and Further Education 1998, Demonstrating best practice in VET project – assessment systems and processes, OTFE Victoria.

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Toop, L., Gibb, J and Worsnop, P, Assessment system designs, Australian Government Publishing Service, Canberra.

Western Australia Department of Training and VETASSESS 1998, Kit for Skills Recognition Organisations, WADOT, Perth

National Centre for Vocational Education and Research, 1996, Integrating assessment: removing the on the job/off the job gap, Conference papers from 4-6 June, Western Australian Department of Training.

OTFE, 1998, Demonstrating best practice in VET project — assessment systems and processes, Victoria.

Wilson, P., 1993, Integrating workplace and training system assessments, Testing Times Conference, NCVER, Sydney.

Field, l., 1995, Managing organisational learning, Longman, Melbourne.

Recognition of Current Competency/ Recognition of Prior Learning

Recognition and Assessment Centre, 1994, New place: Same Skills. A guide for people from non-English speaking backgrounds, Office of Multicultural Affairs, DEET.

Recognition and Assessment Centre, A Flexible Approach to Recognition Practices: RPL as a Framework, Melbourne Recognition and Assessment Centre, PO Box 299, Somerton, Vic 3062, Telephone (03) 9254 3000.

1.3.14 Further Sources of Information

3.14 Further Sources of Information

This section provides a listing of useful contacts and resources to assist assessors in planning, designing, conducting and reviewing of assessments against this Training Package which contains the vocational standards for industry.

Contact	Details
National Industry Skills Council (ISC) for the ElectroComms and EnergyUtilities Industry	E-OZ Energy Skills Australia Ground floor, 68 Campbell Street SYDNEY NSW 2010 Telephone: 02 9280 2566 Fax: 02 9280 1600 Email: office@e-oz.com.au Website: www.e-oz.com.au
Western Australia ITC	**Electrical, Utilities, Electrotechnology & Public Administration Training Council**

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Contact	Details
	P O Box 597, BALCATTA WA 6021 Tel: 08 9240 2688, Fax: 08 9240 2930 E-mail: david@eupa.com.au
New South Wales ITAB	**NSW U&E ITAB** PO Box 615, DARLINGHURST NSW 1300 Tel: 02 9266 0001, Fax: 02 9261 5511 Email: nswueitab@ozemail.com.au
Victoria	**E-Oz Energy Skills Australia** 282 A Queens Parade, CLIFTON HILL, VIC 3068 Tel: 03 8352 4480 Email: office@e-oz.com.au

Contact	Details
Tasmania	**Energy Skills Australia (TEU ITB)** Unit 4/40-50 Innovation Drive DOWSING POINT TAS 7010 Tel: 03 6273 4445, Fax: 03 6273 4446 Email: teuitb@bigpond.com
South Australia	**Electrical, Electrotechnology, Energy & Water Skills Board** PO Box 671, KENT TOWN DC, SA 5071 Tel: (08) 8362 0764 Email: pc@ewsb.com.au

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Queensland	**Energy Skills Queensland** 70 Sylvan Road, TOOWONG, QLD 4066 Tel: 07 3271 8800 Fax: 07 3870 9291 Email: esqreception@energyskillsqld.com.au
Northern Territory	**Major Industries Training Advisory Council** GPO Box 1610, DARWIN NT 0801 Tel: 08 8981 0077, Fax: 08 8941 7470 Email: mitac@mitac.org.au

Access to Assessment Resources

Learning Resources	**E-Oz Energy Skills Australia** Ground floor, 68 Campbell Street, SYDNEY NSW 2010 Telephone: 02 9280 2566 Fax: 02 9280 1600 Email: office@e-oz.com.au Website: www.e-oz.com.au

1.3.15 Appendix A - New Apprenticeships Application

Appendix A — New Apprenticeships Application

New Apprenticeships are work related competency programs designed for entry-level contracted employment for new entrants to the industry. All qualifications in this Training Package could be open to use as New Apprenticeships and are governed by State/Territory Training Authority arrangements and their limitations.

New Apprenticeships offer both employers and employees:

- relevant training
- a range of support service arrangements.

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They typically involve paid work and structured training and are underpinned by a training contract, which is registered with the relevant State/Territory Training Authority. Completion of the competency development program leads to an AQF qualification.

In some instances, and subject to any relevant State/Territory Training Authority arrangements, existing non-apprenticed workers may be eligible for New Apprenticeship opportunities. Inquiries with the relevant State/Territory Training Authority should be made in this regard.

Like traditional apprenticeships, New Apprenticeships involve a commitment from:

- the employer to provide an environment for systematic training of the New Apprentice
- the New Apprentices to apply themselves to learning the requirements of their vocation
- a Registered Training Organisation (RTO)[1] to be responsible for providing the vocational education, training and assessment support services and the eventual issuing of a national qualification

[1]For more information on RTOs see DEST's 2005 Australian Quality Training Framework Standards for Registered Training Organisations, effective from 1 July 2005 publication.

In the Gas Industry, New Apprenticeships are available for all the qualifications outlined in this Training Package. New Apprentices seeking one of the national qualifications will be required to undergo a training program or course of study that involves learning and assessment activities. The related learning and assessment activities are documented and involve:

- the employer
- the employee
- the RTO[2]

[2]TAFE Institutions, Universities with TAFE sectors, Skills Centres and similar enterprises that can deliver vocational training are eligible to become RTOs.

On successful completion of the training program or course of study an RTO will issue the New Apprentice a national qualification.

Entry Requirement

Under New Apprenticeships, the employer is able to determine the relevant employment criteria for recruiting a new entrant into the Gas Industry. The choice, however, is usually dependent on enterprise employment practices and needs including requirements that may be imposed by relevant regulations and codes of practice.

There is, however, a common set of attributes/profiles that are industry preferred for the recruiting of New Apprentices. Some of the more common ones are:

- Any person aged 15 years or more can apply for a New Apprenticeship.
- Most employers require applicants who have completed at least Year 10 of a secondary school education program.
- Employers customarily prefer applicants who have successfully completed Years 11 or 12 of a secondary school education program or a post secondary education pre-employment course.

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Potential entrants should be aware that employers are looking for the following personal attributes:

- effective numeracy and literacy skills
- effective communications skills
- acceptable presentation
- punctuality
- a positive attitude
- interest in the industry as a career
- ability to work at heights or in confined spaces and around moving machinery
- ability to distinguish between colours.

For entry-level employment based contracted training New Apprenticeships the composition of the relevant qualification needs to be determined in accordance with the completion requirements detailed here and be subsequently agreed to between the respective parties.

General principles regarding the composition of qualifications are as follows:

- Competency Standard Units making up a qualification must be appropriate to the work being performed and be performed by the person seeking the qualification
- Competency Standard Units making up a qualification must be appropriate to the level and integrity of the qualification sought.

The terms and conditions for employment based entry-level contracted training require a training agreement or contract, which will be provided by State or Territory Training Authorities. Such an agreement is called an Apprenticeship/Traineeship Training Contract, which requires parties to the contract to select the appropriate qualification, competency standard units and to adopt an industry-preferred model or design a new training plan/program. Additionally, the responsibilities of the parties to the contract will be contained therein.

The employment of an Apprentice (sometimes also called a Trainee) by an Employer is subject to the relevant legislation and any applicable industrial instrument, order or determination made under that related Statutory Act. Appropriate information should be obtained from relevant authorities in this regard.

General principles governing the Competency Development Program

Consultation between the RTO, the employer and apprentice/trainee will have occurred and agreement reached on the Competency Development Program that will be delivered. Typically the RTO will adopt the industry-preferred approach where regulatory arrangements are in place or design an appropriate program in concert with the Industry. The apprentice/trainee would be expected to undertake the Competency Development Program in order to attain competence in the given qualification.

The Competency Development Program

A training contract provides a description of the process for undertaking training during the life of the program. This is developed in consultation with the RTOs.

The Training Program

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1. Expected duration of workplace program in hours

The training program will detail the anticipated duration in hours that the apprentice/trainee is expected to undertake in order to gain the necessary competencies. Information regarding the suggested nominal duration for respective AQF levels of New Apprenticeships is available from respective parties and includes E-Oz Energy Skills Australia. The training plan will outline the requisite on and off-the-job arrangements that apply to it.

2. On-the-job skills development program

In consultation with the apprentice/trainee and employer, the RTO would outline how it intends to monitor the on-the-job component, i.e. providing advice on how evidence is to be gathered when the apprentice/trainee is in the workplace. Apprentices/trainees are expected to assist RTOs in gathering and submitting workplace evidence as per the industry-preferred approach. This is particularly important where regulatory arrangements are in place. RTOs in turn monitor the performance of the apprentice/trainee and provide appropriate feedback to them and the employer.

3. Off-the-job skills development program

The training contract will detail, where applicable, the off-the-job (technical education) program the RTO will deliver in order to gain the necessary underpinning skills and knowledge. This is typically a program preferred by the industry undertaken by the apprentice/trainee. For example where modules or essential knowledge and associated skills strategies apply, the number, title and duration of each will generally be advised. This will also include the expected duration of the technical educational program in hours.

Typical duration — New Apprenticeships

In developing this Training Package due regard has been given, by industry, to a range of influencing factors associated with the typical period of employment and related training for individuals seeking a qualification, using the Australian Qualification Framework (AQF). In developing such, regard has also been given to the NSSC policy on providing industry advice on this matter.

As a general rule it is expected, that by employing the respective techniques and processes detailed in the preferred and adopted industry training model, those employed and undertaking training to satisfy the outcomes of competency standard units, as new entry-level recruits, will take a "nominal duration" of employment to complete. E-Oz Energy Skills Australia has developed industry advice in relation to the nominal duration of employment to assist users in their activities. Detailed information on typical new apprentice durations, at each of the AQF levels is available from E-Oz Energy Skills Australia. This detail can be obtained directly from E-Oz Energy Skills Australia or found on the E-Oz Energy Skills Australia website at www.e-oz.com.au. Additionally, more specific information may be contained within any related support materials that may exist as non-endorsed components of this Training Package and in particular the industry-preferred training plan applicable to each qualification.

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Nominal duration of training is generally defined by State, Territory and Federal Training Authorities policies and/or regulations. Typically these are set out in State/Territory Training Package Implementation Guides. Interested State/Territory parties should ensure they refer to the relevant Training Package Implementation Guide. These can be accessed via the respective State/Territory Training Authority websites.

1.3.16 Appendix B - Sample Assessment Instruments to Support Training and Assessment Material Design

Appendix B — Sample Assessment Instruments to Support Training and Assessment Material Design

This Appendix provides advisory and sample information for assessment material design against competency standard units in this Training Package. It is principally about training and assessment activities that can be used to benchmark quality outcomes.

It provides information about assessment material design and other resources available to support implementation of the Training Package. The information contained herein shows how these resources relate to the workplace and where they can be obtained. It includes sample assessment tools (sample instruments) developed to assist those involved in benchmarking their activities for gathering evidence about workplace activities and workplace experiences for training and assessment purposes.

Sample assessment instruments included were developed for documenting workplace experiences related to the requirements of this Training Package. The assessment strategies and instruments are primarily for use as advisory information for workplace assessors and/or their agents (workplace supervisors or technical experts) who may be employees of Registered Training Organisations or enterprises.

A number of terms used refer to aspects of implementing the Training Package. A Glossary of Terms (*see* Appendix B Enclosure C) is included to clarify the specific meaning of these terms.

This Appendix should be read in conjunction with the following publications:

- The respective volumes of this Training Package
- Training Package for Training and Assessment TAE10
- Training Acts and Regulations in the relevant Australian State or Territory
- Policies of the Registered Training Organisation (RTO) involved with training and assessment for the Industry.

Sources of Education, Training and Assessment Information

Introduction

This section shows how the Training Package and associated resources relate to recruitment, training, assessment and recognition activities which may be undertaken by Industry, enterprises and/or Registered Training Organisations.

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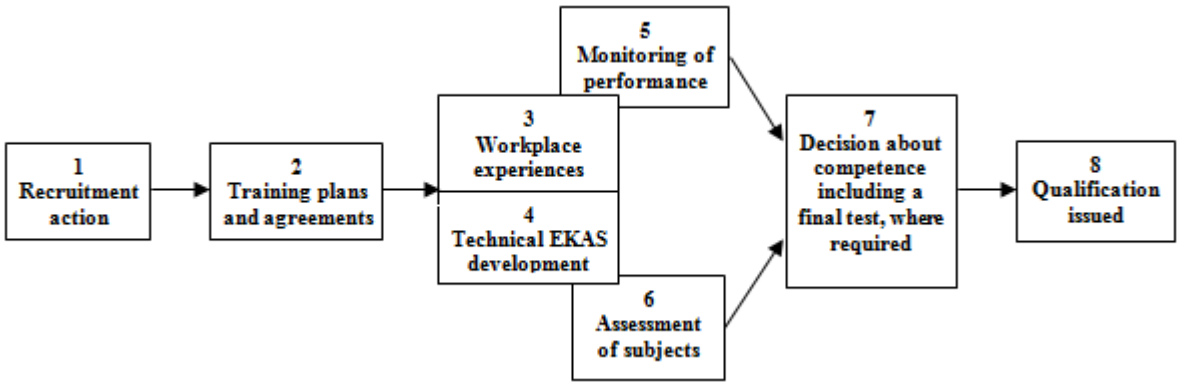
This section also introduces a competency development and/or recognition model based on combined on and off-the-job training, as well as a model that allows individuals to have previous learning and work experience recognised.

Combined on and off-the-job competency development model

The model shown below is a simplified version of the detailed contracted new entry level industry-preferred competency development model which combines on and off-the-job education, training and assessment leading to competent performance. A detailed copy of the model is available from E-Oz Energy Skills Australia website at www.e-oz.com. This model recognises that learning occurs as a result of:

- experience in recurring workplace events
- directed workplace learning activities
- structured off-the-job essential knowledge and associate skills technical educational activities.



Competency Development Model

This model is structured around a new entry level learner undertaking a full competency development program. The model can also accommodate the assessment of prior learning within the continuum of new entrant to competent. In this way it is consistent with the Assessment Pathways outlined in this Assessment Guidelines part of the Training Package.

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New Entrant Training and Assessment Materials and Resource Design and Development

In designing training and assessment materials and resources to support new entrant competency development consideration should be given to the preferred Industry approach to learner development. The concept model detailed on the next page explores how training and assessment materials and resources may be best developed for one or many competency standard units. RTOs using this approach ensure increased consistency in meeting the specifications in learning and work performance against the competency standard units, and in developing the learner in a cost effective way with little disruption to the day-to-day operation of the workplace. It also assures that a learner having completed aspects of, but not the full array of, competency standard unit(s), can be accorded information that is sufficient to warrant recognition for learning content (Essential Knowledge and Associated Skills) that is transferable to other environments in the Industry.

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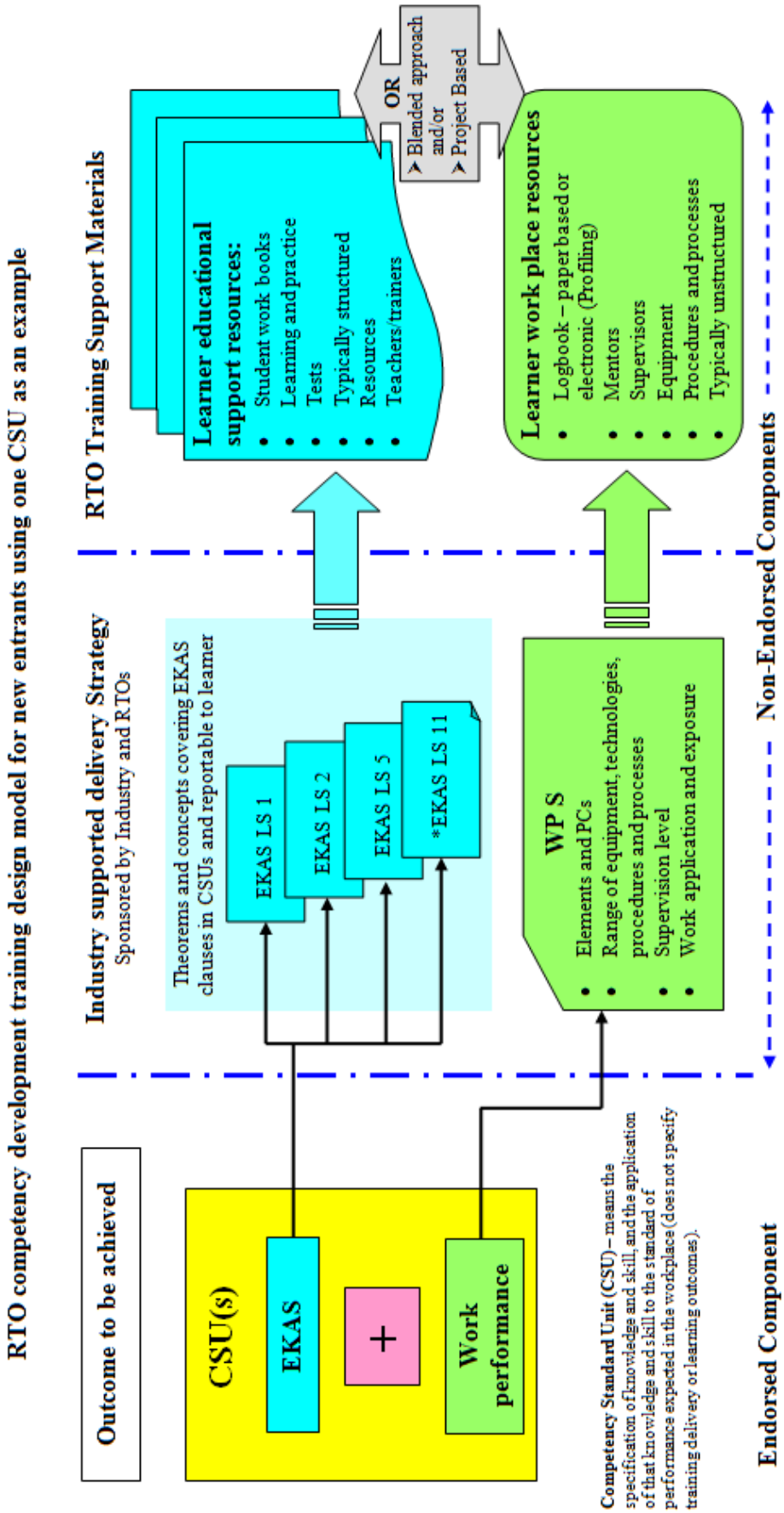

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EKAS LS – Essential Knowledge and Associated Skills Learning Specifications = where EKAS LS 1 — may cover many units, EKAS LS 2 — may cover a number of units, EKAS LS 5 — may cover several units, and/or EKAS LS 11 – may be unique to the unit (refer to Volume 1 Part 2 and Volume 2 Part 2 for more detail)

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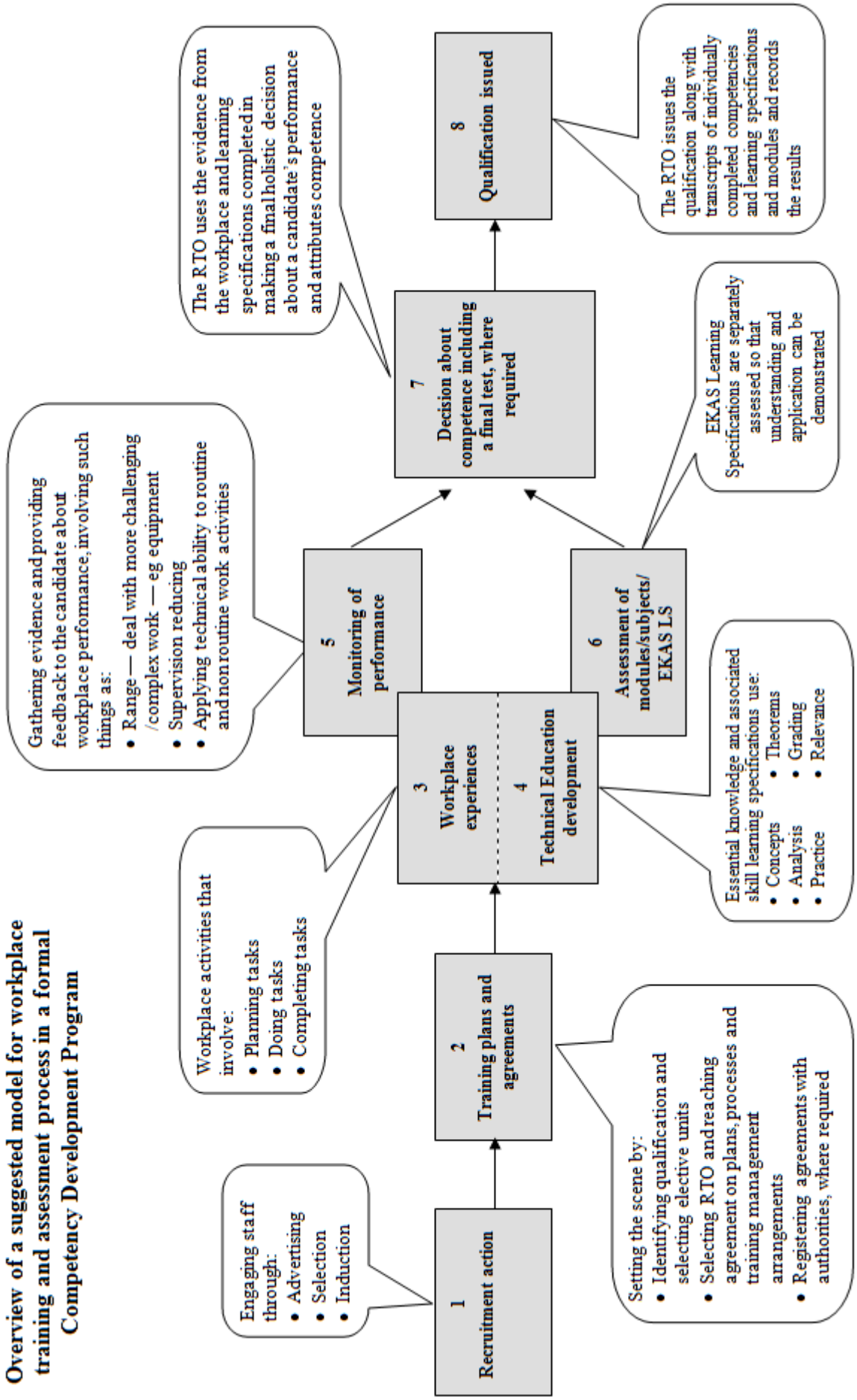

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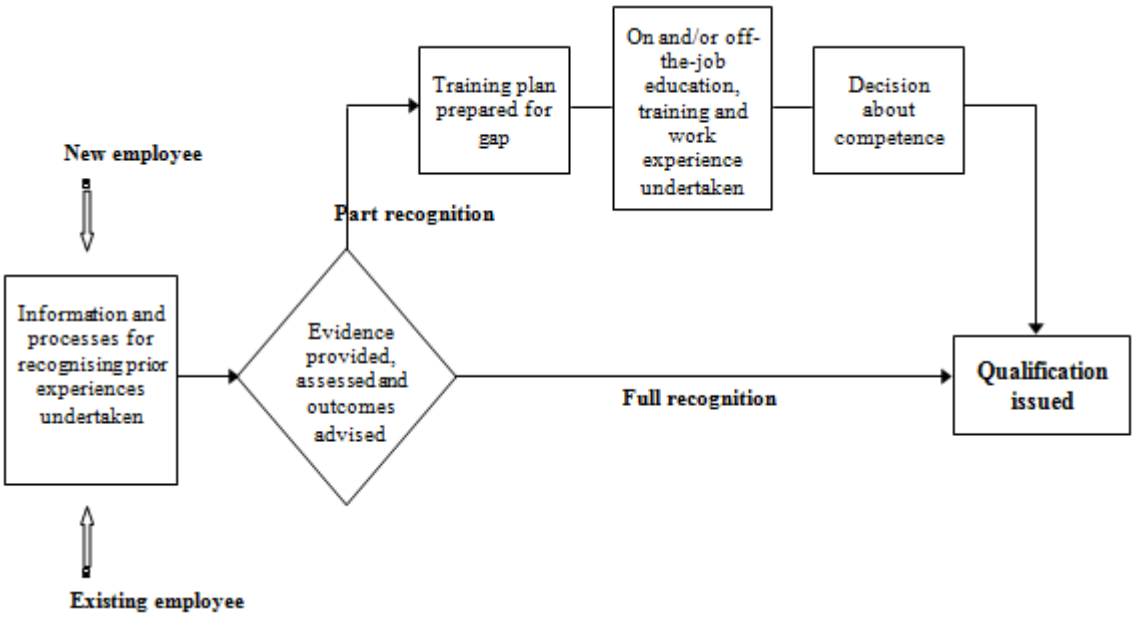
Recognition of Prior Learning/Experience Model

A typical process for candidates seeking to have their prior experiences recognised within the model is shown in the following diagram.



Learning and Assessment strategies

Introduction

The skills and knowledge required by a competent worker are described in terms of competency standard units. To be assessed as ‘competent’, against competency standards, individuals need to demonstrate they have achieved the requisite workplace functions and have also acquired the specified essential knowledge and associated skills (EKAS) underpinning performance.

A candidate wishing to be assessed against a specific competency standard unit(s) must be assessed by a qualified assessor. The assessor must use assessment processes, methods and tools which are in line with this Training Package.

Assessment involves gathering evidence to demonstrate that an individual has the necessary essential knowledge and associated skills required by the specified competency standard(s) together with requisite work performance. This may include assessment of knowledge and skills obtained through educational courses as well as through application of knowledge and skills in the workplace using workplace processes, equipment and activities.

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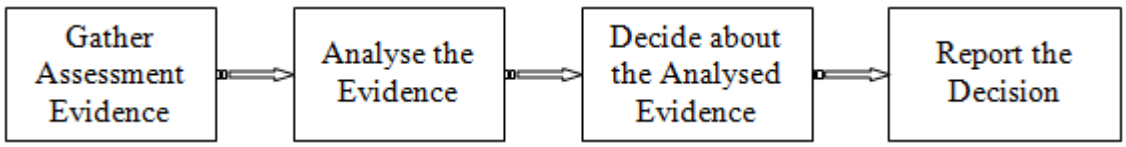
Assessment Planning

Good planning of workplace assessment is most important. The plan is to be based on a suitable process that is in line with the Competency Unit — TAAASS401A Plan and organise assessment from the Training and Assessment Training Package. Assessors need to address the following components of competence in Training Package TAA04, which cover:

- establishing evidence requirements for a specific context
- establishing suitable assessment methods
- developing assessment tools appropriate to a specific assessment context
- trialling assessment procedure.

The Assessment Process

The general process for assessing competence is shown in the following diagram.



Assessors need to adapt the process to take account of physical and operational conditions as well as the characteristics and background of the candidate being assessed. Once the process has been finalised, the candidate should be advised.

The Assessment Guidelines of this Training Package identify three assessment pathways for the Industry, as follows:

- Pathway 1: For new entrants to the industry
- Pathway 2: Recognition of prior learning of those with experience in the Industry
- Pathway 3: Recognition of equivalent Competency Standards Units from other Industry Training Packages

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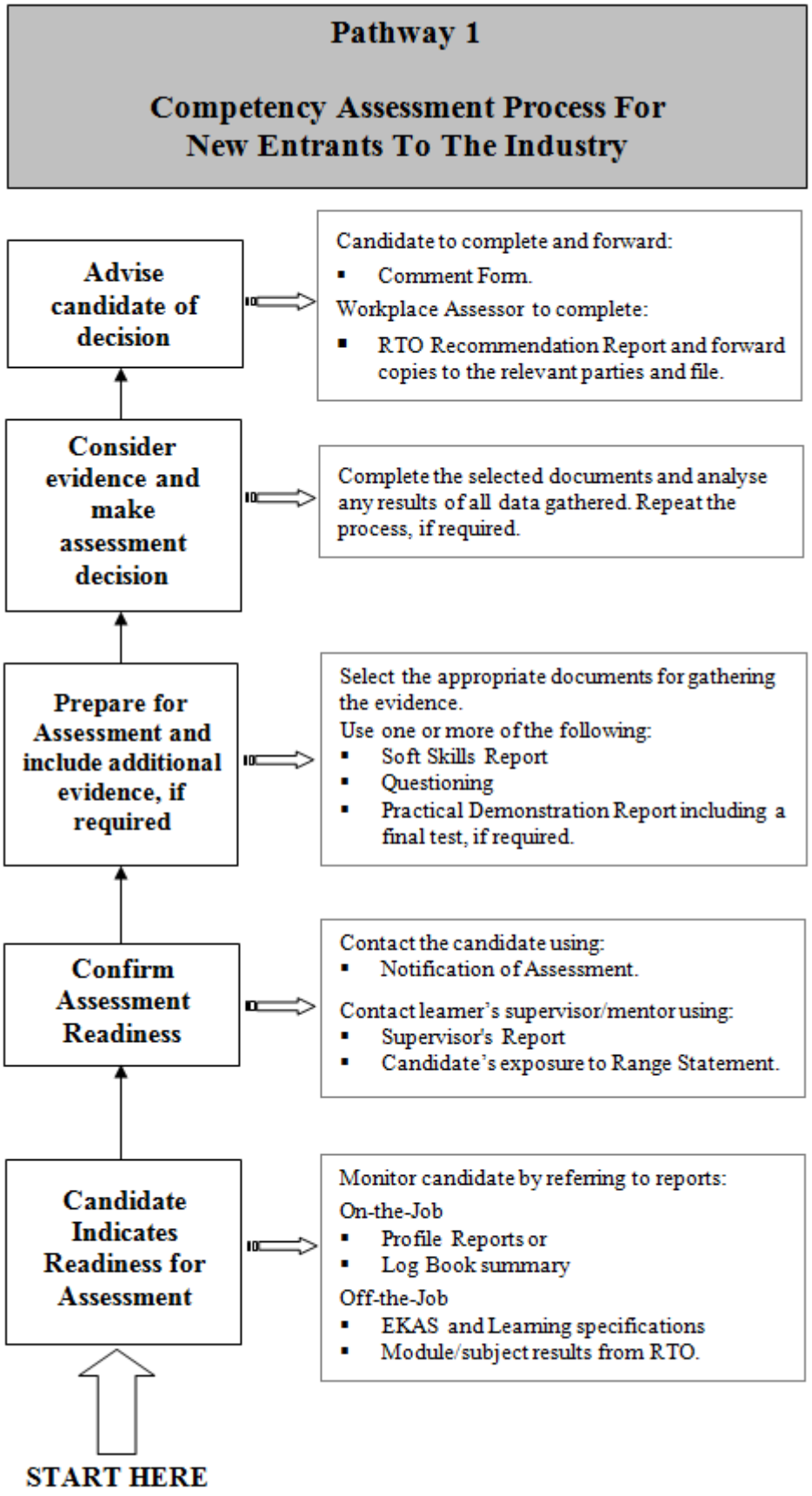
Pathway 3 can be incorporated within the Pathway 2 processes and activities.



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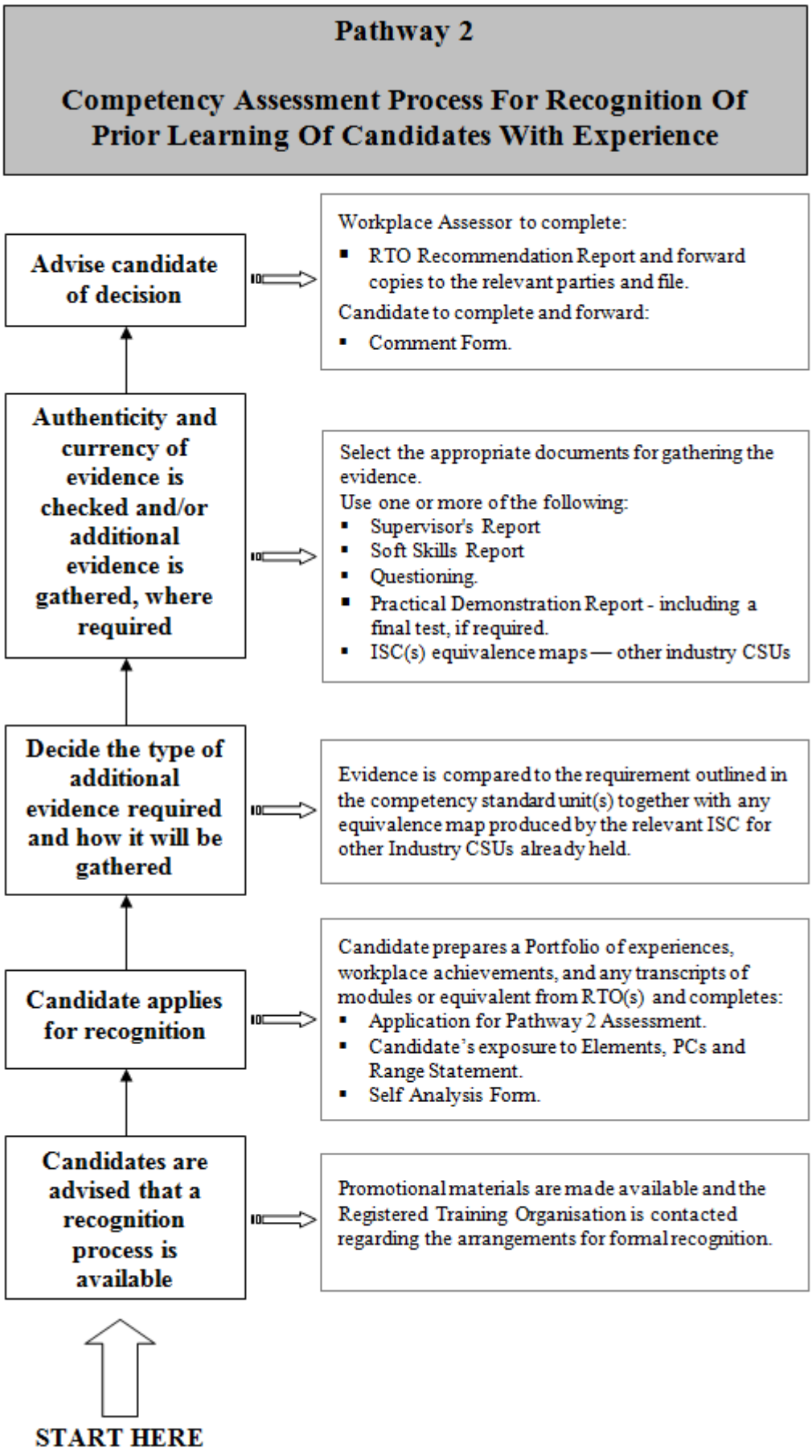

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Establishing the Evidence Requirements

The Training Packages provides a clear statement regarding the evidence requirements in the Evidence Guide and in particular the critical aspects of evidence of each competency standard unit. The following is an extract from one competency standard unit.

'***Critical aspects of evidence***

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEG06'. Evidence shall also comprise:

- A representative body of performance criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in Clause 6.1 'Essential knowledge and associated skills' of this unit to such an extent that the learner's performance outcome is reported on a percentile basis consistent with the preferred industry and/or regulatory benchmark requirements
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - Verify compliance and functionality of general electrical installations as listed in Clause '5. Range statement' and including:

    A — Selecting correct tools and testing equipment.
    B — Identifying visual non-compliance defects
    C — Using effective methods for conducting mandatory and optional tests
    D — Identifying non-compliance from test results.
    E — Identifying causes of non-compliance.
    F — Completing mandatory reporting.
    G — Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items'

The evidence on which competency in this unit is deemed shall be considered holistically. encompassing '**items'** of evidence that industry has deemed critical and that also relate directly to the Performance Criteria and Range Statements. These could include:

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- Specific tools, plant and equipment.
- Specific testing techniques
- Any advice limiting assessment to actual workplaces, for example because of licensing, regulatory or unique infrastructure requirements
- Specific licensing and regulatory requirements.
- Any advice dealing with unexpected and non-routine contingencies by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment

Assessment Methods

Appendix B provides detailed information and examples of the methods and tools that may be used in the industry to help the assessment process.

Assessment involves determining whether a candidate has provided sufficient evidence to demonstrate that they have a specified level of skills and knowledge which they can apply in their work environment.

The evidence provided may include, for example:

- Work activity records
- a transcript of training outcomes
- a portfolio of learning experiences
- a self-assessment by the candidate against the relevant competency standard(s).
- supervisor's report(s), addressing requirements of the identified competency standard(s).
- practical demonstration.
- details of training undertaken linked to requirements of the identified competency standard(s), such as a profiling or 'many samples' reports
- outcomes of a challenge test.

The assessor may use a variety of assessment methods to gather evidence. Appropriate methods for documenting workplace experiences related to this Training Package are:

- on-the-job work observation
- practical exercises in the workplace or under simulated workplace conditions
- appraisal and report by a supervisor/trainer or colleague
- questioning and discussion with the candidate
- written/practical test
- any Industry Skills Council equivalence mapping declaration for competency standard units held from other Industry Training Packages

Develop the Assessment Tools

The assessment tools include:

- instruments for gathering evidence — samples included as Enclosure A in Appendix B
- forms for administrating the process — samples included as Enclosure B in Appendix B
- assessment design materials Glossary of Terms — included Enclosure C in Appendix B.

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Trial the Assessment Procedure

It is very important to trial the assessment strategy. There is a need to make sure it is appropriate to the context in which the assessment is conducted. This will involve such things as:

- Focus on the specific requirements of the competency standard unit being assessed.
- Consideration of the characteristics and background of the person being assessed to make sure the assessor supports the candidate in their understanding of the process and the skills and knowledge that need to be demonstrated.
- Use of assessment methods and instruments to make sure the evidence gathered:
  - - addresses the conditions required to meet the Critical Aspects of Evidence as outlined in this Training Package and related competency standard units
  - - is drawn from a variety of sources and reflects the required range of work circumstances
  - - provides reasonable certainty that the evidence submitted is sufficient, current and authentic.

The selection and application of assessment tools is a decision made by assessors. There is no standard answer, however the following is provided as general guidance.

- Assessors need only gather enough evidence so they can make a judgment that competence has been demonstrated. Too much evidence may be difficult to analyse in a consistent manner, whereas insufficient evidence fails to satisfy the assessment criteria.
- Assessors need to adjust or modify the assessment processes and tools as required, within the constraints of achieving a valid, reliable and fair outcome.
- Assessors need to make sure assessment procedures satisfy the principles of assessment (validity; reliability; flexibility; fairness).
- Assessors need to be cognisant and use the industry-preferred assessment approach, as a first option.

1.3.17 Appendix B - Enclosure A: List of Sample Assessment instruments

Appendix B — Enclosure A: List of Sample Assessment instruments

Enclosure A1 Work activity records

Enclosure A2 Transcript of training outcomes

Enclosure A3 Portfolio

Enclosure A4 Self analysis

Enclosure A5 Candidates exposure to Range Statement

Enclosure A6 Supervisor’s report

Enclosure A7 Supporting skills report

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Enclosure A8 Questioning

Enclosure A9 Practical demonstration

Enclosure A10 Final/challenge test

Enclosure A11 Contracted entry level Profiling Model

Enclosure A1 — Work Activity Records

Work Activity Records may be produced in paper-based or in electronic form. Each Work Activity Record may relate to a group of Competency Standards or if need be a competency standard unit.

The activities and experiences recorded in this mode mostly relate to recurring workplace events associated with elements of performance involving exposure to a range of plant, tools, equipment, components and operating systems that are representative of normal work activities. Activities such as these, under appropriate levels of supervision, are important to a candidate's development.

Such records provide valuable data for:

- Candidates and their supervisor's to track progress in acquiring work-based competencies.
- Assessors to make decisions about a candidate's level of competence.

Work Activity Records summarise:

- relevant activities – (elements) and jobs/tasks undertaken at work
- associated resources used (such as tools, plant/equipment, procedures, and operating systems)
- the period of exposure to each type of task
- the level of supervision provided in the workplace.

This type of record is completed by the Candidate in conjunction with their Supervisor and signed by this Supervisor. It is important that workplace experiences are documented by candidates to help them see how their work experience is developing respective skills and knowledge specified in the relevant competency standard units. Assessors, as a result of the records, can easily analyse them to determine if:

- exposure to the desired workplace activities has occurred.
- the level of supervision is in keeping with the degree of autonomy required by the competency standard unit.
- The learner is able to perform 'whole of job' activities.

The ElectroComms and EnergyUtilities Industry Skills Council trading as E-Oz Energy Skills Australia has a model paper based document that candidates can use to record their workplace activities and experiences. The document is called a User Guide. It is formatted in a way that links workplace activities to competency standard units.

More information, including User Guides and techniques for recording workplace experiences electronically are available from the E-Oz Energy Skills Australia at website: www.e-oz.com.au.

Enclosure A2 — Transcript of Training Outcomes

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Essential Knowledge and Associated Skills (EKAS) learning specifications and related results using training modules/topics/subjects that are completed off-the-job develop an individual's technical underpinning knowledge and skill. This may apply where the industry expects such due to the regulated or preferred nature of work.

These learning specifications provide the learner with the essential underpinning knowledge and associated skills required to:

- deal with both routine and non-routine technical activities
- readily adapt their skills when new technologies are introduced
- transfer skills to new work environments.

The Registered Training Organisation (RTO) who is issuing the credential can generally provide current information about an individual's progress in the essential knowledge and associated skills or mapped modules/topics/subjects.

Learners that have undertaken a recognised structured training program with an RTO should submit a formal transcript – 'Statement of Results' (training outcomes) from the issuing RTO as evidence, for inclusion in the process of competency assessment.

Candidates seeking recognition of prior learning need to provide evidence of knowledge and skills equivalent to the content of the essential knowledge and associated skills specifications (modules/topics/subjects) detailed in the competency standard units in which they are being assessed as well as their workplace experiences. Applicants for recognition of prior learning may also seek advice from the Registered Training Organisation about the equivalence status of available evidence of their acquired knowledge and skills.

The ElectroComms and EnergyUtilities Industry Skills Council trading as E-Oz Energy Skills Australia at www.e-oz.com.au can provide advice in regard to the availability of the essential knowledge and associated skills learning specifications for training modules/topics/subjects, which have been aligned to respective competency standard units and essential knowledge and associated skills clauses.

Enclosure A3 — Portfolio

A portfolio is a collection of documents that demonstrate an individual's professional experiences and achievements in relation to identified competency standards. Typically, portfolios include information from a variety of sources including academic achievements, employment record, work activities, supervisor reports and references.

The candidate should prepare their own portfolio as an accurate reflection of their work and academic history and achievements.

Assessors advise candidates about the amount, type and format of evidence they should submit for assessment against identified competency standard units.

The use of a Portfolio as an assessment instrument can be enhanced by the use of the Self-analysis form included as Enclosure A4.

Enclosure A4 — Self Analysis

A self-analysis involves the candidate in assessing their own level of skills and knowledge acquired through work experience and relevant training programs.

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Candidates should complete a Self-Analysis Form in relation to each competency standard being assessed, identifying the evidence they can provide to demonstrate each required component of their skills and knowledge.

Assessors can check the references to determine if the evidence provided links directly or indirectly to the requirements outlined in competency standard units and use this data as part of the overall assessment process.

Typically, the self-analysis form would be used for a Pathway 2 Assessment, however, it could have application in a Pathway 1 Assessment in certain circumstances.

Self-Analysis Application Form

This form allows candidates to summarise their vocational experiences in relation to a particular competency standard unit or a group of units. The information provided is used to identify the list of competencies sought for assessment. They will need to support their responses to questions, claims and/or comments with authentic evidence. To do this, it is recommended that they develop a portfolio of evidence to be submitted with this self-analysis application form. They should be advised to cross reference the information they provide with the information provided in their Portfolio.

They must however, be provided with clear instructions about the information required before they complete each respective form. They also need to view and understand the detailed requirements of the competency standard unit(s) against which they are seeking assessment. A workplace assessor should assist them with the instructions and details.

They may need to submit a separate Self-Analysis Form for each competency standard unit(s) for which they are seeking recognition. The Self-Analysis Application Form could be like the sample provided below.

Sample — Self-Analysis Application Form

Enter the codes and title of the National Qualification and title and codes the competency standard unit(s) from qualification for which you are seeking recognition.

Title of National Qualification	**Title and code of Competency Standard Unit(s)** **(For which recognition is being sought)**
	•
	•

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	•
	•
	•
	•
	•

Enter the codes and titles of Certificates, Qualifications, Transcripts of Academic achievement, or Licences that you believe to be supporting evidence.

(Remember to include these documents in your portfolio. You must be able to demonstrate how each document relates to the respective competency standards.)

Code and name of Certificate, Qualification, Transcript of academic record or Licence	Year Achieved

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Note: For all Certificates, Qualification and associated transcripts of academic records identified above, a certified copy must be provided.

- Approximately how many jobs have you been involved in that relates to each of the respective competency standard unit(s)?

  Competency Standard Unit 1 _____ Jobs

  Competency Standard Unit 2 _____ Jobs

  Competency Standard Unit 3 _____ Jobs

  Competency Standard Unit 4 _____ Jobs

  Competency Standard Unit 5 _____ Jobs

  Competency Standard Unit 6 _____ Jobs

  Competency Standard Unit 7 _____ Jobs

- Give details about the **largest** job you have been involved with. Briefly describe the job and where it was carried out. (Portfolio Ref _____)

- Estimate the total amount of time (for all similar job mentioned above of all size) you have been involved with — tick box. (Portfolio Ref _____)

	Less than 1 week	1 to 4 weeks	4 to 10 weeks	10 weeks to ½ year	More than ½ year
1					
2					
3					
4					
5					
6					
7					

- Describe the level of involvement you have had in this type of work — tick box. (Portfolio Ref _____)

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	Carrying out jobs organised by others	Carrying out jobs organised by others and completing all tests and/or writing of reports	Planning the job from the beginning, carrying out the work and completing all tests and writing of reports
1			
2			
3			
4			
5			
6			
7			

- To what extent were you involved in this type of work? — tick box.
  (Portfolio Ref _____)

	Carrying out routine tasks	Carrying out and manage several routine tasks at one time	Deal with non routine tasks including diagnosing and rectifying faults	Organising others you work with and dealing with clients
1				
2				
3				
4				
5				
6				
7				

- How much training did you require to perform the work? — tick box.
  (Portfolio Ref _____)

	Self taught	Basic technical	Analytical	People and

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	skills	knowledge and skills	technical knowledge and skills	customer skills
1				
2				
3				
4				
5				
6				
7				

- To what degree were you supervised when performing the work? — tick box.

	Constant supervision	General supervision	Self supervision
1			
2			
3			
4			
5			
6			
7			

- Describe any special features or circumstances about the type of work you have been involved with. (Portfolio Ref _____)

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- List as many different types of equipment items you used when you carried out the work associated with the competency standard units. Make the list under headings such as plant, tools, components, systems and the like. A workplace assessor can assist you with the headings. A separate form may be provided for supplying this information. (Portfolio Ref _____)

Unit code	Unit title	Items	

- For the competency standard units, have you completed a whole job using the equipment items listed above? Also indicate the number of times you have done so.

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CSU — 1	Involvement (circle yes or no)	Number of times		
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU — 2	Involvement (circle yes or no)	Number of times		
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU — 3	Involvement (circle yes or no)	Number of times		
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU — 4	Involvement (circle yes or no)		Number of times	
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU — 5	Involvement (circle yes or no)	Number of times		
	Planned the work	Yes	No	

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	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU — 6	Involvement (circle yes or no)	Number of times		
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

CSU — 7	Involvement (circle yes or no)	Number of times		
	Planned the work	Yes	No	
	Carried out the work	Yes	No	
	Completed the work	Yes	No	

Declaration by Candidate

All the information provided is entirely factual:

Name: ……

Signed ……..…. Date: …….

Enclosure A5 — Candidate Exposure to Range Statement

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This assessment instrument augments other information needed for judging competence and, where required, should be completed by the candidate to provide a list of components, tools, systems, plant, test equipment and associated items outlined in the Range Statement in individual competency standard units. As the Range Statement is a component part of the whole competency standard unit assessors should ensure the gathering of evidence by the candidate is considered a formative part of the assessment process and that, once the evidence is presented a holistic approach to judging and attributing competence is exercised in conjunction with other related data.

A separate form is required for each competency standard unit to be assessed. The assessor should complete the following parts of this form in conjunction with the candidate to make sure they are clear about what is required:

- Competency Standard Unit Title and Unit Number
- Candidate's Name
- Date
- Range Statement — Item Group:
  Consult the Range Statement as described in section *Establishing the evidence requirements* of this Document. Each group alpha character is to represent an appropriate group of variables, such as components, tools, system, plant, processes, equipment etc, as required by the particular competency standard.
- Range Statement — Items involved:
  List the particular items that have been predetermined as being critical from the critical aspects of evidence section when the evidence requirements were established (see *Establishing the evidence requirements*).

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Candidates place a tick in the column against those items they have been exposed to in a work environment. Candidate should add to the list of items involved, where appropriate. Here is an example.

Competency standard unit – _____ *(Assessor to complete this section)*		***Candidate to complete***
***Range Statement Item Group**	***Range Statement Items Involved**	**Identify the items you have worked on**
A Personal protective equipment	**Goggles**	4
	Gas mask	4
	Boots	
	Gloves	4
B Pipe types	**Cast Iron**	
	Plastic	4

Candidate's work experience with items in the Range Statement listed in this Competency Standard Unit

Competency standard unit title:		**Unit no:**
Candidate's name:		**Date:**
Range Statement Item Group	**Range Statement Items Involved**	***Candidate to complete*** **Identify the items you have worked on**
A		

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B		
C		
D		

Declaration by Candidate

All the information provided is entirely factual:

Name: ……

Signed ……..…. Date: …….

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Enclosure A6 — Supervisor's report

Typically, the 'supervisor' (mentor) approached to provide a report for competency assessment will have spent considerable time guiding or monitoring the candidate in his/her development by providing supervised workplace learning experiences, appropriate to the candidate's ability.

Supervisors should be asked to comment on the candidate's demonstrated ability to:

- demonstrate specific skills as described in the respective aspects of the competency standard units under assessment
- apply required essential underpinning knowledge and associated skills (eg. as learnt in their technical studies) to the work undertaken
- work in a team or independently in a way that is productive and safe.

Comments made by the candidate's supervisor/mentor are an important source of evidence for assessors.

The supervisor's report can be completed as part of the pre-assessment planning process or during any other part of the process. More than one supervisor can provide information.

Assessors should make sure supervisors are clear about the specific detailed requirements of the Gas Industry Competency Standards targeted for assessment.

Supervisor's Report on _____(Learner's Name)	
Name of Supervisor/Assessor: _____	**Date: ___/___/_____**
Position in organisation: _____Contact number:_____	
Approximate time (cumulative) providing guidance to the candidate _____days / hrs in Unit(s): _____ _____	
Responses made by supervisors/mentors are for the purpose of providing information to a workplace assessor. The supervisor is <u>not</u> making a decision about competence. The assessor will include the information with other data in the decision making process.	
Question asked of the supervisor/mentor	**Responses**

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Taking into consideration the candidate technical development and work experiences, can they:	**Yes**	**Requires further training**	**No**
Carry out duties with confidence			
Work in a safe manner with care for self and others			
Perform tasks with the minimal amount of waste or rework			
Complete tasks within a reasonable time			
Identify ways of improving how jobs are done			
Initiate action to improve processes or practices			
Work with others to achieve the work outputs of the group			
Work independently to achieve work outputs			
Resolve non-routine work functions			
Other comments:			
Supervisor's/Assessor's Signature: Date: / /			

Enclosure A7 — 'Supporting skills' report

Supporting skills refer to non-technical skills that candidates must demonstrate as part of their competency assessment. They include:

- the ability to work independently or in teams while dealing with customers
- knowledge of and ability to follow enterprise policies
- communication skills used in following and issuing instructions
- knowledge of and ability to address quality assurance requirements
- personal management and development skills

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- knowledge of and ability to address environmental protection and sustainable energy policies issues.

Candidates must demonstrate these important attributes which are embedded in all competency standard units in the Training Package.

A supporting skills report may be completed by an assessor, the candidate's supervisor or another third party. Following is a brief description of the various aspects of supporting skills.

Supporting Skills — What do they cover?

1. Enterprise Instructions

Technical manuals

Using enterprise or manufacturers' technical manuals to ensure equipment and parts are installed to manufacturer's specifications.

Quality systems

Plan, apply and contribute to quality systems.

Computers systems

Use enterprise documentation and record systems including, where appropriate, data capture equipment such as computers, information systems and technologies.

Environmental and sustainable energy requirements

The safe disposal of used oil, grease and chemicals and the reduction of electrical energy by turning of the lights and heating devices and the like to minimise the impact that engineering practices have on the environment.

Occupational Health and Safety (OHS) requirements

Follow OHS and standard operating procedures in a manner that is safe to the individual and others.

Equal opportunity/Ethical practice/Cultural diversity

Be familiar with the enterprise, equal employment opportunity polices, ethical practices and principles and awareness of cultural diversity.

Enterprise vehicles

Complete vehicle log book details accurately, ensure the vehicle is kept clean, secured and fuel and liquid levels are maintained.

2. Customer relations

Public

Provide courteous and informative advice during construction, maintenance or service activities.

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Workers providing other services

Cooperate with workers providing other construction, maintenance or service activities.

Clients and land owners

Recognise the responsibilities and rights of clients and land owners.

Authorities

Recognise the responsibilities and rights of statutory and other authorities.

3. Self development

Systematic problem solving

Solve problems by using technical literature, exploring theories, performing calculations and by making enquiries.

Personal wellbeing

Maintain and promote personal well being in the workplace through fitness and by avoiding excessive use of alcohol, tobacco and other substances.

Time management

Be punctual, complete work activities on time, and sequence activities to maximise the use of available time.

Professional development

Seek to improve technical ability by discussions with others or by technical research and on-going competency development.

4. Team work

Communications

Communicate plans, information, intentions and safety criteria to others' using appropriate means.

Team involvement

Contribute positively to the work-team environment.

Competency enhancement

Participate in the training of others by sharing ideas, explaining operating systems and detailing the working arrangements of components and equipment.

Instructions for completing the supporting skills report

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The supporting skills report on the next page provides a means of recording information about a candidate's skills. A workplace assessor (or nominee) does this by referring to documentation, asking the candidate questions and/or seeking advice from the candidate's supervisor/mentor.

Complete the form in the following way.

Step 1

Place a cross (X) in the box to indicate areas from where evidence has been sourced.

Supporting Skills Report		
Candidate's name		**Date**
Supervisor's/Assessor's name		/ /
Enterprise instructions 1. Applies correctly without constantly making reference to them. 2. Refers to them regularly and applies information correctly. 3. Awareness of their existence but not referred to or used.	**Rating** (1) 2 3	
Technical manuals	X	Identify a minimum of three.
Quality systems	X	
Computer systems	X	
Environmental requirements	X	

Step 2

Review documentation and/or ask questions of the learner or their mentor/ supervisor.

Step 3

For each area, establish the appropriate level (1, 2 or 3) that reflects the capability of the learner. Place a circle around the corresponding number. Evidence should be collected from a number of sources before rating the candidate.

Step 2

Review documentation and/or ask questions of the learner or their mentor/ supervisor.

Step 3

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For each area, establish the appropriate level (1, 2 or 3) that reflects the capability of the learner. Place a circle around the corresponding number. Evidence should be collected from a number of sources before rating the candidate.

Note: A rating of 2 or 3 indicates further training or experience is required. A rating of 1 indicates the candidate has demonstrated their competence in this area.

Supporting Skills Report		
Candidate's name		Date
Supervisor's/Assessor's name		/ /
Enterprise instructions 1. Applies correctly without constantly making reference to them. 2. Refers to them regularly and applies information correctly. 3. Awareness of their existence but not referred to or used.	***Rating (circle #)*** **1** **2** **3**	
Technical manuals		Identify a minimum of three.
Quality systems		
Computer systems		
Environmental and sustainable energy requirements		
Occupational Health and Safety requirements		
Equal Opportunity/Ethical practice/Cultural diversity		
Enterprise vehicles		
Customer relations 1. Customers are included in discussion effecting operational issues 2. Knowledge of but limited application of customer relations. 3. Requires more understanding of customer needs.	***Rating*** **1** **2** **3**	
Public		Identify a minimum
Workers providing other services		

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Clients and land owners		of two.
Authorities		
Self development 1. Desire to expand beyond the present job role. 2. Keeps abreast of new products and services. 3. Requires more understanding of the job role.	***Rating*** **1** **2** **3**	
Systematic problem solving		Identify a minimum of two.
Personal well being		
Time management		
Professional development		
Team Work 1. Shares ideas, assists and accepts assistance from others 2. Accepts ideas and assistance from others. 3. Prefers not to assist or accept assistance from others	***Rating*** **1** **2** **3**	
Communications		Identify a minimum of two.
Team involvement		
Competency enhancement		

Enclosure A8 — Questioning

It may be necessary as part of the assessment process, to gather additional evidence to clarify specific aspects of competence, especially in relation to the associated performance criteria. The RTO Assessor (or their nominee) may need to ask questions of the candidate, their supervisor or their trainer. A form is provided in this enclosure for documenting their responses.

The form provides guidelines for questioning a candidate about the Performance Criteria related to each element of competence. Typically, the elements in each of the competency standard units in this Training Package follow a similar structure. Principally they generally cover *planning for*, *carrying out* and *completing* the job function.

In this section of the document you will also find two tables which provide guidelines for assessing a candidate's response to these questions.

If the assessment is formative (as part of a training process) then the response given by the candidate should be consistent with the 'Appropriate coverage to questions -level 1'.

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If the assessment is summative (final) the responses should be consistent with the 'Appropriate coverage to questions - level 2'.

Note to assessors:

1. As competency standard units are typically structured around PLAN ⇐ CARRY OUT ⇐ COMPLETE jobs in the workplace, the form for recording responses is generic.

2. Please make reasonable adjustments to the form as required to accommodate particular aspects of individual competency standard units.

Level 1 — Appropriate coverage of responses to questions

Element 1 – Planning for job/task functions (L1)

Issues about involvement of personnel, enterprises operational requirements and the requirements of regulators would not normally be expected.

Coverage should involve such things as:

OHS:

- Clarifying instructions given if any doubt exists as to what is required
- Checking with others involved if any personal protective equipment is needed
- Identifying hazards and risks associated with the wok, including any first aid and other similar requirements

Tools, equipment etc:

- Identifying the tools and equipment that are required
- Explaining where any special equipment is located and how arrangements will be made to have them available, if required.

The work schedule:

- Identifying the work and relevant processes, procedures and personnel required
- Identifying the process of work to be undertaken
- Identifying the work site activities and issues to be attended to
- Identifying the authorities associated with the work.
- Identifying any isolation procedures/permits that may apply.

Element 2 – Carrying out job/task functions (L1)

Coverage should involve such things as:

OHS:

- Keeping the immediate work area clear of debris
- Keeping tools clean and organised when not in use
- Keeping clear of such things as moving parts, live electrical conductors, hazards, and obstacles

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- Wearing work clothes and personal protective equipment when required
- Performing the technical work required
- Applying the relevant knowledge and skills underpinning performance.

Tasks:

- Following instructions given by others
- Observing what is occurring, listening to explanations about why tasks are performed in certain ways and asking questions when required.

Element 3 – Completing job/task functions (L1)
Coverage should involve such things as: • Cleaning tools and equipment • Returning tools and equipment to their normal storage place.

Level 2 — Appropriate coverage of responses to questions

Element 1 – Planning for job/task functions (L2)
Coverage should involve, but not limited to, such things as: **OHS:** • Clarifying instructions given if any doubt exists as to what is required • Arranging for any special personal protective equipment to be available • Checking to see if the work site is accessible. **Personnel:** • Identifying other personnel involved in the work and coordinating proposed activities. **Regulatory requirements:** • Arranging for relevant work instructions and installation specifications to be available, if required • Arranging work permits/isolation, etc. **Tools, equipment etc:** • Arranging the tools and equipment that are required • Coordinating where any special equipment is located and how arrangements will be made to have them available, if required. **The work schedule:** • Confirming the plan and process of work to be undertaken • Confirming the work and relevant processes, procedures and personnel required

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Element 1 – Planning for job/task functions (L2)
• Confirming the work site activities and issues to be attended to • Confirming the authorities associated with the work • Confirming isolation or work permits authorities.

Element 2 – Carrying out job/task functions (L2)
Coverage should involve, but not limited to, such things as: **OHS:** • Keeping the immediate work area clear of debris • Keeping tools clean and organised when not in use • Keeping clear of such things as moving parts, live electrical conductors and obstacles • Wearing work clothes and personal protective equipment when required • Having barriers in place to exclude public access to the work place, as required • Ensuring all personnel involved are alerted to work activities and communications are established and maintained • Keeping alert to the working environment while watching for unexpected occurrences • Confirming appropriate competence of first aid and persons, including other requirements such as confined space and the like, where appropriate. **Engineering tasks — specific actions should be included that are additional to the following:** • Performing tasks independently with reference to enterprise instructions • Accept and act on initial advice and feedback provided by others • Observing what is occurring, listening to explanations about why tasks are performed in certain ways and asking questions when required • Applying essential knowledge and associated skills and providing solutions to 'what if' scenarios. **Technical assistance:** • Further reference to enterprise instructions • Reference to the requirements of regulations, work instructions or other relevant standard • Recall of theory or application • Involvement of others with greater experience.

Element 3 – Completing job/task functions (L2)
Coverage should involve, but not limited to, such things as:

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Element 3 – Completing job/task functions (L2)
Performance checks: • Checking that all guards & covers removed during the activities are replaced and adjusted • Check that all temporary arrangements required during the process work have been removed • Carrying out any tests required by regulation or work instructions • Operating the installed/repaired parts or system to ensure it functions as specified. **Notification:** • Informing all immediate personnel involved that the work is completed • Informing clients and others that the work is completed • Removing all signs and barriers, as necessary • Reporting any damaged tools and equipment and arrange replacement. **Paperwork:** • Completing store/inventory paperwork • Completing the work log or management reports precisely by recording what occurred and providing recommendations/solutions to be followed up in point form.

Instruction for recording responses to questions

Step 1

Identify the elements of competence on which questions will be asked.

Step 2

Identify if the response expected is to be typical of a candidate who is undergoing a formative assessment (level 1) or summative assessment (level 2). This may be different for each element involved.

Step 3

Ask the main question and indicate (Y or N) whether the candidate's response addresses the coverage required.

Step 4

Ask follow up questions to probe any areas not recorded as Y in Step 3. Record Y or N to the response given in the space provided.

From all the evidence presented a holistic judgement is then made.

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Questions

Unit Title: **No.**						
Candidate's name: **Assessors name:**						
Main Question for the '*Planning Work*' Element **What are the main things you would consider when planning and preparing for work?**	**Expected Response Level**				**Not used**	
	(circle)	**1**	**2**		**(tick)**	
Issues to be cover in response to the main question – and – follow up questions, if required					**Coverage (Y or N)**	
What OHS issues do you consider?						
Who are the personnel you would involve?						
What enterprise requirements need to be taken into account?						
What regulatory requirements need to be taken into account?						
What tools, equipment and other items need to be arranged to do this job, where will you get them from and how will you arrange to have them made available when you need them?						
What work schedule will be followed?						
Main Question for the '*Carry-Out Work*' Element **What are the main things you will do to ensure the work you carry out is done productively?**	**Expected Response Level**				**Not used**	
	(circle)	**1**	**2**		**(tick)**	
Issues to be cover in response to the main question – and — follow up questions, if required					**Coverage (Y or N)**	
What are the main OHS practices and precautions that are specific to						

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Unit Title: **No.**	
Candidate's name: **Assessors name:**	
this work function?	
What are the main engineering tasks involved in this job?	
What would you do if the work you were undertaking became technically difficult and you could not complete it to requirements?	
What essential knowledge and associated skills would support a response to providing solutions to 'what if' scenarios?	

Unit Title: (Cont.) **No.**						
Candidate's name: **Assessors name:**						
Main Question for the '*Completing Work*' Element	**Expected Response Level**				**Not used**	
What are the main things you will do? What needs to be done to finalise the job?	**(circle)**	**1**	**2**		**(tick)**	

Issues to be cover in response to the main question – and – follow up questions, if required	**Coverage (Y or N)**
What checks need to be made to insure the work you undertook meets specified performance requirements?	
Who do you notify that the work has been completed?	
What paperwork needs to be completed and what will you write about?	

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Enclosure A9 — Practical Demonstration

As part of evidence provided to demonstrate competence against detailed competency standards, the assessor may need to observe the candidate demonstrating practical tasks.

The Engineering Practical Skills Form is provided herein to help assessors record these work-based observations. The notes taken are analysed and from this a rating is given about the candidate's engineering skills.

Note to assessors:

- The form for recording responses is generic to all competency standard units.
- Make reasonable adjustments to the form as required to accommodate particular aspects of individual competency standard units.
- You may only need to observe candidates on particular (not all) Elements of Competence.
- If the assessment is formative (for feedback purposes), then the level of supervision that applies during work activities should apply during the assessment activity.

Instructions for completing the Engineering Practical Skills Form

The form provides a means of recording information about a learner's engineering practice. A workplace assessor (or nominee) does this by an observation of pre-arranged activities and determining an engineering skills rating.

Step 1

Enter the title of the competency standard unit and its Unit Number in the space provided.

Step 2

Enter the learner's name in the space provided.

Step 3

Enter the name of the person who is completing the form (this may be the assessor or someone who the assessor nominates to gather the information).

Step 4

Enter the date on which the evidence is gathered.

Step 5

Determine the elements of competence being observed (circle yes or no).

Step 6

Determine the level of supervision that is to apply to the elements being observed. Use the supervision — Level code from the bottom left of the form (A, B or C) and enter in the second column.

Step 7

Observe the learner perform tasks related to the element(s) being assessed, checking that they address the required Performance Criteria. Record in the first column of the table under the heading 'Notes from Observation' key points to indicate whether the learner:

- Has acted in a way that meets specifications required by manufacturers, regulations or client specifications

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- Has followed established enterprise procedures
- Met the requirements of the Competency Standard being assessed
- Needed to be shown or told how to perform tasks beyond what is reasonably expected given his/her level of experience and therefore requires further training.

Step 8

Using the engineering skills rating codes at the bottom right of the table, enter the appropriate letter in the space provided to indicate the level of competence demonstrated in relation to the competency standard being assessed.

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From all the evidence presented a holistic judgement is then made.

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Engineering practical skills form

Competency standard unit title: _____ **Date:** _____/_____/_____

Candidate's name: _____ *Assessor's Name:* _____

Notes from observation	Supervision Enter A, B or C	Engineering Practice Enter D, E, F, G
Plan activities: Yes or No (circle to indicate if evidence is being gathered)		
Carry out activities: Yes or No (circle to indicate if evidence is being gathered)		
Complete activities: Yes or No (circle to indicate if evidence is being gathered)		

Supervision Level		Engineering Skills Rating	
A	The learner is working under direct supervision.	D	Met required specifications.
B	The learner is working under limited supervision	E	Followed established enterprise procedures.
C	The learner is working under general supervision with a high degree of autonomy	F	Met competency standard requirements
		G	Further training required

Learner's Signature ……

Assessor's Signature ……

Enclosure A10 — Final/Challenge Test

A test may be required if the assessment process does not provide:

- sufficient, authentic or current evidence
- particular aspects of evidence related to equipment operation
- particular aspects related to safety
- all the requirements related to the influence of external bodies such as regulatory authorities.

A final test should:

- cover the conditions associated with the 'Critical Aspects of Evidence' statement in competency standard units
- take into account the principles of assessment and be sufficiently rigorous
- be consistent with the policies and practices of the Registered Training Organisation who is providing the recognition.

Enclosure A11 — Contracted Entry Level Profiling Model

In relation to the industry-preferred assessment model for contract entry-level competency development programs (New Apprenticeships), longitudinal approaches to assessment activities are considered more efficient and effective. This is best achieved by implementing a process where the learner frequently gathers reliable data from the workplace has it verified in a form that can be easily used and consistently interpreted.

One option is to use a machine-readable data scan card or direct web entry process, operating in conjunction with a sophisticated computer software program to achieve this result. The design of the system known as Profiling reflects the key requirements outlined in the relevant competency standard units making up the competency development plan/program. Learners report directly on their exposure to required work experiences in a structured way. Additional to the off-the-job technical training required for contracted entry level learners Profiling gathers specific workplace information reliably and systematically.

Data gathered frequently from the workplace accumulates over the competency development period and is reported graphically at given periods. This approach encourages self review and participation in the system and eliminates bias and minimises the effects of low levels of literacy (see over the page for an example).

The information gathered under Profiling, forms one component of a two part, in some cases three part, Training Program that supports competency development in a way preferred by the industry. The components are:

off-the-job training (technical subjects/topics), and

on-the-job training (workplace activities), and

a specific final 'safety systems (capstone)' test, where applicable.

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Typically the off-the-job component requires the successful completion of technical subjects/topics of training against essential knowledge and associated skills (EKAS) clauses included in the respective competency standard units. More often than not the EKAS are aligned to EKAS learning specifications that expand on the essential knowledge and associated skills clauses; providing more detailed information on depth and breadth of learning required, for RTOs. The on-the-job component requires a profile to develop from workplace experiences/exposures. Finally, a specific safety assessment test is conducted, where applicable, for regulatory and industry requirements.

In relation to the on-the-job workplace data (experiences/exposures) is gathered and reported on against the respective aspects of industry determined competency standards, using predefined industry norms. Typically the information gathered pertains to the:

- activity against each element of competency and indirect information against the performance criteria
- quality, breadth and range of equipment, processes, techniques and applications experienced and worked with/on in the workplace
- level of supervision of a learner's workplace experiences
- hours of exposure (recording hours only is not generally considered Profiling).

Entry against the prescribed criteria is completed regularly (eg weekly) by the learner, the software program calculates the data against industry predefined norms and regular reports are produced (typically quarterly) for the use and information of RTOs, employers and the learner. Assessors use this information in a holistic way to identify and analyse trends and anomalies against the predefined industry norms.

The advantage of Profiling over many other mediums such as manually based log-books which require extensive and laborious analysis is that it is simple and directly reflective of the workplace experiences undertaken at the time. It provides evidence for:

- managing workplace skill development/ performance of competency required to produce quality work
- progressive assessment and supporting the attainment of a national qualification
- the attainment of an electrical workers' licence/regulated registrations, where appropriate
- the need for job rotation
- allocating work
- RTOs — thus reducing the demand for an array of workplace assessors.

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To gain an appreciation of what a data card and a report may look like a sample of each is included below.

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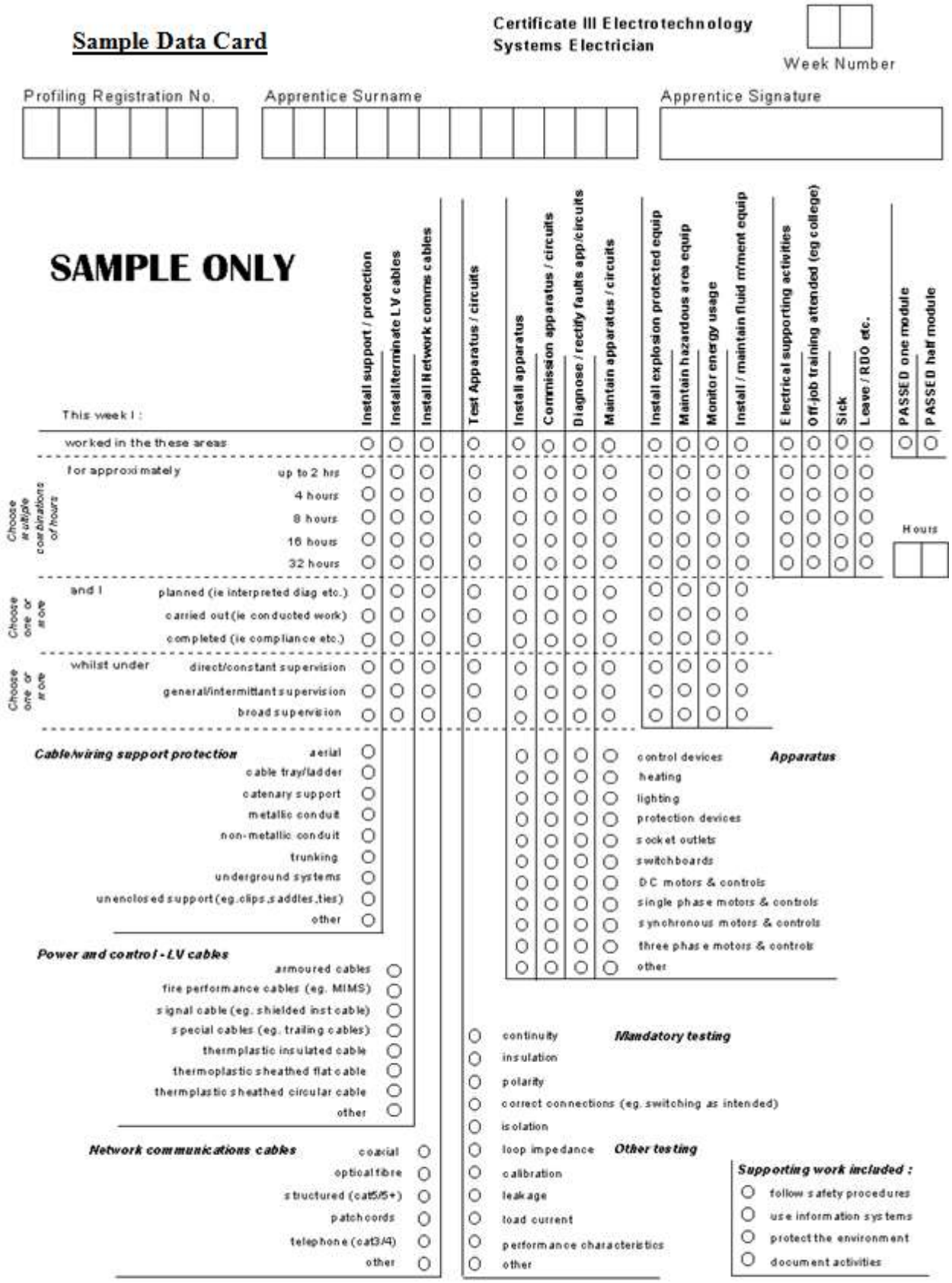

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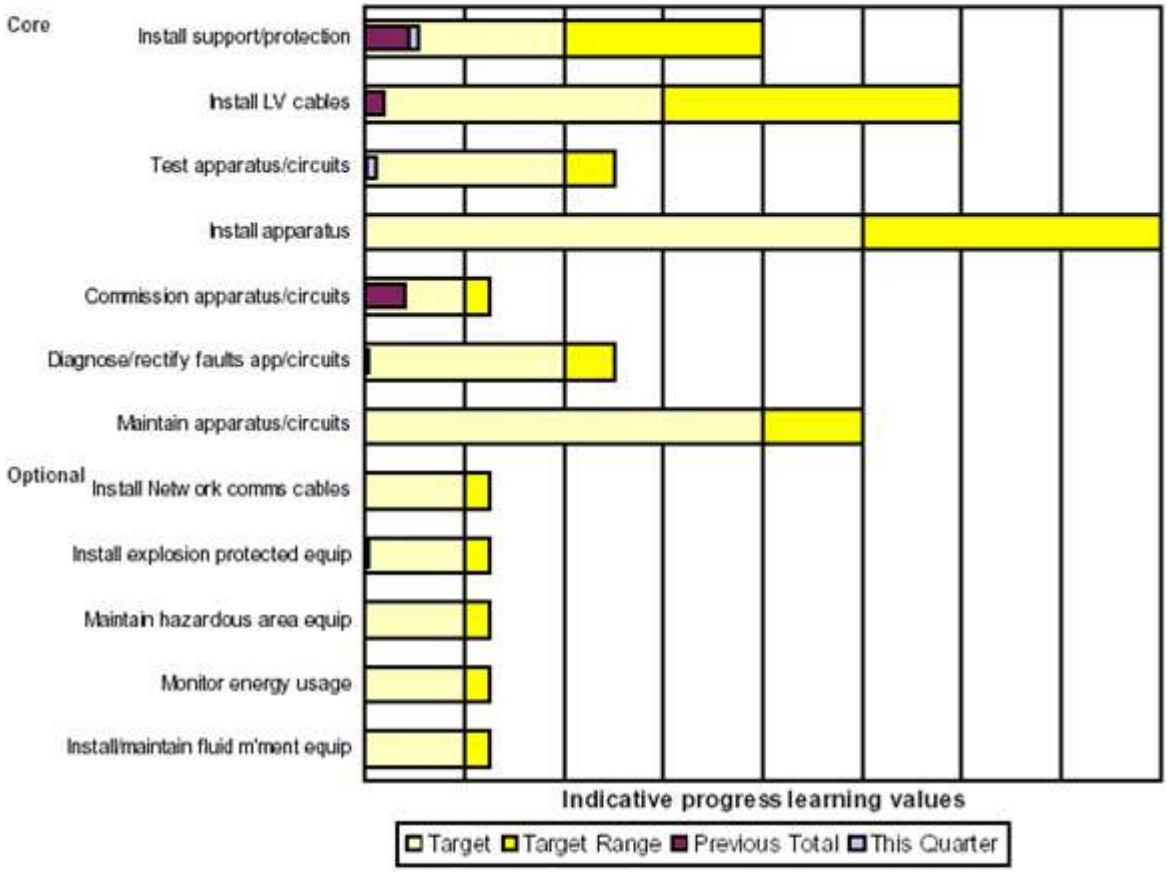
Sample Profiling Report

First Zzsample (999999)

Apprentice On Job Experience Profile - Progressive and Benchmarks Points

Systems Electrician - Quarterly Report, May 2002



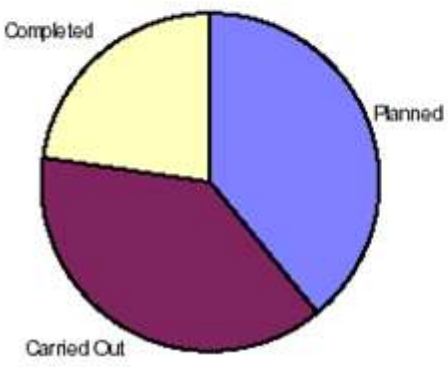
* indicates Optional competency selected by the learner in Schedule C

Apprentice Signature ..... Date .....

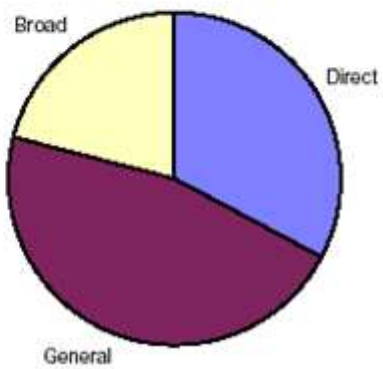
Employer Signature ..... Date .....

Host Signature (if applicable) ..... Date .....

Apprentice role



Supervision level



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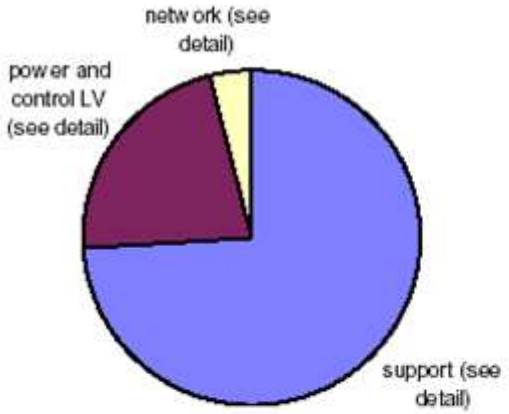
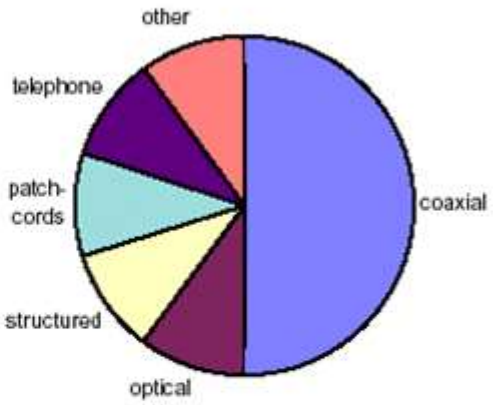
Sample Profiling Report (cont.)

First Zzsample (999999)

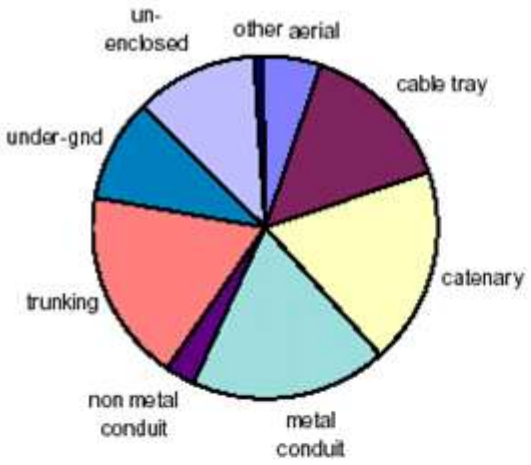
Electrical wiring system type



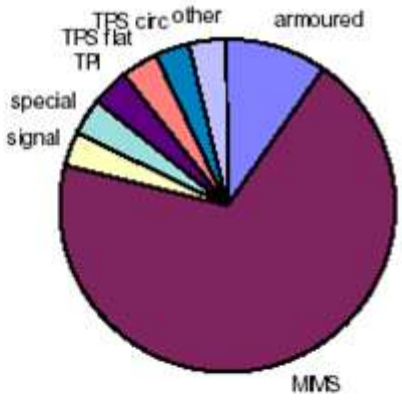
Electrical wiring detail: Network communications



Electrical wiring detail: Support and protection



Electrical wiring detail: Power & control - LV



Testing techniques used

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1.3.18 Appendix B - Enclosure B: Administrative Forms

Appendix B — Enclosure B: Administrative Forms

Enclosure B1	**Notification of Workplace Assessment**
Enclosure B2	**Application for Recognition of Prior Learning/ Current Competence**
Enclosure B3	**Assessee Comment/Feedback**
Enclosure B4	**Candidates Competency Achievement Report to a RTO**

Enclosure B1 — Notification of Workplace Assessment

This form is used to notify a learner about their assessment. The learner is advised of the type of evidence being sought, the competency standard unit(s) of competence being considered, who will be involved and the time and place of the activity.

Enclosure B2 — Application for Recognition of Prior Learning/ Current Competence

Candidates should use this form to apply for recognition. The applicant needs to provide their personal details, the competency standard unit(s) for which they seek recognition, the type of evidence being provided and the names of referees.

Enclosure B3 — Assessee Comment/Feedback

This form is used by the learner (or RPL applicant) to make comments about the workplace assessment process and/or decision. It should be distributed prior to an assessment event being conducted. The workplace assessor should be sent a copy of each form completed and should retain completed forms in case of any future review and/or inquiry.

Enclosure B4 — Candidate's Competency Achievement Report to an RTO

This form summaries a workplace assessment process and allows workplace assessors to make recommendations to an RTO about deeming competence of a learner or RPL applicant.

Enclosure B1 — Notification of a Workplace Assessment

Learner's Name: _____ **Date of notification:** / /

Assessor's Name: _____Tel: _____

Qualification Title: _____

The workplace assessment will be carried out on the	**For the following reason**

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following Competency Standard Units		**(tick)**	
Unit No.	**Unit Title**	**Advice**	**Completion**

Location _____ Date: / / Time: _____

Information has already been gathered from or is to be gathered from the following sources indicated below.

No	**Source of Information**		**Already Gathered (tick)**	**To be Gathered (tick**
1	**Work Activity Records** — experiences mostly relate to re-occurring workplace events.	Paper Based		
		Electronic		
2	**Technical Results** (i.e. modules) — part of the program that develops your technical knowledge and skill			
3	**Portfolio** — personal and academic detail, employment and work achievements, references and the like			
4	**Self Analysis** – provides guidance on the type of evidence required and guides reference to other information			
5	**Item Range** — list of components, tools, systems, plant, test equipment, etc on which experience is gained			
6	**Supervisor's Report** — general comments about applying technical skills, being safe and productive			
7	**Soft Skills Report** — your ability to follow instructions, deal with clients and work in teams			
8	**Questioning** — covers issues related to your performance when planning, carrying out and completing work			

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9	**Practical Demonstration** — a demonstration of your ability to perform tasks in a actual or simulated situation		
10	**Final Test** – evidence related to critical aspects of what is required by you to demonstrate competence		
11	**Other** (list)		

Note: Once all the information is collected and the data analysed the results about your progress towards or achievement of competence will be forwarded to you for your comments. If you require any additional information you should contact the assessor (above telephone number) or your nominated supervisor/mentor.

Name_____ **Signature** _____

Enclosure B2 — Application for Recognition of Prior Learning/ Current Competence

Name: _____ Date of Birth: / /

Address: _____

Telephone: _____Mobile _____e-mail_____

Recognition Sought _____

Training Package _____

Qualification No. and Title _____

Competency Standard Units (Candidate to List)

Unit Title	**Unit No.**

Evidence Provided

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Type	**Tick if Attached**
Certificates	
Curriculum Vitae	
Transcript of Academic Record – modules completed/equivalent	
References	
(other)	

Referees

Name	**Organisation and Title of Referees**	**Contact Number of Referees**

Candidate's Signature: _____ Date: / /

Enclosure B3 — Assessee Comment/Feedback

To be completed by the candidate following an assessment event.

Location: _____Date: ____/____/____Time: _____

Assessor's Name: _____

Please complete the following and return it to the Assessor.

Candidates' Name: _____

Contact N°: _____

I have read the Final Report for this assessment event and,

(**tick**)

Agree with the outcome

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or

Disagree with the outcome

Comments:

_____

_____

_____

_____

_____

_____

_____

Candidate's Signature: _____ **Date:** _____/_____/_____

Enclosure B4 — Candidate's Competency Achievement Report to RTO

This recommendation is made to (enter RTO name) _____

It is recommended that (learner's name) _____ (contact and identification details) _____
_____ be attributed competence in the following Competency Standard Units.

These units are from the Qualification (Title and No.)

_____

Unit No.	**Competency Standard Unit Title**	**Assessor's initials**

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The recommendation was made based on analysed evidence taken from the following sources	**Tick**
Work Activity Records	
Module (Learning Specification) Results	
Portfolio	
Self Analysis	
Item Range – Learner's Report	
Supervisor's Report	
Soft Skills Report	
Questioning	
Practical Demonstration	
Final Test	
Other (enter)	

Statement

The recommendation to attribute competence to the above-mentioned individual is based on the evidence requirements outlined in competency standard units from the _____ (Enter the Number and Title of the Training Package.)

Assessor's Name _____

Signature _____ **Date:** / /

1.3.19 Appendix B - Enclosure C: Glossary of Terms

Appendix B — Enclosure C: Glossary of Terms

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Definitions of all terms used in assessment design materials are below.

Term	Definition/Explanation
Appeal process	A process whereby the person being assessed or other interested party, such as an employer, may dispute the outcome of an assessment and seek reassessment.
Assessment	The process of collecting evidence and making judgements on whether competency has been achieved to confirm that an individual can perform to the standard expected in the workplace as expressed in the relevant endorsed industry/enterprise competency standards or outcomes of accredited courses.
Assessment context	The environment in which the assessment will be carried out. This will include physical and operational factors, the assessment system within which assessment is carried out, opportunities for gathering evidence in a number of situations, the purpose of the assessment, who carries out the assessment and the period of time during which it takes place.
Assessment guidelines	Assessment guidelines are the endorsed component of a Training Package which underpins assessment and which sets out the industry approach to valid, reliable, flexible and fair assessment. Assessment guidelines include the assessment system overview, assessor requirements, designing assessment resources, conducting assessment and sources of information on assessment.
Assessment judgement	Assessment judgement involves the assessor evaluating whether the evidence gathered is valid and authentic, and whether there is sufficient and reliable evidence to make the assessment decision. The assessment judgement will involve the assessor in using professional judgement in evaluating the evidence available.
Assessment materials	Assessment materials are any resources that assist in any part of the assessment process. They may include information for the candidate, assessment tools or resources for the quality assurance arrangements of the assessment system.

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Term	Definition/Explanation
Assessment plan	An assessment plan is a document developed by an assessor that includes the elements and competency standard units to be assessed, when the assessment will occur, how the assessment will occur, the assessment methods to be used and the criteria for the assessment decision.
Assessment process	The assessment process is the agreed series of steps that the candidate undertakes within the enrolment, assessment, recording and reporting cycle. The process must suit the needs of all stakeholders and be both efficient and cost-effective. The agreed assessment process is often expressed as a flow chart.
Assessment strategy	Assessment strategy means the approach to assessment and evidence gathering used by the assessor or RTO. It encompasses the assessment process, methods and assessment tools.
Assessment system	An assessment system is a controlled and ordered process designed to ensure that assessment decisions made in relation to many individuals, by many assessors, in many situations are consistent, fair, valid and reliable.
Assessment tool	An assessment tool contains both the instrument and the instructions for gathering and interpreting evidence: • Instrument[s] — the specific questions or activity developed from the selected assessment method[s] to be used for the assessment. A profile of acceptable performance and the decision making rules for the assessor may also be included. • Procedures — the information/instructions given to the candidate and/or the assessor regarding conditions under which the assessment should be conducted and recorded.
Candidate	A candidate is any person presenting for assessment. The candidate may be: • a learner undertaking training in an institutional setting • a learner/worker undertaking training in a workplace • an experienced worker wanting their skills recognised • any combination of the above.

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Term	Definition/Explanation
Competency	The specification of knowledge and skill and the application of that knowledge and skill to the standards of performance required in the workplace.
Competency standard	Competency standards define the competencies required for effective performance in the workplace. Standards are expressed in outcome terms and have a standard format comprising of Unit title, Unit descriptor, Elements of Competency, Performance Criteria, Range Statement and Evidence Guide. See also *Unit[s] of Competency*.
Competency standard unit	Also see Unit of Competency
Critical aspects of competency	A statement in a Unit of Competency that provides clear meaning as to what is to be achieved in the assessment process.
Currency of evidence	Evidence that is relevant to what is outlined in competency units and not outdated or irrelevant.
Dimensions of competency	The concept of competency includes all aspects of work performance and not only narrow task skills. The four components of competency are: • task skills • task management skills • contingency management skills • job/role environment skills.
Electronic Profiling	An innovative electronic based logbook system used by apprentices to record, and report on their workplace activities. A specially designed data entry card is used to capture work experiences (eg weekly) against industry approved competency standards and reported against industry-defined benchmarks. *See* Section 3.5 Assessment Processes within the Electrotechnology Industry and section Appendix B — Enclosure A11 Contracted entry level Profiling Model.

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Term	Definition/Explanation
Element of Competency	The basic building block of the competency standard unit. Elements describe the tasks that make up the broader function or job described by the unit.
Essential Knowledge and Associated Skills clauses	EKAS clauses provide the content specifications that must be achieved by learners in terms of the body of essential knowledge and associated skills.
Essential Knowledge and Associated Skills learning specification	EKAS learning specification is specific learning content that is complete in itself and expands on the competency standard units EKAS clauses in terms of depth and breath. It may underpin many, few or one competency standard unit(s). It covers one or more aspects of knowledge and skills. An EKAS LS can be separately delivered and assessed with percentage achievement reporting, and may be linked with other EKAS LSs for delivery purposes in the same discipline area.
Evidence/ quality evidence	Evidence is information gathered which, when matched against the performance criteria, provides proof of competency. Evidence can take many forms and be gathered from a number of sources. Assessors often categorise evidence in different ways for example: • direct, indirect and supplementary sources of evidence • evidence collected by the candidate or evidence collected by the assessor • historical and recent evidence collected by the candidate and current evidence collected by the assessor. Quality evidence is valid, authentic, sufficient and current. It enables the assessor to make the assessment judgement.
Evidence gathering techniques	Evidence gathering technique means the particular technique or method used to gather different types of evidence. This may include methods or techniques such as questioning, observation, third party reports, interviews, simulations and portfolios.
Evidence Guide	Evidence Guide is part of a competency standard unit. Its purpose is to guide assessment of the unit in the workplace and/or a training

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Term	Definition/Explanation
	environment. The Evidence Guide specifies the context of assessment, the critical aspects of evidence and the required or underpinning knowledge and skills. The Evidence Guide relates directly to the Performance Criteria and Range Statement defined in the competency standard unit.
Fairness	See section 3.4 Assessment Principles
Flexibility	See section 3.4 Assessment Principles
Holistic/ integrated assessment	An approach to assessment that covers the clustering of multiple units/elements from relevant competency standards. This approach focuses on the assessment of a 'whole of job' role or function that draws on a number of units/elements of competence. This assessment approach also integrates the assessment of the application of knowledge, technical skills, problem solving and demonstration of attitudes and ethics.
Industry Skills Council/Industry Training Advisory Bodies (ITABs)	National bodies comprising representation from the industry parties responsible for the development, review, implementation, and providing advice on qualifications scopes and competency standards in given industries.
Module	A specific learning segment that is complete in itself. It deals with one or more aspects of knowledge and skills. A module is separately delivered and assessed and may be linked with other modules in the same study area and aligned to a competency standard unit(s).
New Apprenticeship Centre	An organisation who provides information on apprenticeships, traineeships and the related qualifications and processes.
Portfolio	See section 3.5 Assessment Processes in the Electrotechnology Industry.

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Term	Definition/Explanation
Profiling	See section 3.5 Assessment Processes in the Electrotechnology Industry.
Performance Criteria	Evaluative statements which specify what is to be assessed and the required level of performance. The Performance Criteria specify the activities, skills, knowledge and understanding that provides evidence of competent performance for each Element Of Competency.
Qualification	Qualification means, in the vocational education and training sector, the formal certification, issued by a Registered Training Organisation under the Australian Qualifications Framework, that a person has achieved all the requirements for a qualification as specified in an endorsed Training Package or in an Australian Qualifications Framework accredited course where no relevant Training Package exists.
Range Statement	Part of a competency standard, which sets out a range of contexts in which performance can take place. The range helps the assessor to identify the specific industry or enterprise application of the competency standard unit.
Reasonable adjustment	The nature and range of adjustment to an assessment tool or assessment method which will ensure valid and reliable assessment decisions but also meet the characteristics and background of the person(s) being assessed.
Recognition **[Recognition of Prior Learning, Recognition of Current Competency and Skills Recognition]**	Recognition is a term that covers Recognition of Prior Learning, Recognition of Current Competency and Skills Recognition. All terms refer to recognition of competencies currently held, regardless of how, when or where the learning occurred. Under the Australian Recognition Framework, competencies may be attained in a number of ways. This includes through any combination of formal or informal training and education, work experience or general life experience. In order to grant recognition of prior learning/current competency the assessor must be confident that the candidate can present evidence that he or she is currently competent against the endorsed industry or enterprise competency standards or outcomes specified in Australian Recognition Framework

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Term	Definition/Explanation
	accredited courses. The evidence may take a variety of forms and could include certification, references from past employers, testimonials from clients and work samples. The assessor must ensure that the evidence is authentic, valid, reliable, current and sufficient.
Records of assessment	The information of assessment outcomes that is retained by the Organisation that is responsible for issuing the nationally recognised Statement of Attainment or qualification.
Registered Training Organisation (RTO)	Registered Training Organisation (RTO) means a training organisation registered in accordance with the Australian Recognition Framework, within a defined scope of registration (refer definition Scope of Registration).
Reliability	See section 3.4 Assessment Principles
Sampling	See section 3.5 Assessment Processes in the Electrotechnology Industry.
Statement of Attainment	Statement of Attainment means a record of learning, recognised under the AQF, which although falling short of an AQF qualification, may contribute towards a qualification outcome, either as attainment of competencies within a Training Package, partial completion of an AQF accredited course leading to a qualification, or completion of a nationally accredited short course which may accumulate towards a qualification through Recognition of Prior Learning processes.
Sufficiency of evidence	See section 3.4 Assessment Judgments
Training Package	Training Package means an integrated set of nationally endorsed competency standards, assessment guidelines and Australian Qualifications Framework qualifications for a specific industry, industry sector or enterprise.

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Term	Definition/Explanation
Training Agreement	An agreement outlining the training and assessment which forms part of a New Apprenticeship Training Contract and is registered with the relevant State or Territory Training Authority.
Training Plan	Training Plan means a program of training and assessment which forms part of a New Apprenticeship/traineeship Training Contract and is registered with the relevant State or Territory Training Authority.
Transcript of results — statement	List of candidate's modules/subjects/ EKAS learning specifications completed as part of a competency standard unit(s) or qualification.
Unit(s) of Competency / Competency standard units	Competency standard unit means the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance required in the workplace. Competency Standard Units define the outcomes for training delivery and assessment and lead to the issuing of Australian Qualifications Framework qualifications and Statements of Attainment. See also *Competency Standard*.
Validity	See section 3.4 Assessment Principles
Validation	Validation involves reviewing, comparing and evaluating assessment processes, tools and evidence contributing to judgements made by a range of assessors against the same standards. Validation strategies may be internal processes with stakeholder involvement or external validations with other providers and/or stakeholders.

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2.1 Preliminary Information & Glossaries

Volume 2 Part 1

Preliminary Information

This Volume (Vol 2 Part 1) contains the Definitions/Glossary of Gas Terms — a major section of the Gas Industry Training Package which is to be used in conjunction with the competency standard units. Section 7 of each competency standard unit lists a range of variables — the Range Statement. These, as well as other Gas Supply Industry terms, are explained in the Glossary of Gas Supply Industry Terms. In addition, the National Occupational Health and Safety Commission Glossary of Terms has been included. Users will find definitions here that clarify any Occupational Health and Safety specific terms. Where a term in the glossary is followed by a number, eg *Tools and equipment (2),* the number indicates the AQF level.

Volume 2, Part 2 contains competency standard units and the Essential Knowledge and Associated Skills (EKAS). Each competency standard unit has a reference to the relevant Knowledge and Associated Skills, which are detailed separately from the competency standard units. This is designed to make the package easier to interpret and apply. In the Essential Knowledge and Associated Skills section of each unit there is reference to the relevant EKAS, identified by a unique clause number and title. This separate Essential Knowledge and Associated Skills forms an integral part of each competency standard unit, and all assessment evidence activities and reporting processes are to incorporate this specification.

Training Package Layout

This revised Gas Industry Training Package has been developed, reviewed and validated through extensive industry consultation. It reflects the views of a wide cross-section of the industry and its key stakeholders/practitioners throughout Australia.

The Training Package has been constructed as a two volume set. Volume 1 covers the overall Package framework and completion requirements for qualifications. Volume 2 includes the content details of parts and sub-sections of Volume 1. The two volumes form an integrated whole and are not to be used independently of each other.

Volume 1

Preliminary Information

The Gas Industry Training Package

Current Membership of the Gas Industry Training Group

The Gas Industry

Part 1 Qualifications Framework

Part 2 Competency Standards Overview and Index

Part 3 Assessment Guidelines

Appendix A — New Apprenticeships

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Appendix B — Sample Assessment Instruments

Enclosures

- Enclosure A: List of Sample Assessment Instruments
- Enclosure B: Administrative Forms
- Enclosure C: Glossary of Terms

Volume 2

Preliminary Information

Part 1 Definitions/Glossary

Part 2 Competency Standards

2.1 Competency Standard Units

2.1.0 Independent Units

2.1.1 Cross Discipline Common Units

2.1.2 Distribution Discipline

2.1.3 Transmission Discipline

2.1.4 Cathodic Protection Discipline

2.1.5 Control Centre Discipline

2.1.6 Liquefied Petroleum Gas (LPG) Discipline

2.1.7 Support Services Discipline

2.1.8 Pressure Control Discipline

2.1.9 Imported Units

2.2 Essential Knowledge and Associated Skills

Table 1 — Knowledge and Associated Skills —Reference Codes and Reference Names

Table 2 — Essential Knowledge and Skills to Unit Matrix

Part 3 Language, Literacy and Numeracy

Volume 1: Structure and Overview

Part 1 – Qualification Framework

Part 1 outlines how the qualifications are structured, along with scope/descriptions, composition and content. Completion and issuance requirements are provided as well as advice on flexibility arrangements, with entry and exit pathways and articulation arrangements. Titles and codes of the respective list of qualifications to be issued are also included.

Part 2 – Competency Standards Overview and Index

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Part 2 outlines how the competency standards were developed (in broad terms), the industry coverage they apply to, as well as the format and construction of the individual competency standard units. The list of competency standard units and their scope/description is included in this part. Matters related to language, literacy and numeracy, access, equity and cultural diversity, and any regulatory arrangements, for which the competency standard units may apply is also included. Importantly, each Unit is interrelated and linked with the Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Volume. No competency standard unit is to be used in isolation or exported without these interrelated components.

There are over 125 competency standard units included in Volume 2, each listed according to its respective industry discipline area.

Alignment to and incorporation of Competency Standards Units from the allied Transmission, Distribution and Rail Training Package are also included as are relationships between competency standard unit(s) and the key competencies and skills for employers.

Part 3 – Assessment Guidelines

Information in Part 3 outlines how the assessment guidelines inform a Registered Training Organisation (RTO) about the infrastructure requirements to enable them to carry out training delivery assessment activities related to the Training Package. It includes such things as assessment systems, the role of RTOs, assessment pathways, recognition arrangements, assessor qualifications and sources of information.

Included also are two Appendices — Appendix A: New Apprenticeships Application and Appendix B: Sample Assessment Instruments. Appendix B contains Enclosures A, B and C: A — a List of Sample Assessment Instruments, B — Administrative Forms and C — the Glossary of Terms.

Volume 2: Competency Standard Units — Content and scope

Volume 2 Part 1 contains a Definitions/Glossary, which provides a description/explanation of certain/assigned words that appear in this document.

Volume 2 Part 2 contains the competency standard units in their respective disciplines, eg Transmission Units, Distribution Units, Operation Units, Cathodic Protection Units.

Volume 2 Part 2 also contains the details of Essential Knowledge and Associated Skills referred to in each Competency Standard Unit.

Volume 2 Part 3 provided information on the application of Language Literacy and Numeracy aspects identified with each Competency Standard Unit.

Note: The two volumes form an integrated whole and must not be used independently of each other.

1.0 Definitions/Glossary

1.1 Scope

The competency standard unit described in this Part of the Training Package covers competency standard units for the Gas Industry.

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1.2 Application

The information contained in each competency standard unit includes the intended use of the unit for assessment and a training program(s).

1.3 References

Regulations

The work functions described by competency standard units in this Training Package may be subject to statutory regulations. Where this is the case the particular regulations will depend on local jurisdictions and knowledge and application of such regulations within the scope of the unit will be an aspect of evidence in deeming a person competent.

Reference documents

Each part of the Training Package will include a list of reference documents. These are a component of competency which assist in developing training programs and assessing competency. Reference documents include relevant legislation, regulation, industrial instruments, codes of practice, guidelines and advisory standards and policies.

Examples may include industry-preferred training and assessment models, anti-discrimination and equal employment opportunity statutes encompassing application of access, equity and cultural diversity principles associated with under-represented groups.

1.4 Definitions/Glossary

The definition of terms used in this Part of the Training Package form an integral part of the overall competency standard units and they must be used with Volume 2, Part 2.

Definitions of Gas Industry Terms

Term	**Definition/Explanation**
Abnormalities	To confirm any abnormal condition of an item whether or not this could eventually result in a failure.
Accessory	A component of a pipeline other than pipe, valve or fitting, but including a relief device, pressure containing item, hanger, support and every other item necessary to make the pipeline operable.

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Term	Definition/Explanation
Acquisition and allocation of resources	Identified priorities, suitability, type of physical resource, urgency, cost of use, accessibility, endurance, maintenance demands, deployment time, customer needs, hazard and risk analysis.
Activities	May include product receipt, processing and/or dispatch; rectification of gas system faults; scheduling of maintenance, repairs and/or modifications; commissioning of new plant and/or equipment; standard operating and quality assurance procedures; stock control.
Analyse	To examine and investigate data / information.
Applicable Australian Standards/Legislation	Relevant to CP System may include OHS legislation; utility codes and standards; safe working procedures and practices; AS 2885; AS 2430 — hazardous areas; AS 1768; AS 1596; AS 1697; AS 2832.1; AS 3000; AS 2239; AG 603.
Appropriate and relevant persons	Organisation employees, contractors, consultants, maintenance persons, appropriately experienced and qualified persons, drivers, cleaners, grounds and site security persons, other managers, other supervisors, inter-company departments, other utilities, council representatives, producers, transporters/shippers, consultants, government bodies/agencies, refinery persons, customers, land owners.
Appropriate authorities	May include local councils; road authority; sewage and stormwater authorities; providers of service such as electricity, water and telephones.

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Term	Definition/Explanation
Appropriate parts	To be replaced may include excess flow valves; relief valves; pressure regulators/springs; pump seals/compressor seals; pressure gauges; bypass valves; meters; solenoids; valves; break away couplings; meter heads.
Appropriate persons (1)	May include site manager; maintenance persons; shift supervisor.
Appropriate persons (2)	May include site manager; maintenance persons; shift supervisor. For LPG it could also include site manager; clerical persons; supervisors; other road tanker operators.
Appropriate persons (3)	May include site manager; maintenance persons; project manager; engineers and technical officers; security persons; maintenance persons; contractors; company persons; other persons designated by the organisation.
Appropriate persons (5)	May include appropriately experienced and qualified persons; company employees; contractors; drivers; maintenance persons; cleaners, ground and site security persons.
Appropriate persons (6)	Organisation employees; maintenance persons; appropriately experienced and qualified persons; site security persons, contractors and their employees, inspectors and regulatory authority representatives.
Areas of responsibility	Includes emergency management; resource management; field response; communications; media liaison; emergency

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Term	Definition/Explanation
	services liaison, asset owners and relevant stakeholders; security supply; product containment; product specification; public safety; exclusion zones; business continuity; reporting and logging documentation.
Areas to be monitored	Includes gas infrastructure, site security, rate of change, supply and demand line pack response, communication and data transfer, process values and constraints (gas quality, pressure and temperature), field work activities, third party activities, permit systems, location of field staff, gas flows, information gathering systems, job and equipment status including tagging and equipment out of service.
Areas to be controlled	Includes gas infrastructure, site security, rate of change, supply and demand line pack response, communication and data transfer, process values and constraints (gas quality, pressure and temperature), field work activities, third party activities, permit systems, location of field staff, gas flows, information gathering systems, job and equipment status including tagging and equipment out of service.
Ariel	Includes helicopter, fixed wing.
Ariel hazards	Includes weather, birds, other aircraft and power lines.
Aspects to consider when sequencing a route	When sequencing a route for an individual include distance; weather conditions; terrain; time available; urban/rural area; experience of meter reader.

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Term	Definition/Explanation
AQF	Australian Qualifications Framework which describes qualifications in terms of levels characterised by the outcomes of vocational education and training.
Assemble	To take raw stock and make detailed parts by a variety of methods, such as cutting, bending, attaching, etc. It may be applied to metal and composite structures, electrical parts etc.
Assessing risk	Determining the likelihood and severity of adverse consequences from hazards; Occupational Health and Safety audits; workplace inspections; maintenance of plant and equipment; purchasing of materials and equipment; planning or implementing alterations to site, operations or work systems; and analysis of relevant records and reports, for example, injuries and incidents, hazardous substances inventories/registers, audit and environmental monitoring reports and Occupational Health and Safety committee records. Includes hazard and incident reports; workplace inspection in area of responsibility; consulting work team members; housekeeping; workplace inspections; daily informal team consultation and regular formal team meetings; internal and external audits; industry information such as journal, newsletters and networking.
Assessment	Refers to the process of collecting evidence and making judgements on the extent and nature of progress towards the performance requirements set out in a standard and at the appropriate point making the judgement whether competency has been achieved.

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Term	Definition/Explanation
Authorisation	Responsibility assigned for the application of relevant management practices to approve measures according to company policies, procedures and processes, legislative and/or regulatory requirements.
Authoritative sources	Includes industry associations; industry reports; industry journals and publications; statutory authorities; legislative and regulatory requirements.
Backfill	Includes sand padding; spoil; stone free soil; crushed rock; rubble.
Budget	Capital expenditure, recurrent expenditure, output investment proposals, cash flow. Also includes costs for labour, materials, training, services, tools and equipment.
Budget formats	Zero based budgeting, program budgeting, line item budgeting.
Civil activities	Includes laying of geotextile; gabion baskets; concreting; reseeding of environment; cased crossings; fauna and flora control.
Coating defect assessment surveys	For identifying condition and location of irregularities. May include DCVG method; person technique method.
Coatings	Includes heat shrink sleeves; wrapping tapes; epoxy paints; coating patches.

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Term	Definition/Explanation
Commonwealth and State OHS requirements	Includes general duty of care requirements; Privacy Act in relation to requirements for the maintenance and confidentiality of records of occupational injury and disease; provision of information; relevant requirements of Environmental Protection Authority.
Communication or communication strategy	Liaison with customers, staff and other stakeholders and clients; verbal directions; relevant documentation; project records/reports, electronic communications, Internet communication.
Community awareness	Inform people and organisations that could in anyway be affected by transmission pipeline anomalies, ie those residing, commerce or working near such. Promote community awareness of gas leak identification and safe practices associated with activities on or near transmission pipelines, including promoting use of Dial Before You Dig. Promote emergency response procedures for gas leak identification and safe practices associated with activities on or near transmission pipelines to emergency service agency personnel.
Competency	Focuses on what is expected of a worker/employee in the workplace rather than on the learning process, and embodies the ability to transfer and apply skills, knowledge and attitude to new situations and environments.
Competency Standard Unit(s) also refers to Unit(s) of competency	Competency standards are made up of a number of Competency Standard Units.

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Term	Definition/Explanation
	These units describe a key function or role in a particular job function or occupation. Each unit identifies a discrete workplace requirement and includes the knowledge and skills that underpin competency, as well as language, literacy and numeracy and Occupational Health and Safety requirements. A competency standard unit is usually linked to one or more AQF qualifications.
Components and system	May include solar powered power generation systems; 240 volt power generation systems; insulation and monolithic joints; galvanic anode beds; battery banks — nicad and lead acid; transformer rectifiers and CPUs; lightning protection equipment; CP test points; Kirk cells.
Contingency plans	Emergency responses to a range of abnormal operating conditions; plans for responses to critical incidents; prioritise proposed responses.
Contributions to OHS	Includes listening to the ideas and opinions of others in the team; sharing opinions, views, knowledge and skills; identifying and reporting risks and hazards; using equipment according to guidelines and operating manuals; behaviour that contributes to a safe working environment which includes following OHS procedures.
Controlling risks **See also OHS Glossary — Controls and Control Measures**	Assessing the Occupational Health and Safety consequences of materials, plant or equipment prior to purchase; obtaining expert advice; appropriate application of measures according to the hierarchy of control, namely:

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Term	Definition/Explanation
	• elimination of the risk • engineering controls • administrative controls • personal protective equipment • designing safe operations and systems of work • inclusion of new Occupational Health and Safety information into procedures • checking enterprise compliance with regulatory requirements.
Control measures **See also OHS Glossary — Controls and Control Measures**	May include elimination of hazards, work procedures, standard operating procedures, personal protective equipment, fire safety, plant and equipment isolation, training of appropriate persons, communications with appropriate persons, supervision of appropriate persons, maintenance of control measures.
Damage or faults	To meters may include unreadable meters; incorrect meter locations; suspected tampering with the meter; suspected illegal connections.
Damage to cylinders	Includes valve spindle leaks; safety valve leak; corrosion; unacceptable paintwork; fire/heat damage; valve to cylinder connection leak; base/bosy damage leak; out-of-date; physical defects.
Data acquisition may include	Temperature, pressure and flow rates from regulator or custody transfer stations, water bath heater operation (water temperature, pilot light and main burner operation), faulty equipment (over pressure and under pressure, slamshut operation and filter problems), pipeline ruptures, security system monitoring and pressure and volume data for "balancing the system".

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Term	Definition/Explanation
Defect	Any confirmed abnormal condition of an item whether or not this could eventually result in a failure.
Delivery area	An area to be checked for ignition sources and other hazards. Area to be appropriately designated. Smoking is not allowed.
Designated persons for OHS	Include employers; chair of OHS committee; OHS nominee; elected OHS representative/employee representative. Supervisors; managers; team leaders; management Occupational Health and Safety persons; and Other persons authorised or nominated by the enterprise or industry to: perform specified work, approve specified work, inspect specified work, and direct specified work.
Diagnostic, testing and restoration	Diagnostic, testing and restoration may involve: appropriate documentation relating to the protection device; voltage, current and resistance measuring instruments; microprocessor based diagnostic test equipment; laptop computer and diagnostic software; loop control test instruments.
Documentation (2)	Related to tasks includes time sheets; requisitions; work sheet/job cards; organisational forms/electronic templates.
Documentation (3)	May include standard operating procedures; OHS and environmental

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Term	Definition/Explanation
	legislative requirements; manufacturer's specifications; Australian Standards; maintenance records; standard operating procedures; OHS and environmental legislative requirements; manufacturers' specifications; codes.
Documentation (5)	Includes coordinated maintenance plans and/or strategies, maintenance scheduling documents, budgets, reports, submissions, cost benefit risk assessments and work plans and/or other developments
Downstream	With or in the direction of the current or flow of a stream, i.e. farther down a stream. For example, the meter for a home or business is downstream from the city gate.
Drawings and specifications	May include instrument electrical drawings; circuit diagrams; component charts; wiring diagrams; site layout drawings.
Easement	Environmental surroundings of the pipeline.
Effective communication (5)	May include verbal directions; relevant documentation; activity records/reports; emergency response systems and procedures.
Effective communication (6)	Verbal directions; relevant documentation; project records/reports, presentations and meetings.
	May include solar powered power

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Term	Definition/Explanation
Electrical equipment	generation systems; 240 volt power generation systems; insulation and monolithic joints; galvanic anode beds; battery banks — nicad and lead acid; transformer rectifiers and CPUs; lightning protection equipment; CP test points; Kirk cells.
Electrical and instrumentation equipment powered by extra low voltage	Includes: communications systems; telemetry; battery banks and charges; valve control systems; regulators; ESD systems; 24 volt lighting; control panels; fire and gas detection systems; solar panels; transmitters; gas quality analysis equipment; PLCs; RTUs; process control equipment; compressor control systems; gas metering equipment; DC motors.
Electrical test equipment	Meggers; digital volt meters; deadweight testers; computers; infared temperature probes; manometer; process calibrators; RTDs; frequency generation, oscilloscope.
Emergency and/or hazardous work situations **See also OHS — Emergency**	May include fire; gas leak or vapour emission; utilities failure; failure to supply; environmental damage; injury or death; significant threat to gas infrastructure.
Emergency appliances **See also OHS Glossary — Emergency**	May include emergency trucks/trailers; emergency plant (compressors, cranes, welding equipment etc); breathing apparatus; fire fighting equipment.
Emergency exercises	May include emergency trucks/trailers; emergency exercises (involving fire; explosion; vapour/liquid leak); excavation/ruptured pipeline; LPG road/rail accidents; loss of supply), testing of contingency plans.

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Term	Definition/Explanation
Emergency response manual	Operations manual utilised by staff in attending and addressing Gas Industry emergencies.
Emergency responses	Include gas leaks and fire; equipment failure; hazards and incidents.
Environment	The area surrounding the work site which can be directly or indirectly affected by occurrences at the work site. Includes the atmosphere, soils, drains, underground water tables and ecosystem. Protection of the environment requires proper disposal of waste materials, restriction of burning off, correct handling of toxic substances, containment of CFCs and the like. The protection of the environment would also include the minimisation of those factors that contribute directly, or indirectly to the production of greenhouse gases. These contributing factors might include the minimisation of waste materials, the correct use of enterprise vehicles and machinery, the re-use or recycling of trade materials where possible and the overall reduction of energy usage through general awareness and the use of appropriate technologies.
Environmental and Sustainable Energy Procedures	Environmental and sustainable energy procedures as laid out in the appropriate environmental legislation and may include relevant Federal legislation; relevant State/Territory legislation; relevant local government by-laws; relevant government or quasi government policies and regulations; relevant community planning and development agreements (eg. Land

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Term	Definition/Explanation
	care agreements) Sustainable energy practice refers to workplace actions that contribute to the reduction of greenhouse gases. Sustainable Energy Practice is closely related to the 'environment'. Sustainable energy practice aims to reduce the amount of wastage in electricity and other forms of energy that lead to the production of greenhouse gases. Many of the principles and practices that apply in the workplace also apply in the home and the general environment. Environmental sustainable procedures include: examining work practices that may use excessive electrical energy; reducing energy by using energy efficient machines and appliances (eg. Star ratings); switching off devices such as lights, machines and computers when not in use; using power-save devices, such as those incorporated in photocopiers, business machines and the like; replacing incandescent lamps with compact fluorescent lamps; using natural light to replace artificial light; regularly cleaning air conditioner filters; closing windows and doors when climate control units are used; insulating dwellings, offices and workplaces and preventing draughts; using reflective curtains to control heat; using natural or artificial shade to control sunlight; using solar water heating; using automatic processes to manage energy usage; reusing materials used in construction, engineering and manufacturing; recycling waste materials; driving motor vehicles and other machines with care; using natural gas for heating rather than oil or coal based fuels; using devices to reduce water usage; checking for leakage in hot water system pressure relief valves and elsewhere in plumbing systems; sharing information about energy conservation with other workers.

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Term	Definition/Explanation
Environmental features	Include, but are not limited to, fauna/flora habitats; indigenous cultural features; indigenous and non indigenous heritage features; water catchments.
Environmental hazards	Hazards associated with LPG or natural gas, geological features, soil types, neighbouring plants, residential areas, separation distances and emission and contamination hazards.
Environmental issues	Political, legal, community and aesthetic impact of installations.
Equipment (2)	Includes cylinder trolley; hose/tools; leak detection devices; gauges; spindles; tanks, valves and fittings; seals and gaskets; pump and drive shaft; meters; emergency equipment; pipes; pneumatic/electronic control equipment; gauges; hoses and connections including hose protection systems; earthing straps; personal protective clothing; hydraulic equipment.
Equipment (pigging)	Equipment required for ‘pigging’ operation may include valves; PIG launcher; PIG receiver; tracking equipment; pipeline locater; technical drawings; hand tools; crane; PIG signals; pilot tube; PPE; fire extinguisher; time piece.
Equipment (inspected)	Inspected and tested may include valves, actuators and flanges; heaters and heat exchanges; station power supplies; metering equipment; process control equipment; gas analysis equipment; piping systems; sumps and drains; pressure

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Term	Definition/Explanation
	vessels/filtration equipment.
Equipment (3)	May include pumps and compressors; pipes; hoses; valves; gauges; tank connections and fittings; personal protective equipment and clothing; articulated arms and earthing clamps and connections.
Equipment maintenance and fault repair	Includes: cabling faults; earth faults; instrumentation failure; instrument calibration; intermittent faults; equipment installation and replacement; troubleshooting of process control systems; approved software modifications and upgrades; commissioning.
Essential knowledge and associated skills (EKAS) learning specification (LS)	Provide specific advice in facilitating consistency and reliability in resource development and delivery. The learning specifications are premised on the separate content of the essential knowledge and associated skills referred to in each competency standard unit. The specifications are designed to: • provide the depth and breadth of essential knowledge and associated skills to be learned • ensure they support the needs of the workplace • contain assessment strategies, including a table of specifications, to increase validity, reliability and fairness • detail the resources required for satisfactory delivery in the learning environment • provide clarification regarding the type and quantity of evidence needed for assessment purposes • support a variety of delivery modes, eg face-to-face, distance, computer assisted learning or other

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Term	Definition/Explanation
	• provide content and structure that maximizes learning retention • provide a clear purpose statement about their relationship to the overall educational program
Established procedures and requirements **See also Standard operating procedures and Approved procedures**	Include any company procedures; manufacturers' manual/specifications; quality assurance procedures; technical standards; work instructions; standard operating procedures; OHS and emergency response and evacuation procedures.
Event	Includes gas/product leaks, odourant leaks, incorrect valve positions, electrical/instrumentation problems, compressor or pump failures, communication failures, abnormal process conditions, security alarms, third party complaints.
Excavation	May occur in a variety of conditions including varying surface types such as open ground (lawn/garden) bitumen or concrete; wet/dry conditions; in a variety of traffic levels such as road or rail; in differing soil types such as rock, clay or sand; day or night; city or rural areas.
Excavation tools	Includes hand tools; backhoe; jack hammer; trenching machine; boring equipment; compacting equipment.
Exceptions and conditions	May include long term bill accounts (12 months); meter changes; manual bills; daily accounts; active and inactive accounts; gas used on an inactive account, ie vacant premises; meter reader is unable to find the meter; missing meter/records;

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Term	Definition/Explanation
	unknown consumer investigations; vacant premises investigations; meter relocations.
Expected lifetime of equipment	The life cycle of equipment is determined by factors such as the organisation's corporate and strategic plans, the organisation's financial and other resource management guidelines, government policy, the capacity of equipment to perform to operational requirements.
External interference	External interference threats to the transmission pipelines, easements and/or surrounding environs – environmental damage, erosion, land slip, subsidence, fire, gas leak, dead vegetation, exposed pipe, earth moving activities, earthquake, military, fallen marker signs, compromised security and vandalism, and unauthorised land development.
Facilities and equipment/station	To be repaired may include valves, actuators and flanges; heaters and heat exchanges; station power supplies; metering equipment; process control equipment; gas analysis equipment; piping systems; sumps and drains; pressure vessels/filtration equipment; prime movers; pumping systems and equipment; compression systems and equipment.
Fault find	Identifying problems including functional faults.
Faults	Includes water leaks; oil leaks; damaged hoses; gas leaks; valves not operating; air leaks; electric control cable damage.

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Term	Definition/Explanation
Financial reports	Annual reports, program financial statements, accrual reports, monthly/quarterly financial reports.
Fitting	A component, including associated flanges, bolts and gaskets used to join pipes, to change the direction or diameter of a pipeline, to provide a branch, or to terminate a pipeline.
Gas characteristics	Could include temperature, chemical composition, pressures and pressure reduction, reverse quantities and LPG evaporation rates.
Gas chromatography	Is the separation and measurement of the multiple components that make up natural gas, or any other product being measured with an appropriate chromatograph.
Gas infrastructure	Includes pipes, valves, scraper stations, compresors, regulators, communications equipment, heat exchanges, stations instrumentation equipment, condition monitoring equipment, process control equipment, gas measurement equipment, gas quality and analysis equipment, cathodic protection equipment, pressure vessels, data transfer equipment.
Gas systems could include	Either LPG or natural gas systems may dominate, however it is expected that systems will be selected across both, and include transmission and distribution pipelines, LPG storage facilities greater than 50kL, underground storage, tankers and ships, control systems, custody transfer stations, odorising plant, corrosion control, interconnecting systems.

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Term	Definition/Explanation
Gas systems may include but are not limited to	Custody transfer stations, tanker transfer, decantation, tempered liquid petroleum systems, field or district regulators, LPG systems, meters and regulators, transmission and distribution systems.
Gas systems	Natural gas transmission, distribution and storage; liquefied petroleum gas tanker and ship transport, storage and processing terminals and distribution systems.
Hand tools	Includes, but not limited to, adjustable spanners; crow bars and pinch bars; bolt cutters; brooms; chisels; hacksaws; hammers; measuring tapes; nips; picks and mattocks; pliers; sealant guns; shovels and spades; sledge hammers; spanners and wrenches; spirit levels; string lines; trowels and floats; wire cutters; screw drivers; tube squeezers and blenders.
Hazardous materials	Materials that could cause serious illness or injury.
Hazards (5) **See also OHS Glossary — Hazard**	Something with the potential to cause injury and disease to persons, property or disruption to productivity. Hazards arise from workplace environment; use of equipment; poor work design; inappropriate systems, procedures and or human behaviour. May include confined spaces, electricity, gas, manual handling, noise, plant and equipment, infected blood, chemicals, temperature extremes, lightning and radiation.

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Term	Definition/Explanation
	Making inventories of and inspecting high risk operations; and inspecting systems and operations associated with potentially hazardous events, for example, emergency communications, links to emergency services, fire fighting, chemical spill containment, bomb alerts and First Aid services.
Hazards (6) **See also OHS Glossary — Hazards**	Confined spaces, gas, electricity, manual handling, noise, plant and equipment, infected blood, chemicals, temperature, lighting, radiation.
Identifying hazards **See also OHS Glossary — Hazard Identification**	Workplace inspections, including plant and equipment; audits; maintaining and analysing Occupational Health and Safety records, including environmental monitoring and health surveillance reports; maintenance of plant and equipment; reviews of materials and equipment purchases, including manufacturers and suppliers information; and employee reporting of Occupational Health and Safety issues.
Implement	To carry out or put in place a new requirement.
Incident	An event that has caused or has the potential for injury, ill health or damage to community, employees, environment, assets. (‘Incident’ is the preferred term rather than ‘accident’)
Industry products and services	Includes organisational products; companies emerging products and services;

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Term	Definition/Explanation
	historical products and services.
Information	On the account includes identification number; meter number; property number; position of meter; street name.
Information systems	Includes Supervisory Control And Data Acquisition (SCADA), Global Position System (GPS), Geographic Information System (GIS), maintenance management system, outage management systems, incident management systems, document management and information systems, proprietary information systems.
Inspect	To examine or check a system, assembly, component or part by visual or physical means, for the purpose of identifying defects or limits.
Inspection and testing (2)	Detailed in the National Road Transport Standard TDTC407A and TDTC597A.
Inspection and testing techniques (3)	May include hydrostatic testing; magnetic particle inspection; radiography; ultrasonic inspection; dye penetrant inspection; gas leakage detection equipment.
Inspection checks	Are made to determine test date on cylinder is within the required period; organisation’s ownership; corrosion and impact damage; valve threads are clean and in good condition; safety relief valve is capped and free from obstruction; internal deposits.
	Flow control equipment, pressure and

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Term	Definition/Explanation
Instrument and control system	temperature transmitters and transducers, telemetry equipment, gas chromatographs, moisture analysers, gas sampling equipment, PLCs.
Integrity testing (the testing of integrity)	To ensure the system conforms to required operating parameters.
Interpersonal skills	Includes the use of appropriate body language; summarising and paraphrasing to check understanding; providing opportunities for the client to confirm their request; questioning to clarify and confirm the client's needs; listening actively to what the client is communicating.
Investigating billing exceptions	Conditions may involve field calls undertaken to determine owner/occupiers' of properties; dates of entry of owner/occupier; meter reading and billing purposes; meter identification details; other relevant information such as forwarding address, payment arrangement.
Key features of plans and elevations	Involves the type of structure; shape of structure/building; service requirements; location of plant/equipment; vertical and horizontal measurements; clearance distance; geological features; service layouts and bore/casing details.
Leaks	May be classified into Class 1 — repair until completed; Class 2 — repair within 7 days; Class 3 — monitor, repair not economic; Class 4 — no leak found.
Learning Specification (LS)	See Essential knowledge and associated skills (EKAS) learning specification (LS)

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Term	Definition/Explanation
Legislation **See also OHS Glossary — Legislation relevant to OHS**	Includes relevant sections of Federal and State OHS and Environmental Protection Acts.
Legislative and company requirements **See also OHS Glossary — Legislation relevant to OHS**	Occupational Health and Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements, company standard operating procedures and authorisation requirements and technical standards requirements
Legislative compliance **See also OHS Glossary — Legislation relevant to OHS**	Occupational Health and Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements.
Legislative requirements (2) **See also OHS Glossary — Legislation relevant to OHS**	Includes OHS; environmental; traffic control and are also set out in AS 1596, AS 2030 and AS 3509.
Legislative requirements (3) **See also OHS Glossary — Legislation relevant to OHS**	As set out in AS 1596.
Legislative requirements (5) **See also OHS Glossary — Legislation relevant to OHS**	May include Occupational Health and Safety legislation; government acts and regulations; Australian Standards and Codes of Practice; environmental legislative requirements. May also include; State or Territory gas and petroleum acts and regulations; workers compensation legislation; employee code of conduct; anti

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Term	Definition/Explanation
	discrimination legislation; equal employment opportunity legislation; disability legislation; trade practices legislation; native title legislation; related regulations; common law.
Liaison with customers	In person or by telephone; fax; letter; Internet.
Loading and discharging LPG	Factors which need to be taken into account when loading and discharging LPG includes curfews; number of customers; volume of LPG to be delivered; duration of shift; distance to be travelled; equipment type; Australian Dangerous Goods Code; site access; weather conditions; delivery area is checked for ignition sources and other hazards; local environment, according to standard operating procedures.
Loading and unloading of cylinders	Is undertaken in both the terminal and customer's location, includes exchanging cylinders, according to standard operating procedures.
Location	For maintaining CP systems may be urban, country or remote. Third party monitoring.
Location for maintaining CP systems	May be urban, country or remote. Monitor third party activities and installations.
LPG transfer	Is transferred by either pump or compressor to either LPG tanks or to cylinders.
	That maintenance is performed at defined

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Term	Definition/Explanation
Maintenance schedules/servicing	intervals to retain a system, component or part in a serviceable condition by systematic inspection, detection, replacement of worn-out items, adjustment, calibration or cleaning, etc.
Management information systems	Computers, communication channels, records management data, procedures, protocol, legislation, guidelines and awards, organisation, legal and policy materials, client information, market trends, registry and file records, library, financial records, basic statistical information, persons.
Maps and drawings	Maps include topographical maps; alignment sheets and plans; pipeline maps; city and town maps; regional/location maps; road maps. Drawings include instrument electrical drawings; circuit diagrams; component charts; wiring diagrams; site layout drawings.
Materials (2)	Includes liquid withdrawal valves; vapour service valves; relief valves; contents gauges; in situ valves; multiport valves; sullage tubes.
Materials (3)	Required for pipeline installation may include various pipes (eg PVC, nylon, PE, cast iron); fittings; coating material; bedding materials; detecta tape; trace wire; meters; valves; filters; regulators.
Measurement principles	Is the understanding of the various systems, technologies and associated components which are used to measure a product. These principles include an understanding of chemistry, physics associated with the medium which you are wanting to measure. A good understanding of electronics is required.

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Term	Definition/Explanation
Methods	Used to record meter readings may include meter reading cards; meter reading sheets; electronic reading devices such as Portable Data Entry Terminal (PDET).
Minor mechanical maintenance	Is limited to visual inspection; lubrication; gland nipping; draining of water taps; degreasing; replacing readily accessible gaskets; limited mechanical re-assembly.
Modification	Where a change or update is made.
Monitoring **See also OHS — Monitoring**	Of pipeline systems may include fire and gas extinguishing and deluge systems; emergency systems; alarm and communication systems; SCADA; prime movers and compression systems; shutdown systems.
Monitoring of storage facilities **See also OHS — Monitoring**	May include monitoring, pressure; temperature; levels; corrosion; gas leaks; stock levels; pressures; security; temperature; water sprays; shutdown system.
MSDS **See also OHS — Material Safety Data Sheet (MSDS)**	Material Safety Data Sheets Information and handling of chemicals/flammable liquids are involved.
Necessary materials	May include gas detectors; purging gas; hand tools; LPG hoses; flare; valves; compressor; vessels; pump; personal protective equipment and clothing; road tanker; control and instrumentation equipment.

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Term	Definition/Explanation
Negotiating skills	Utilise a range of influencing techniques to gain a positive result in achieving and maintaining the integrity of the transmission pipeline. Negotiations are held with relevant: • land owners • councils • utilities including telecommunications • earth moving contractors • cultural, heritage parks, lands and buildings • native title • national parks • government agencies • general contractors and/or organisations • personnel • internal and external clients and other related parties
New or changed information	Includes special customer requirements; addition of new meters; deletion of meter when necessary; changes to meter numbers; changes to property information; change in location of meter.
Nominated person(s)	Includes persons with the relevant knowledge and authority to exercise the responsibility
OHS	See OHS Glossary
OHS information to co-workers including training **See also OHS Glossary — inspection;**	Arrangements for ongoing assessment of training needs, for example, relating to: • supervisors and managers, specific

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Term	Definition/Explanation
specialists; management system (OHSMS); action plans; audit; records; reporting requirements; responsibilities; plan; systematic approach to managing OHS	hazards, specific tasks or equipment, emergencies and evacuations • training required under Occupational Health and Safety legislation; • allocation of resources for Occupational Health and Safety training, including acquisition of training resources, development of staff training skills and purchase of training services • induction training • training for new operations, materials or equipment.
OHS issues	These could be raised by workers or designated persons and include hazards identified; problems encountered in managing risks associated with hazards; clarification on understanding of OHS policies and procedures; communication and consultation processes; follow up to reports and feedback; effectiveness of risk controls; training needs. Issues can also be raised at Occupational Health and Safety committees and other committees, for example, consultative, planning and purchasing; health and safety representatives; employee and supervisor involvement in Occupational Health and Safety management activities, for example, Occupational Health and Safety inspections, audits, environmental monitoring, risk assessment and risk control; procedures for reporting hazards, risks and Occupational Health and Safety issues by managers and employees; and inclusion of Occupational Health and Safety in consultative or other meetings and processes.
OHS legislative arrangements	The legislative requirements for OHS vary

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Term	Definition/Explanation
	across different states and the requirements of the particular state should be reflected in the training and assessing of the competency standard. The particular differences could relate to consultation, participation and incident reporting. Commonwealth, State and Territory OHS Acts, regulations, codes of practices and standards including regulations and codes of practice relating to hazards present in the workplace or industry. General duty of care under OHS legislation and common law Requirements for the maintenance and confidentiality of records of occupational injury and disease; Requirements for the provision of OHS information and training; Provisions relating to health and safety representatives and or OHS committees Provisions relating to OHS issue resolution
OHS management system	That part of the overall management system that manages the risks associated with the business of an organisation — usually includes organisational structures, policies, planning activities, procedures, processes and human, technical and financial resources. OHS system evaluation involves: • reviewing the effectiveness of the Occupational Health and Safety management system • regular review of operating procedures • regular analysis of Occupational Health and Safety records • audits against Occupational Health and Safety legislative requirements.
OHS policies and procedures	Include policies and procedures to be

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Term	Definition/Explanation
	followed to ensure a safe working environment. These include company standards, advisory codes of practice and any other instructions such as MSDS. Personal safety principles; workplace hazards — safety checks within the workplace; identification of potential workplace hazards; working with electrically operated tools and equipment nature of electric shock; causes of electrical accidents; First Aid; emergency/evacuation procedures.
OHS requirements	Are to be in accordance with state/territory legislative regulations which includes workshops/worksite safety practices; control of noise and dust; use of ladders and working platforms; control of exhaust emission; isolation of work areas; confined pace equipment and procedures; manual handling techniques; environmental requirements.
OHS safety records	Identifying records required under Occupational Health and Safety legislation, for example: • worker's compensation and rehabilitation records, hazardous substances registers, Material Safety Data Sheets (MSDS), major accident/injury notifications, and certificates and licences • manufacturer's and supplier's Occupational Health and Safety information • Occupational Health and Safety audits and inspection reports • maintenance and testing reports • workplace environmental monitoring and health surveillance records • records of instruction and training • First Aid/medical post records.

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Term	Definition/Explanation
Operating budget	Staffing costs, capital expenditure/income, recurrent expenditure/income, forward estimates, cash flow.
Operational	Variations, unexpected events may include emergencies including gas leaks and fire; equipment failure; hazards and incidents; mandatory or statutory inspections; scheduled maintenance activities; electrical power failure.
Operational requirements (5)	May include product levels; product blending/mixing/odourising; manufacturers' maintenance requirements; rectification of gas system faults.
Organisational policy and procedures	These may vary between sectors and organizations. They include legislation relevant to the management of physical resources, legislation relevant to the organisation, operational, corporate, strategic plans, organisational performance standards, organisational persons practices and guidelines, organisational quality standards, government policies, Standard Operating Procedures, Australian/New Zealand Standards, ISO Standards.
Organisational procedure for managing risks including an OHS framework	Hazard management policies and procedures; hazard management documents including policies and procedures on specific hazards as well as hazard and incident reporting and investigation, workplace inspections and maintenance; communication, consultation and issue resolution procedures; human resources management procedures such as grievance procedures, induction programs, team meetings, management of

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Term	Definition/Explanation
	performance levels; standard operating procedures and work instructions; post injury management such as first aid, critical incident debriefing, compensation and return to work; other related procedures including waste management and security. It also includes policy development and updating; determining the ways in which Occupational Health and Safety will be managed. This may include distinct Occupational Health and Safety management activities, or inclusion of Occupational Health and Safety functions within a range of management functions and operations such as maintenance of plant and equipment, purchasing of materials and equipment, designing operations, work flow and materials handling, and planning or implementing alterations to site, plant, operations or work systems; mechanisms for review and allocation of human, technical and financial resources needed to manage Occupational Health and Safety, including defining and allocating Occupational Health and Safety responsibilities for all relevant positions; mechanisms for keeping up to date with relevant information and updating the management arrangements for Occupational Health and Safety, for example, information on health effects of hazards, technical developments in risk control and environmental monitoring and changes to legislation; mechanisms to assess and update Occupational Health and Safety management arrangements relevant to legislative requirements; and a system for communicating Occupational Health and Safety information to employees, supervisors and managers within the enterprise.

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Term	Definition/Explanation
Organisational requirements (4)	Include organisational goals, objectives, plans, systems and processes; business plans, mission statements; Occupational Health and Safety policies, procedures and programs; legal and organisational policy/guidelines and requirements; quality and continuous improvement processes and standards; confidentiality and security requirements; ethical standards; filing and documentation storage processes; work method statements; standard operating procedures; relevant environmental and cultural sensitivity legislation, regulations, policies and procedures.
Orientation of the site	Includes relationship to 'north'; currency of plan and relationship between plan and site.
Other persons	Include issuing officers, isolating officers, recipient in charge, testing officers or their equivalent.
Other services	May include water; electricity; telecommunication; sewerage and stormwater authorities; other pipeline authorities.
Parameters	Set guidelines to be worked within.
Participative arrangements **See also OHS Glossary — Participative arrangements**	Includes regular information sessions (using clear and understandable language) on existing or new OHS issues; formal and informal OHS meetings; meetings called by OHS representatives; health and safety committees; contributing suggestions and reports to management; easy access to relevant written workplace information.

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Term	Definition/Explanation
PC(s)	Personal computer(s).
Permit to work **See also OHS Glossary — Permit to work**	The permit to work is an authorisation for an individual to work to in required activities and functions associated with the Gas Industry.
Permits	Include any documents or forms approved for use by enterprise safety rules and permit to work procedures.
Personal protective equipment **See OHS Glossary — Personal protective equipment (PPE)**	May include protective head wear; face masks; gloves; safety boots; clothing such as overalls; hearing protection.
Persons	May include organisation employees; contractors; consultants; maintenance persons; appropriately experienced and qualified persons; drivers, cleaners, grounds and site security persons.
Physical resources	Properties/facilities, fixtures and plant, vehicles, equipment, stock and supplies, gas systems and plant, works depots, pipelines, distribution systems, storage depots and installations.
PIG	Pipeline Inspection Gauge A PIG is a plug style piece of equipment designed to tightly fit inside a pipeline. It is propelled from a launcher usually by water or compressed air to clear the inside of a pipeline. In addition, recent developments in computer technology has been utilised

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Term	Definition/Explanation
	and this has produced 'Intelligent' PIGs, which can record information as to a pipeline's physical condition.
Pipeline control systems	Include compressor systems and equipment (compressors, monitoring systems, power supply systems, pumps, coolers, scrubbers, expanders, anti surge systems, safety systems and compressor control systems).
Pipeline systems	May include pipes; valves; compressors; electrical and electronic components; PLCs; cathodic protection; pressure regulation and meters.
Plant and equipment **See also OHS — Plant**	Includes but is not limited to air compressors and hoses; concrete mixer; industrial wet and dry vacuum cleaner; pallet trolley; rollers; compactors; pumps and hoses; brick/masonry saw; ladders; trestles and planks; wheelbarrows; LPG cylinders; traffic barriers; lighting; boring equipment; concrete cutters; trenching equipment; pneumatic hammers; leakage location equipment; cathodic protection equipment; pipe locaters; fire fighting equipment; electrofusion equipment; welding equipment.
Policy	Supply, procurement, expenditure, audit, reporting and recording policies.
Power tools	Includes drills; nail guns; staplers; screwdrivers; sanders; angle grinders; pneumatic tools and sand blasters.
Preparation and implementation strategies	Include the use of the services of staff associated with maintenance and planning.

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Term	Definition/Explanation
Pressure vessels and fittings	May include such items as pressure vessel; vaporisers; earth connections; relief valves; emergency shut-down valving (eg. ISC valves); manual shutdown valving; pipework; vessel footings; regulators; hoses and couplings; pumps; compressors.
Prime movers	May include turbine engines, reciprocating engines, electric motors (fuel and carburetion systems, ignition systems, lubrication systems, induction and exhaust systems, governing systems, power supply systems, safety and shutdown systems).
Problems	May include consumption that is abnormally high or low; reading lower than previous reading (step down); access to meter; discrepancy between meter reader's reading and that of the consumer; missing meter; meter breakdown; meter relocation.
Procedures	Includes standard operating procedures; quality procedures; organisation continuous improvement strategy.
Process monitoring	May include the following checks, stock levels; pressures; water sprays; security; gas heating valves; shutdown system; odourant dosing levels.
Processing LPG	May include blending/mixing LPG; manufacturing TLGP; odourising LPG.
Product and service issues	Includes the market and demand data; organisational product knowledge; customer delivery; faults and downtime.

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Term	Definition/Explanation
Product information	Includes competitive features of products or services; product trends; information to correct problems with products or services; innovations to products or services; cost and production data; distribution processes; transmission processes.
Project activities	Major construction and maintenance activities in either the LPG or natural gas sector, including installations, transmission and distribution pipelines, LPG storage facilities greater than 50kL, underground storage, tankers and ships, control systems, custody transfer stations, odorising plant, corrosion control, interconnecting systems.
Record keeping	May require the use of computers and or paper records.
Records	Relating to previous routes may include meter access details; warnings relating to dogs; obstacles to access.
Records and reports (6)	Business plans and marketing plans, KPI's reports, financial reports and forecasts, monthly statements/invoices, persons reports, Lost Time Injury reports, debtor/creditor reports.
Records/documentation	Includes Occupational Health and Safety and environmental legislative requirements; erosion control documentation; vegetation control documentation; workplace mapping, eg pipeline alignment drawings, geographical maps, topographical maps; pipeline access route manuals; MSDS information;

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Term	Definition/Explanation
	standard operating procedures.
Records/reports (5)	May include relevant documentation; routine inspections (daily readings, weekly/monthly checks); product reconciliation; maintenance activities; mandatory or statutory inspections; safety; hazard and incident; product quality; transfer documentation; corrosion control; control centre log.
Reduced or eliminated	Where something is either decreased or completely removed.
Reference information	Includes benchmarking reports, maintenance data, market requirements, plant budgets, business plans and risk assessment reports.
Regulatory guidelines	Where something is set as a compulsory part of a work environment.
Relevant authorities and other stakeholders	Government authorities, landowners (both current and traditional indigenous), stakeholders, local councils, other utilities; emergency services; road transport authorities; rail department.
Relevant documentation (5)	May include OHS consultation and reporting requirements; localised Occupational Health and Safety audits; injury reporting; claims management and rehabilitation; contractor control; purchasing control; plant and maintenance handling; contracts; drawings/plans; manufacturer's specifications; company standard operation and safety procedures; work permits; confined space entry

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Term	Definition/Explanation
	permits; hot work permits; company forms; records/reports; emergency plans; environmental requirements; quality assurance documentation.
Relevant documentation (6)	Company risk management policy; codes of practice; standard operating procedures; Australian Dangerous Goods; trade practices; Occupational Health and Safety reporting requirements; injury reporting; claims management; contractor control; hazardous substances management. Contracts; specifications; drawings/plans; 'as-constructed' drawings/plans; manufacturer's specifications; work permits; company standard operation and safety procedures; company management plans and policies; hot work permits; company forms and files; OHS, laws and codes of practice; government legislation, acts and regulations; environmental legislative requirements; pipeline licenses; quality assurance; commercial agreements.
Relevant persons	Managers; other supervisors; inter-company departments; other utilities; council representatives; producers, transporters/shippers; consultants; government bodies/agencies; refinery persons; customers; land owners.
Relevant regulation and procedures	Refers to, but not limited to, the use of machinery/equipment; cleaning materials and aids; equipment operation; personal protective equipment e.g. safety boots, eye and ear protection, safety helmets etc.
Relevant resources	Relevant persons, materials and equipment, personal protective equipment, company

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Term	Definition/Explanation
	standard operating procedures, equipment manuals, training resources.
Relevant sections of Standard Operating Procedures	Includes hazard policies and procedures; emergency, fire and accident procedures; procedures for the use of personal protective clothing and equipment; hazard identification and issue resolution procedures; job procedures and work instructions; relevant guidelines relating to the use of machinery and equipment.
Repair and maintenance equipment	May include oxyacetylene cutting equipment; pipe cutters; cranes; dogging and slinging activities; cold cutting equipment; linepipe and station pipe; screwed and welded fittings; flanges, gaskets and stud/nuts; hand and power tools; transport equipment.
Repair/modification techniques	May include hot tapping operations; hot tap and stroppling operations; pipe threading machinery; welding and cutting operations; gluing; fitting of pipeline repair sleeves and clamps; use of Lam Air Movers; use of pipe alignment clamps; use of Chiksans; fusion.
Reports (2)	May require the use of personal computers, other hardware media and associated software.
Reports (5)	Include routine inspections (daily readings, monthly checks); scheduled maintenance activities; mandatory or statutory inspections; hazard and incident reports.
Representatives in other utilities	Include other pipeline operators; electrical;

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Term	Definition/Explanation
	rail; telecommunications.
Requirements **See also Standard Operating Procedures/Established Procedures**	To which equipment and procedures and outcomes must conform and includes statutory obligations and regulations, by-laws and standards called up by legislation or regulations. May include: • statutory regulations and codes of practice — National, State and Local Government • job specifications • transport documentation • standards in specifications (Australian/NZ/international) • procedures and work instructions • quality assurance systems • manufacturers' specifications • maintenance manuals, schedules and specifications/standards • circuit/cable schedules • design specifications • customer/client requirements and specifications • specified underpinning knowledge (specified in Evidence Guides) • National and State and Local Government guidelines, policies and imperatives relating to the environment
Resource requirements	To enable efficient planning and scheduling of routes may include availability of competent meter readers, vehicle and appropriate meter reading equipment.
Resources	May include appropriate persons; relevant persons; materials, tools and equipment etc., vessels, pumps; compressors, valves; product; personal protective equipment and clothing; control and monitoring

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Term	Definition/Explanation
	equipment; mixing and sampling equipment; air equipment. To meet storage and/or processing operations and include appropriately experienced and qualified persons; process control equipment; station power supply; heater and heat exchangers; station instrumentation; drawings and schematics; metering equipment and gas analysis equipment; valves, actuators and flanges; compressors and prime movers; sumps and drains; PIGs; personal protective equipment and clothing.
Responsibility	For tasks and workload may include interpreting work instructions and direction; prioritise work; using time effectively; arranging work materials.
Risk management **See also OHS — Risk; Risk analysis; Risk assessment; Risk evaluation; Risk management; Risk ranking; Risk register**	Identification and control of those risks that threaten the profitability or viability of an organisation. Includes identifying and assessing risks associated with occupational hazards, and designing programs to limit exposure to those hazards. See also 'Occupational Health and Safety management system'.
Risk management plans **See also OHS — Risk**	Identification of hazards, assessment of risks, identification of control measures, implementation of control measures and review of control measures, reference to conduct and reporting of hazard and operational studies (HAZOPS) and hazard analysis studies (HAZANS) for critical incidents, recognition of six categories of exposures (personal, property, financial, environmental, product and administrative), legislative compliance, workplace health and safety, standard operating procedures, vicarious liability, professional liability, reducing loss and exposure in the work environment from

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Term	Definition/Explanation
	personal loss-injury/common law, property loss-damage, financial-loss of income/theft, environmental liability, product-project work, administrative exposure, identification and use of manufacturer's specifications and Australian/New Zealand and ISO standards, contingency plans for response to critical incidents.
Risk management principles	Six categories of exposures (personal, property, financial, environmental, product and administrative, legislative compliance, workplace health and safety, procedure systems, vicarious liability, professional liability.
Risks	May include injury, death or illness, damage to plant or equipment, financial loss, non-compliance with legislation (OHS, environmental), damage to products.
Safe working procedures	Standard operating procedures may include wearing personal protective equipment; controlling traffic; controlling access to the site; ensuring trenches are correctly shored; using welding screens; the availability of correct fire extinguishers; enterprise procedures and practices; manufacturer's specifications.
Safety devices	May include deluge systems; emergency stop devices, Personal Protective Equipment. Deluge systems; emergency stop devices; Personal Protective Equipment.
Safety equipment	Includes fire extinguishers and blankets;

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Term	Definition/Explanation
	hoses; pumps; branches; fittings/nozzles; breathing apparatus; alarms; sprinkler systems; First Aid kits.
Safety issues	Occupational Health and Safety of operatives, ongoing maintenance of facilities emergency plans, safety cases and environmental impact assessments.
Schedule requirements	Should include number of days; address and location; previous schedule date; route number; meter count.
Security breach investigation practices	Established procedures used to deal with the following scenarios; bomb/fire threat; intrusion; theft of equipment; damage to equipment/sabotage; personal risk of injury, disease or death; potential environmental damage.
Services	Include gas; water; electricity; telecommunication; sewerage and stormwater authorities; other pipeline authorities.
Simulated work environment	Circumstances that may arise in the work environment are constructed and used as a tool for assessing workers/employees operating under working conditions.
Solutions	Include arrange the removal of inactive meters; accounts billed; change meters; arrangements for payment made; adjust accounts; access for future meter reading made.
	Includes asset owners; internal clients;

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Term	Definition/Explanation
Stakeholders	emergency services; land owners both current and traditional Indigenous owners; the general public; statutory authorities.
Standards **See also OHS Glossary — Standards**	Technical documents which set out specifications and other criteria for equipment, materials and methods to ensure they consistently perform as intended. The Standards referred to in competency standard units are those published by Standards Australia or in joint venture with Standards New Zealand and Australian Gas Association Standards. Competency in the use of other technical standards may be required in industries not restricted to Australian requirements. For example, shipping and off-shore petroleum industries are subject to standards agreed to by underwriters and enterprises or some other international convention.
Standard Operating Procedures **See also Established Procedures**	Formal arrangements of an organisation, enterprise, statutory authority or manufacturer of how work is to be done. This may include Quality assurance systems; Work Clearance systems; OHS Practices; Other Legislative requirements and testing in accordance with AG 603, AS 1697, AS 3723, AG 2885 and any other Australian or International Standard that may apply
Stations	See facilities and equipment
Strategies	Methods of conducting operations that could be over long, medium of short term.
Structures	Structure is a facility with footings deeper than 450mm and or being fuller than 2

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Term	Definition/Explanation
	meters.
Surface reinstatements	Include bitumen; concrete; loam/top soil; dolomite; lawn.
System logistics	Could include land and sea transport routes and equipment, transmission and distribution pipelines, land ownership and easements, siting.
Tankers	Include heavy rigid or heavy combination truck.
Technology	Includes a range of information processing equipment for storing; retrieving and using data such as electronic equipment; fixed, remote, wireless or the like; PCs, hand held recording devices.
Telephone contacts	Current contacts should be kept for consumers; Councils/rate offices; real estate agents; internal employees/departments; other statutory authorities.
Test equipment	May include reference half cells; multimeters; dataloggers; trycorders; syncorders; interrupters; CDA equipment; soil restivity test equipment.
Testing	Testing and refurbishing is covered by a range of legislative requirements and standards.
Testing and application equipment	Includes abrasive blasting equipment;

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Term	Definition/Explanation
	compressors; low voltage and high voltage holiday detectors; paint thickness coating gauges and meters; mobile plant; pipe wrapping machines; spray painting equipment; abrasive blast comparators and standards; densitometers; coating defect assessment survey equipment (DCVG method equipment, Pearson technique method equipment); hand/power tools; heating torch.
Third parties	Include land owners (both current and traditional indigenous), both current and traditional Indigenous; local authorities; emergency services; other pipeline operators; producers, customers, shippers and vendors; government agencies and departments; contractors.
Third party liaison	Liaise with third parties whose activities can be a threat to the transmission pipeline. Informing third parties of the restrictions and requirements when working near a transmission pipeline.
Tools and equipment for LPG	May be required to perform painting, cleaning, refurbishing and testing of equipment.
Tools and equipment (1)	The types of equipment and tools used to carry out work activities include general concrete mixers; general vacuum cleaner; general trolley, non pressurised pumps and hoses; wheelbarrows; traffic barriers; extra low voltage lighting equipment; hand held tools; basic technology (e.g. PCs)
Tools and equipment (2)	Required for pipeline installation may include but is not limited to pneumatic

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Term	Definition/Explanation
	tools and equipment; boring equipment; plastic fusion and solvent glue kits; welding plant equipment; various hand tools; trucks; slings; generators; location equipment; electrofusion equipment; window cutter; steel plates; administration equipment for documentation; lifting equipment. Tools and equipment are also required to perform painting, cleaning, refurbishing and testing of equipment and could also include cylinder trolley; hose/tools; leak detection devices; truck tail gate loader; tray gates and ropes; pipes; hoses; valves and gauges; protective and safety equipment.
Tools and equipment (3)	Required for pipeline installation may include but is not limited to pneumatic tools and equipment; boring equipment; plastic fusion and solvent glue kits; welding plant equipment; various hand tools; trucks; slings; pressure testing equipment; compressors; generators; location equipment; electrofusion equipment; window cutter; steel plates; administrative equipment for documentation; lifting equipment; pigging equipment. To odourise gas may include odourmeter; tools such as lance, hoses, regulators; emergency response kit including absorption material; sodium hypochlorite (neutraliser); masking agent; reference standard; level indicator (magnetic detector); personal protective equipment; fire extinguishers; emergency container; emergency equipment; transfer pump; molecular sieve for venting.
Tools and equipment (4)	Includes vehicles; pipe locator; gas detector; pipeline probe; hand held tools; mobile phone/satellite phone; high

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Term	Definition/Explanation
	frequency radio; GPS; binoculars; camera; personal computers; intrinsically safe lighting (torch).
Tools, equipment and testing devices	Includes hand tools; valves; actuators and flanges; heaters and heat exchanges; metering equipment; process control equipment; gas analysis equipment; piping systems; sumps and drains; pressure vessels/filtration equipment; prime movers; pumping systems and equipment; compression systems and equipment; PIG.
Tools, materials and equipment	May include hand tools including power operated tools; plant; emergency equipment; electrical and electronic test equipment; gas detectors; air compressor; water pump.
Traffic control	Traffic control is the controlling of traffic around a work site, eg laying a gas pipe in the vicinity of a road. Materials used in traffic control include barriers; witches hats (cones); flashing hazard lights; star iron pickets; traffic signs; stop/go paddles.
Transfer equipment	May include compressors; transfer pumps.
Transfer of LPG	May be undertaken by tank to tanker; ship to storage terminal; tanker to tank; tank to tank.
Transmission pipeline standards	AS/NZS 2885 part 3 sections 5 & 6.
Troubleshooting techniques	Methods used to locate or determine the reason for a fault in a system, component or part by means of a systematic checking

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Term	Definition/Explanation
	or analysis.
Types of adjustments	Include downstream pressure adjustment; storage pressure adjustment (vaporiser systems only); bypass pressure adjustment for pumps.
Types of checks and tests	On CP systems may include on potential surveys; on/off potential surveys; coating defect assessment surveys (DCVG method, Pearson technique/method, over pipeline potential method); loop impedance testing; anode bed testing; soil resistivity testing; interference testing.
Types of CP faults	May include coating damage/deterioration; interference from other systems; anode not working; equipment fault/failure. The use of personal computers, other hardware mediums and associated software may be required to detect faults.
Types of details	Include, but are not limited to, bore and casing details; ground voltages; connection details; common trenching details/distances and conversion details.
Types of drawings	Include site plans; elevations; sectional plans/elevations; detailed and specification providing illustrations and dimensions.
Types of equipment faults	May include electrical problems; over-filled vessel; compressor failure; pump failure; out-of-current inspection status; gauge failure; hose rupture/leaks;

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Term	Definition/Explanation
	instruments out of calibration; non-flow of LPG.
Types of faults	May include gas leaks; electrical problems; compressor or pump failure; out of current inspection status; gauge failure or hose rupture leaks; instruments out of calibration; non-flow of gas; instruments and equipment require cleaning; routine servicing is due; tight nuts, valve castings and fasteners.
Types of gas system faults	May include liquid/vapour leaks; electrical problems; mechanical failure; over-filled vessel; out-of-current inspection status; gauge failure; hose rupture/leaks; instruments out of calibration; non-flow of Liquefied Petroleum Gas; cathodic protection system failure; corrosion.
Types of structures	Include buildings; bridges; fabricated towers; fences; wells; dams; poles; heritage/cultural features and environmental barriers.
Types of variations or irregularities	May include corrosion; impact damage; point deterioration; leakage; non-operability of shutdown systems; equipment out of calibration.
Unit(s) of competency	see also competency standard unit(s)
Upstream	Towards or in the higher part of a stream; against the current. Situated farther up the stream. For example, the city gate is upstream from the home or business meter.

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Term	Definition/Explanation
Valve system	Flow control equipment, pressure and temperature transmitters and transducers, telemetry equipment, gas chromatographs, moisture analysers, gas sampling equipment, PLCs.
Work instructions	Include verbal instructions, written instruction and instructions provided visually such as video, OHS signs, symbols and other pictorial presentation.
Workplace hazard reports	Include face-to-face reports; phone messages; notes; memos; specially designed report forms.
Work completion details	May include log books or computer input.
Work plans/schedules	Includes formal and informal means of prioritise activities; daily plans; quality plans; safe working plans; work allocation and resource needs.

Glossary of Terms Related to Occupational Health and Safety

Introduction

This Glossary of Occupational Health and Safety (OHS) Terms has been adapted from the NOHSC official glossary of terms and developed to assist competency developers and writers, reviewers of training packages and those developing any training specification or learning materials for the Vocational Education and Training environment.

In Australia we consider that the rate of workplace fatality, injury and ill health is far too high. To reduce this toll we need to make some changes in the work place and this requires training to enable business and workers to effectively manage safety. We must get OHS right in the competency so that the resultant learning contributes to improving the capacity of those in the workplace to manage safety. This applies not only to the ‘designated’ OHS units but to the integration of OHS, as appropriate, into all competencies, learning programs and learning resources.

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The competency standard unit TAADES505A *Research and develop competency standards*, specifies the outcomes and the knowledge and skills required to research and develop documents which outline competency requirements for a particular job function, work process, work role or specific vocational outcome. This unit cites four phases in developing a competency:

1. Research the competency area
2. Formulate competency specifications
3. Validate competency specifications
4. Finalise competency specifications.

OHS is a critical aspect of research into the area of competency and is also an important aspect of work performance to be integrated within a competency.

As in many technical areas, OHS has its own terminology. OHS affects all of us, however key words and terms are not always used in a consistent manner and this can lead to confusion. To maximise the effectiveness of our training and education we need to ensure that our use of OHS terminology is as consistent and clear as possible.

This glossary is not intended as a definitive dictionary of OHS terms but is designed to be used in the second phase of competency development, to formulate the competency specifications. It is also an invaluable tool for those involved in the design and development of learning resources.

Further information on OHS hazards, practical guidance material, standards and codes of practice is available at the National Occupational Health and Safety Commission (NOHSC) website at www.nohsc.gov.au

The glossary is intended to be an evolving and dynamic document and those wishing to comment on the terms or suggest additions or modifications should email the Team Leader of the OHS Skills Development Team at NOHSC.

NOHSC term	**Definition/Explanation**
Accident	A term that is now considered out of date. Preferred term is *incident.*
Accountability	The process by which a person with OHS responsibilities is answerable to a higher authority.
Action level	The level at which a risk is considered to be unacceptable and action is required to reduce the level of risk. May be specific such as a

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NOHSC term	Definition/Explanation
	noise level at which hearing protection must be worn, a concentration of chemical or more generic.
Action plans	Documented plans developed within the workplace to implement OHS management, which include allocated responsibilities and time frames.
Administrative controls	Management practices that aim to control employees' exposure to specific hazards, and generally improve health and safety – examples include the use of job rotation, job enlargement
ALARA (As Low As Reasonably Achievable)	A basic concept where risks are kept as low as is reasonably achievable. ALARA is determined by reference to established codes and standards and consultation with groups impacted by the decision outcomes including those exposed to the risk.
Anthropometry	The science dealing with the comparative measurement of the size and proportions of the human body, the range of movement of limbs, as used in ergonomics.
Audit	A systematic examination against an agreed benchmark of the approach to managing safety to evaluate an organisation's arrangements for identifying hazards, assessing and controlling risks, and monitoring and improving the effectiveness of the management of OHS and compliance. (Note a workplace inspection is NOT an audit.)
Audit tools	The instruments for collecting evidence and conducting the analysis and evaluation (they are not the same as the audit criteria or benchmark), they may be: • developed specifically for the purpose • adapted from existing tools • purchased or accessed from existing tools. They include: • performance checklists • sets of questions to be asked • descriptions of required characteristics to be checked • limitations and instructions for use.
Authorisation of permit	Signing of permit by competent person.
Biomechanics	The application of mechanics (forces and motion) to analyse body movement and the stresses involved in body posture during movement.

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NOHSC term	Definition/Explanation
Causative event	Key event that resulted in the particular outcome(s) of injury or damage.
Circumstance	Short-term situation that is relatively unusual, such as a storm or when a key person is absent.
Certification	Refer *operator certification.*
Common law	Law that is derived from the English legal system and has evolved through judicial decision and practice (case law) that establishes and follows precedent. Note difference to 'statute law'.
Condition	Permanent situation such as type of equipment, work practice, design of work environment (often different to detect or identify) that may contribute to risk.
Consequence	The injury or damage outcome of an event, which may be expressed quantitatively or qualitatively, there may be a range of possible outcomes for a specific event or scenario.
Confined space	An enclosed or partially enclosed space which: • is at atmospheric pressure during occupancy • is not intended or designed primarily as a place of work, and is liable at any time to: • have an atmosphere which contains potentially harmful levels of contaminant • not have a safe oxygen level or • cause engulfment • may have restricted means for entry and exit. A confined space is determined in part by the hazards associated with a defined set of circumstances (restricted entry or hazardous atmosphere, risk of engulfment) and not just with work performed in a restricted space. Examples include but may not be limited to: • storage tanks, tank cars, process vessels, boilers, pressure vessels, silos and other tank-like compartments • open-topped spaces such as pits or degreasers • pipes, sewers, shafts, ducts and similar structures • shipboard spaces entered through a small hatchway or access point, cargo tanks, cellular double bottom tanks, duct keels, ballast and oil tanks and void spaces (but not including dry cargo holds). A person is deemed to have entered a confined space when their head (i.e. the breathing zone) or upper part of the body is within the

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NOHSC term	Definition/Explanation
	boundary of the confined space. (Note that inserting an arm for atmospheric testing is not considered an entry to a confined space). References: • AS/NZS 2865:2001 *Safe working in a confined space* • Handbook – *HB 213:2003 Guidelines for safe working in a confined spa*ce
Consultative arrangements	State and Territory OHS legislation specifies obligations for workplace consultation. The workplace arrangements to meet these obligations may include: • OHS and other consultative and planning committees • health and safety and other employee representatives • employee and supervisor involvement in OHS activities such as inspections and audits • procedures for reporting hazards, and raising and addressing OHS issues • employee and workgroup meetings. When developing consultative arrangements, consider: • language • shift work and rostering arrangements • timing of information and data provision • literacy and numeracy levels • workers with special needs • workplace organisational structures (for example, size of organisation, geographic, hierarchical) • cultural diversity • management approach • workplace culture and approach to OHS by managers, supervisors and employees.
Controls **See also Hierarchy of control**	The devices and methods of controlling the effect of the hazard so that the risk of injury is minimised. The 'quality' of the control is the level and reliability of the control compared with the level of risk. The quality of the controls is determined by the best available technology or approach which: • should be applied when the most probable outcome is death or serious injury • may be applied where the most probable outcome is less serious. Refer also *Hierarchy of control*. Workplace factors that impact on the controls selected and the implementation include*:*

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NOHSC term	Definition/Explanation
	• language • shift work and rostering arrangements • literacy and numeracy • workplace organisational structures (e.g. geographic, hierarchical) • cultural diversity • training required • workplace culture related to OHS, including commitment by managers and supervisors and compliance with procedures and training.
Control measures	Devices, systems (including work methods) or approaches that reduce exposure to workplace hazards.
Crisis management plan	A flexible document that can cope with a broad range of crisis types and: • is approved at the highest levels of the organisation • focuses on management control • identifies responsibilities for decision making • details communication processes and psychological support • addresses arrangements with any contractors or shared tenancy • integrates the emergency response plans as well as recovery • incorporates dealing with external agencies and support • addresses planning for recovery before crisis occurs. Documentation for crisis management plan may include: • policy, emergency response structure, initial response instructions for various roles/areas, responsibility and authority of individual roles, warning systems, training requirements, resource inventory for response and recovery, program review and monitoring processes • crisis risk management documentation, such as risk management team lists, communications strategies, identification of issues, risk assessments/evaluations, vulnerability profiles, risk registers and treatment strategies. The term *emergency management* may also apply but *crisis management* infers a more holistic approach encompassing the full range of business affairs.
Dangerous Goods (DG)	Those gases, liquids and solids identified and classified under the internationally agreed system which is followed in Australia and that are subject of so called ‘dangerous goods’ standards and legislation. The objective of the Dangerous Goods legislation is to control the

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NOHSC term	Definition/Explanation
	storage, handling and transport of DGs to protect the safety of workers, the public, property and the environment. While dangerous goods may also be hazardous the terms should not be confused.
Dangerous parts of plant	Potential contact or entrapment points to which the operator may be exposed during: • operation • examination • lubrication • adjustment • maintenance.
Design	The process of bringing together innovation, aesthetics, and functionality to plan and create a product, process or system to meet the artistic, industrial or performance requirement of an individual or group. The design process involves a series of activities where an idea is conceived, shaped, developed, produced and then acted upon to produce a designed-product. It also includes any subsequent alteration (redesign or retrofit).
Design process	There are two stages of the design process: The concept design phase considers preliminary design options, which are assessed against product specifications to determine the best preliminary design to be developed. This phase includes concept design, research and development, feasibility and risk management (including OHS risks). The detailed design phase develops the selected design to its final state. It includes research and development, feasibility studies, concept and detail design, technical and functional specifications, plans and drawings, operational systems, construct/manufacture options and detailed quantities, cost and risk analysis (including analysis of OHS risks).
Designed product	The item to be designed, including a built environment, structure, an item of plant or equipment, chemical, work system or process or any other physical attribute or system associated with either the work or its interface with people.
Duty of care	Arises from common law but is enshrined in OHS statute law and/that places into a legal form a moral duty to anticipate possible causes of injury and illness and to do everything reasonably practicable to remove or minimise these possible causes of harm. The key factors relating to duty of care are that: • duty of care applies wherever there is special relationship

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NOHSC term	Definition/Explanation
	(employer – employee, employer – contractor, supervisor – work team member, tradesperson – apprentice) • duty of care applies to all circumstances of the relationship • individual duty of care cannot be delegated (but roles and functions may be delegated) • applies personally to individuals • applies to all risks that are foreseeable and preventable • includes the concept of *reasonable*.
Elements of systematic approaches to managing OHS including OHSMSs	A list of key requirements or major principles that are combined in a methodical and ordered manner to minimise the risk of injury or ill health in the workplace; and may include processes of OHS planning, allocation of resources, communication and consultation, hazard management, record keeping and reporting, training and competency, and review and evaluation for ongoing improvement of OHS.
Emergency	Events such as: • serious injury events • emergencies requiring evacuation • fires and explosions • hazardous substance and chemical spills • explosion and bomb alerts • security emergencies — armed robberies, intruders • internal emergencies, such as loss of power or water supply and structural collapse • external emergencies and natural disasters, such as flood, storm and traffic accident impacting on the organisation. May also be referred to as a *hazardous event*.
Emergency agency	Includes fire, police, ambulance, relevant government departments, hazardous materials response teams (HAZMAT) and OHS authorities.
Emergency control organisation (ECO)	Structured group within the organisation that includes roles such as emergency controller, communications recorder, media liaison and employee support.
Emergency equipment	Includes: • First Aid equipment • eye wash shower or portable eye washes • fire extinguishers and equipment • communication equipment

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NOHSC term	Definition/Explanation
	• evacuation alarms • evacuation equipment, especially that for disabled persons • torches • clothing items such as coloured hats and vests.
Emergency stops and warning devices	Are fitted to plant and equipment that have a risk of entrapment or other hazard and must be: prominently, clearly and durably marked coloured red (push buttons, bars or handles) unable to be affected by electrical or electronic circuit malfunction fitted where risk assessment identifies a need.
Enforcement	Processes and instruments available to the OHS regulator under legislation may include*:* • prosecution • prohibition notices • improvement notices • on-the-spot fines • provisional improvement notices.
Epidemiology	The study of the distribution and determinants of disease within human populations. Patterns of injury or illness in groups of people are studied to determine causes, identify groups at risk and to identify and evaluate methods of treatment and prevention.
Ergonomics	The study of the relationship between people, the equipment they use and their physical and social work environment.
Ergonomic interventions	Includes: • design of tools • design of workplaces • design of products • design of equipment • design of work systems, processes or organisation including work flow, planning and control • job design • development of new decision making processes • new forms and organisations of work.
Ergonomic tools and databases	May include: • engineering models • Australian and International Standards

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NOHSC term	Definition/Explanation
	• Australian and International anthropometric databases
Explosive substance	Substance that explodes if it comes into contact with heat, flame, an ignition source or incompatible substance.
Fail-to-safe	Design feature of equipment that ensures if there is a failure or defect in the product, or another factor such as loss of power, then the product is left in a safe condition.
Functional areas and management systems	Other than OHS but that impact on the management of OHS may include: • strategic planning • purchasing, procurement and contracting • logistics • HR, IR and personnel management, including payroll • engineering and maintenance • information, data and records management • finance and auditing • environmental management • quality management.
Guarding	Devices fitted to machinery to separate the operator from dangerous parts of the machine. Devices may include: • permanently fixed physical barriers where no access of any part of a person is required • interlocking physical barriers where access to dangerous areas is required during operation • physical barriers securely fixed by means of fasteners or devices • presence-sensing safeguarding systems.
Hazard	A source or a situation with a potential for harm in terms of human injury or ill health, damage to property, damage to the environment, or a combination of these.
Hazards of long latency	Conditions, illnesses and other health risks that result from longer term exposure to specific triggers such as chemicals, noise, radiation and psychosocial factors.
Hazards of low frequency/high consequence	High impact events that occur rarely such as explosions, fires and building collapses but may result in very serious injury, death or multiple death situations.
Hazard identification	The process of identifying sources of harm. Hazard identification may be required: • at design or pre purchase of buildings, equipment and materials

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NOHSC term	Definition/Explanation
	• at commissioning or pre-implementation of new processes or practices • before new forms of work and organisation of work are implemented • before changes are made to workplace, equipment, work processes or work arrangements • as part of planning major tasks or activities, such as equipment shutdowns • following an incident report • when new knowledge becomes available • at regular intervals during normal operations • prior to disposal of equipment, buildings or materials. Different methods may be used to identify hazards including observation; consultation with workers, clients or other users; trial of models or prototypes; review of technical standards and other information sources; monitoring and measurement.
Hazard identification tools and processes	Include: • analysis of incident investigations • analysis of incident, injury and claims statistics • workplace inspections • job safety analysis (JSA) • audits • cause and effect diagrams • surveys • review of research and industry literature.
Hazardous event(s)	Includes incidents with the potential to seriously harm life, health, property, the environment or a combination. May also be referred to as *emergencies*.
Hazardous substance	A substance that is listed on the National Commission's List of Designated Hazardous Substances (NOHSC:10005) or has been classified as a hazardous substance by the manufacturer or importer in accordance with the National Commission's Approved Criteria for Classifying Hazardous Substances (NOHSC:1008).
Hazardous substance register	Listing of all the hazardous substances that are used or produced in a workplace together with a current Material Safety Data Sheet for each substance. May also contain risk assessments for individual hazardous substances.
HAZCHEM	An initial response emergency action code that provides information vital to emergency services to enable them to stabilise the incident

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NOHSC term	Definition/Explanation
	scene during the early stages of a HAZMAT incident. The Code is displayed on emergency information panels on transport vehicles and on signs on buildings. HAZCHEM codes are assigned to chemicals on the basis of their flammability, toxicity, reactivity and other relevant chemical and physical properties.
HAZMAT	A contraction of the words *hazardous materials* and may be used in a range of circumstances including HAZMAT emergency response units, HAZMAT emergency response equipment and HAZMAT registers of hazardous substances.
HAZOP (Hazard and Operability Study)	An advanced risk analysis technique that involves a systematic review of a process to determine risks and risk minimisation strategies.
Health and safety representative	An employee, elected by the workgroup, who represents the OHS interests of the people with whom they work. The function is carried out in addition to the normal work role. Processes for election of health and safety representatives, their role and rights are specified in State and Territory legislation.
Health promotion	The promotion of health, especially as a workplace program, designed to improve and enhance employee health undertaken as a complementary activity to the prevention of work-related injury and disease. Also called *wellness*.
Health surveillance	Monitoring or checking individuals for the purpose of identifying changes due to exposure to hazards in the workplace. May include biological monitoring.
Hierarchy of control	The priority order in which hazard and risk controls should be considered with the eventual outcome often being a combination of measures. The prime emphasis is on: • elimination, and where this is not practicable, minimisation of risk by: • substitution • isolating the hazard from personnel • engineering controls • administrative controls, eg procedures, training • personal protective equipment (PPE).
Hot work	Involves using equipment that generates heat, sparks, flames or any other sources of ignition in an atmosphere that may be flammable. Includes work with welders, cutters including oxygen cutters, power

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NOHSC term	Definition/Explanation
	tools, grinding, mobile phones. Hot work can also include breaking into 'live' equipment or performing work on live equipment that has the potential to release its contents (eg hot tap in chemical plants).
Housekeeping	Describes workplace and personal routines designed to improve hygiene and safety, for example, cleaning up spills and keeping walkways, exits and traffic areas clear.
Incident	An event that has caused or has the potential for injury, ill health or damage. (*Incident* is the preferred term rather than *accident*)
(Sources of OHS) Information	May be **internal** and include: • hazard, incident and investigation reports • workplace inspections • incident investigations • minutes of meetings • Job Safety Analyses (JSA's) and risk assessments • organisational data such as insurance records, enforcement notices and actions, workers compensation data, OHS performance data • reports and audits • material safety data sheets (MSDSs) and registers • employees handbooks • employees including questionnaire results • OHS advisors • manufacturers' manuals and specifications.
(Sources of OHS) Information	May be **external**, including: • regulatory bodies and OHS Acts regulations, codes and guidance material • other relevant legislation • National Occupational Health and Safety Commission (NOHSC) and Australian Bureau of Statistics • databases such as national and state injury data and NICNAS (National Industrial Chemicals Notification and Assessment Scheme) • OHS specialists and consultants • newspapers and journals, trade/industry publications • Internet sites • industry networks and associations including unions and employer groups • OHS professional bodies

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NOHSC term	Definition/Explanation
	• research information.
Isolation	A safety device system that includes devices such as isolating switches, locks, safety bars, shields, full pressure blanks, spectacle blanks to lock controls, especially moving parts, equipment, systems or devices with stored energy, to an 'off' position while a worker is in a vulnerable position such as carrying out maintenance on rotating equipment, and electrical and hydraulic systems. Isolation systems generally use locking switches that need keys to open the lock and are used in conjunction with a danger tag system that promotes greater safety consciousness amongst the workforce for all situations in which danger to persons could arise from: • the operation of machinery, plant or equipment • the flow of steam, electricity, gases or liquids • the use of faulty or unsafe plant and equipment • include multiple locking systems and involve written authorisation by a competent person. Also called *lock-out* and *tag-out*.
Job Safety Analysis (JSA)	Process of examining all aspects of a task to identify hazards and conditions with a potential for injury or ill health with the objective of developing risk controls including written job instructions.
Legislation relevant to OHS	Includes Commonwealth and relevant State/Territory OHS specific acts and regulations as well as: • workers compensation • privacy legislation • contract law • trade practices • criminal law • common law • industrial relations law • equal employment opportunity and anti-discrimination law.
Life cycle	All phases in the life of a product. Specific phases depend on the type of product but may include design, development, manufacture, construction, assembly, import, supply, distribution, sale, hire, lease, storage, transport, installation, erection, commissioning, use or operation, consumption, maintenance, servicing, cleaning, adjustment, inspection, repair, modification, refurbishment, renovation, recycling, resale, decommissioning, dismantling, demolition, discontinuance, disposal.
Likelihood	The likelihood of the occurrence of the consequence, not the

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NOHSC term	Definition/Explanation
	likelihood of the hazard or the particular scenario.
Locked out	Equipment, which is not to be operated for any reason, may be padlocked, or otherwise prevented from operation using a keyed lock. A lockout may be accompanied by a tag out, or a lock out system may incorporate a tag. Lockout means the isolation by a mechanical device, generally a lock, which, when applied at the source, physically prevents the control to any electrical or mechanical equipment being turned on. Refer also to *Isolation*.
Manual handling	The use of force applied by a person to lift, move, carry, push, pull or otherwise move or restrain an animate or inanimate object.
Material Safety Data Sheet (MSDS)	Document describing the properties and hazards of a material or substance including statements about its chemical and physical properties, health hazards, precautions for use and safe handling instructions. All manufacturers and suppliers of chemicals are obliged to produce an MSDS for each hazardous chemical.
Monitoring	Involves the use of valid and suitable techniques to estimate the exposure of employees to a hazard.
Musculoskeletal disorder (MSD)	An injury, illness or disease that arises in whole or part from manual handling in the workplace, whether occurring suddenly or over a prolonged period of time. (Does not include injuries caused by crushing, entrapment or cut resulting primarily from the mechanical operation of plant.
Occupational Overuse Syndrome (OOS)	Previously called RSI and refers to arrange of conditions characterised by persistent discomfort and pain in and around joints and associated with repeated movement of the joint. Recent State and Territory legislation tends to group these conditions with those arising from manual handling as Musculoskeletal Disorders.
OHS inspection	The process of physically examining and evaluating the extent to which hazards and risks exist, and/or particular OHS requirements, procedures or standards are being met. Refer also to *workplace inspection*.
OHS specialists	Include: • safety professionals • ergonomists • occupational hygienists • safety engineers

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NOHSC term	Definition/Explanation
	• injury management advisors • health professionals.
Operator certification	The process by which a certificate to use or operate industrial equipment is issued by a certifying authority.
OHS management system (OHSMS)	That part of the organisation's overall management system that covers developing, implementing, reviewing and maintaining the activities for managing OHS. It is NOT a standard, a commercial package or folders on the shelf; however it may involve use of OHS management systems developed in the workplace to meet the OHS situation in that particular workplace. Also referred to in broader context as systematic approaches to managing OHS.
Operational controls for plant and equipment	Should: • be suitability identified • have nature and function clearly indicated • be readily and conveniently located • be guarded to prevent unintentional activation • be capable of locking in 'off' position to enable disconnection of all motive power and forces • be of 'fail safe' type.
Participative arrangements	Are those arrangements that inform employees and other stakeholders of OHS matters, seek their input and offer opportunity for stakeholders to participate in decisions that may impact on their OHS. May also be referred to as *consultative arrangements*, however *participation* implies a higher level of involvement.
Permit to work	A written authority document such as hot work and confined space entry that: • includes approval to undertake work and activities including tests, measurements and monitoring • is authorised by a responsible or designated person directly in control of the work • certifies appropriate precautions and controls to be followed • incorporates checklists, conditions and actions such as the frequency and duration of the work and atmospheric tests • follows recognised industry standard recording practices.
Plant	As defined in National Standard for Plant includes: • machinery, equipment (including scaffolding), appliance, implement or tool and any other component, fitting or accessory

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NOHSC term	Definition/Explanation
	• fixed and or specified plant as cited in commonwealth, state and territory OHS legislation • mobile plant and load shifting equipment • pressure equipment such as boilers, pressure vessels and pressure piping • electrical installation and plant such as wiring, accessories, fittings, consuming devices, control and protective gear, converters and generators.
Plant Registration	The administrative process by which a certifying authority or state OHS regulator requires an organisation or industry to register plant, machinery and equipment.
Personal protective equipment (PPE)	Equipment designed to be worn to provide protection from hazards, and may include: • head protection • face and eye protection • respiratory protection • hearing protection • hand protection • clothing and footwear. PPE is considered the least satisfactory control measure.
Policies and procedures	Relevant to OHS include: • policies and procedures underpinning OHS including those for hazard and incident reporting, OHS communication, consultation, issue resolution and risk management • quality system documentation • purchasing and contracting procedures • documents describing how tasks, projects, inspections, jobs and processes are to be undertaken • standard operating procedures, work instructions • job or batch sheets, recipes • operators manuals • employee and contractor handbooks • job/task statements.
Positive performance indicators	Focus on assessing how successfully a workplace is performing through measuring OHS processes.
(OHS) Records	Requirements for OHS record keeping may be defined in: • OHS legislation and regulations governing reporting of incidents and maintenance of records related to specific hazards, including

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NOHSC term	Definition/Explanation
	chemical registers and material safety data sheets (MSDSs) • privacy legislation • organisational procedures • OHS records may include: • hazard and incident reports, First Aid records • risk assessments • hazardous substances and dangerous good registers, MSDSs • risk registers • OHS audit and inspection reports • maintenance and testing records • OHS training records • outcomes of health surveillance and environmental monitoring • workers compensation claims and return to work records. OHS records must be stored taking account of: • privacy • confidentiality • enabling access to personal records, within legislative requirements • commercial in confidence issues as appropriate.
(OHS) Reporting requirements	Under legislation include serious injury and serious incident reporting to OHS authorities.
(OHS) Responsibilities	Those with legislated OHS responsibilities include: • company director • manager • supervisors • OHS representatives • employees and contractors • designers, manufacturers, installers, suppliers.
Residual risk	That risk that is unable to be designed out of a product or process.
Risk	The chance of something occurring that will result in injury or damage. It is measured in terms of consequences (injury or damage) and likelihood of the consequence. Refer also to *Consequence* and *Likelihood*.
Risk analysis	Analysing the risk to: • identify factors influencing the risk and the range of potential consequences • effectiveness of existing controls

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NOHSC term	Definition/Explanation
	• likelihood of each consequence considering exposure and hazard level • combining these in some way to obtain a level of risk. Factors influencing the risk may be associated with: • equipment • work environment/organisation • task • the individual/operator • frequency and duration of exposure • number of people exposed/involved.
Risk assessment	Risk assessment is a two-step process that involves risk analysis and risk evaluation. Risk assessment as required under various OHS legislation does not necessarily require this second step of evaluation. Refer also to *Risk Analysis* and *Risk evaluation*.
Risk evaluation	Comparison of risk with pre-established criteria for tolerance (or as low as reasonably achievable) and the subsequent ranking of risks requiring control. This activity will usually be carried out by or in conjunction with others with advanced OHS skills and knowledge.
Risk management	The whole systematic process directed towards identifying hazards, assessing the risk and developing controls to minimise the risk and monitoring the effectiveness of the controls (and taking further action as required).
Risk ranking	A process of rating risks according to their severity and likelihood. Common systems are based on matrices or nomograms but are usually highly subjective.
Risk register	Includes: • a list of hazards, their location and people exposed • a range of possible scenarios or circumstances under which these hazards may cause injury or damage • the results of the risk assessment, and may also include; • possible control measures and dates for implementation. May also be referred to as *Hazard Register.*
Safe Design	A design process that generates options to eliminate hazards, or minimise potential risk to health and safety of those who make the product and those that use it by involving decision makers and considering OHS risks throughout the life cycle of the designed

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NOHSC term	Definition/Explanation
	product.
Stakeholders	In workplace OHS include: • managers • supervisors • health and safety and other employee representatives • OHS committees • employees and contractors • the community.
Standards	Relevant to OHS include: • OHS regulations and standards developed by OHS regulators • national standards (NOHSC) • Australian standards • International national standards • industry standards • codes of practice • exposure standards • guidance notes.
Statute Law	Law created by legislation passed by government (acts and regulations) as distinct from common law.
(OHS) plan	A document that: • is usually developed annually but may be developed for a shorter or longer period • is reviewed regularly • has OHS performance indicators (ie objectives and targets that are achievable and practical) reflecting systematic approaches to managing OHS.
System of work	The overall process of work including: • method by which the work is carried out • organisation of the work • selection and maintenance of tools and equipment • supervision and training • selection of workers • allocation of tasks and responsibilities.
Systemic approach to managing OHS	Requires: • comprehensive processes that are combined in a methodical and ordered manner to minimise the risk of injury or ill health in the workplace

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NOHSC term	Definition/Explanation
	• processes of planning, allocation of resources, communication and consultation, hazard management, record keeping and reporting, training and competency, and review and evaluation for ongoing improvement. Factors that may impact on the implementation of a systematic approach to managing OHS may include: • barriers to communication, such as language/literacy • workplace culture issues, such as management commitment, supervisors' approach to compliance and general acceptance of the priority of safety • diversity of workers • structural factors, such as multiple locations, shift work and supervisory arrangements.
Tag out	Refer to *Isolation*.
Technical advisors	To the OHS function may include: • legal practitioners • engineers (such as design, acoustic, mechanical, civil) • security and emergency response personnel • workplace trainers and assessors • maintenance and trade persons.
Wellness	Refer to *Health promotion*.
Workplace policies	Comprise written statements of employer's intentions and how the employers will action those intentions in the workplace. For example: OHS, access and equity, discrimination and manual handling.
Workplace inspection	Process of examining the workplace, usually with the aid of a checklist, to identify hazards and level of compliance with workplace procedures.

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2.1 Competency Standard Units

Volume 2 Part 2

2.1 Competency Standard Units

Accessing the Competency Standard Units from this Industry Training Package

This section of the National Gas Industry Training Package outlines the industry Competency Standard Units. The Competency Standard Units have been arranged into discipline categories for ease of presentation and to facilitate quick access and referencing for users.

They are presented in the following order:

PART NUMBER	UNIT DISCIPLINE	SERIES
2.1.0	Independent Units	000
2.1.1	Cross Discipline Common Units	100
2.1.2	Distribution Discipline	200
2.1.3	Transmission Discipline	300
2.1.4	Cathodic Protection Discipline	400
2.1.5	Control Centre Discipline	500
2.1.6	Liquefied Petroleum Gas (LPG) Discipline	600
2.1.7	Support Services Discipline	700
2.1.8	Pressure Control Discipline	800
2.1.9	Imported Units	N/A

Competency Standard Components

All of the Competency Standard Units found in this National Gas Industry Training Package have been developed in accordance with DEST requirements with minor enhancements. All Parts in Volume 2 of this Training Package form an integrated component of each Competency Standard Unit and must be included when developing learning strategies and assessment processes. Importantly, each Competency Standard Unit is interrelated and linked with the Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Volume. No Competency Standard Unit is to be used in isolation or exported without these interrelated components.

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Qualification Codes

Each Training Package qualification has a unique eight-character code, for example in this Training Package UEG30106. In qualification codes, the:

- first three characters are letters identify the Training Package
- fourth is a number reflecting the AQF level for the qualification
- fifth and sixth characters represent the number of the qualification for the given level. That is in the case of UEG30106, it is the first and only AQF level 3 qualification on offer in the Training Package
- seventh and eight numbers identify the year in which the qualification was endorsed. Any subsequent amendments to the qualification result in this number changing to reflect the new year of endorsement.

Competency Standard Unit Codes

Each competency standard unit has a unique code. A typical code is made up of a maximum of 12 characters; normally a mixture of upper-case letters and numbers. For example in this Training Package the following approach has been adopted:

<table>
<tr><td colspan="10">Unit Number</td></tr>
<tr><td>U</td><td>E</td><td>G</td><td>N</td><td>S</td><td>G</td><td></td><td></td><td></td><td>A</td></tr>
<tr><td colspan="6">Industry — E-Oz Energy Skills Australia identifier</td><td colspan="2">Training Package identifier</td><td colspan="2">Industry Streams: Numbers 000 to 999</td></tr>
<tr><td colspan="10">12 Characters Maximum</td></tr>
</table>

Where an amendment is made to a Competency Standard Unit the following applies:

- where changes do not affect the outcome of the unit the last character alpha identifier is incremented to indicate the new version. For example, UEGNSG100**A** is changed to UEGNSG100**B**

Where changes alter the outcome, a new unit title and code is assigned.

2.3.1 Language, Literacy and Numeracy

Volume 2 Part 3

3.1 Language, Literacy and Numeracy

The reading, writing and numeracy skills/competencies in each competency standard unit describe the recommended prerequisite entry requirements typically needed to successfully achieve the competency. A nationally-recognised language, literacy and numeracy framework has been used to provide advice as to the relevant entry level required.

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The information has been derived from the National Reporting System report, *A mechanism for reporting outcomes of adult English language, literacy and numeracy programs*, The Australian National Training Authority (ANTA) and the Department of Employment Education and Training (DEET), 1994-5, jointly funded the report. Australian Training Products Ltd (ATP) distributes it for and on behalf of Language Australia Victorian Office. Stock code 3010A, ISBN: 0 7306 7493 2, April 1999.

The report:

- identifies adult English language, literacy and numeracy competencies required in the industry
- facilitates student pathways
- generates ideas for curriculum and assessment.

The report identifies a national framework of five vertical levels of competence related to complexity of language, literacy and numeracy competence. Six interrelated horizontal aspects of communication were found to apply in relation to differing orientations of social activity involving reading, writing, speaking, listening and/or numeracy. These were categorised as:

- procedural communication for performing tasks
- technical communication for using technology
- personal communication for expressing identity
- cooperative communication for interacting in groups
- systems communication for interacting in organizations
- public communication for interacting in the wider community.

The National Reporting System report should be referred to at all times for clarification, more detailed information and advice.

For the purposes of this Training Package writing, reading and numeracy competencies, have been selected from the five-level competence structure (using the Technical Communication aspect of the national framework), as a means of providing relevant entry-level advice. Registered Training Organisations should use this information to assist them in developing appropriate entry-level learning strategies and to assist learners to meet the entry-level requirements of respective competency standard units.

Table 6 — Reading, Writing and Numeracy: Indicators of Competence

Note: It is important to note that the five levels of competence, interrelated with six aspects of communication of the National Reporting System, is **not** an assessment system. It is not a curriculum. It is not a model of language acquisition. It is not a means for categorising students by a simple "level", nor is it a set of broad competency statements. It is not a recruitment instrument for employers. The NRS suggests that the "*report of a person's competence derives from the interplay between the chosen activity, the features of the text/task, and the context and level of support under which the activity is performed*".

Reading

Scale	IoC*	**Indicators of Competence**	**Technical Communication**

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Scale	IoC*	**Indicators of Competence**	**Technical Communication**
5	5.1 5.2 5.3	Reads and interprets structurally intricate texts in chosen fields of knowledge and across a number of genres, which involve complex relationship between pieces of information and/or propositions. Interprets subtle nuances, infers purpose of author and makes judgements about the quality of an argument. Reads and critically evaluates texts containing data which includes some abstraction, symbolism, and technicality presented in graphic, diagrammatic, formatted or visual form.	Defines the purpose and objectives for the use of a particular technology, e.g. writes a report, which includes a detailed analysis of technology as, applied in a particular workplace or environment. Draws on prior knowledge of the application of technology in researching the capacity of a new system, e.g. writes a briefing and recommends purchase or use of a particular system. Uses technological principles to reduce constraints presented by environmental or physical capacity, e.g. writes a report, which compares the effectiveness and efficiency of manual and computerised record management systems. Prepares a written or oral report, which critically evaluates the content, structure, and purpose of technical texts including graphic, diagrammatic or numerical information. Adapts task instructions to suit changes in technology, e.g. writes plain English instructions for the operation of a new machine based on the manufacturer's instructions. Draws from a number of sources and uses computer skills to prepare a report, e.g. CV and job application letter.
4	4.1 4.2	Reads and interprets structurally intricate texts in chosen fields of knowledge which require integration of several pieces of information for generating meaning. Interprets texts, which include ambiguity, and inexplicitness where reader needs to distinguish fact from opinion and infer purpose. Interprets and extrapolates from texts containing data which includes some abstraction, symbolism, and technicality presented in graphic,	Compares and contrasts views on technology in newspaper articles. Interprets the purposes and objectives for the use of technology after the reading a brochure or manual. Selects technological practices to conform with the guidelines for health and safety, environmental impact and ethical practice, and uses them within those guidelines. Uses guidelines to ensure technological equipment is used to its full capacity. Uses a computer to prepare a typed report

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Scale	IoC*	**Indicators of Competence**	**Technical Communication**
		diagrammatic, formatted or visual form.	from a hand-drafted report. Compares and contrasts different technologies and their impact, e.g. argues the case for new practices when using new technologies, reports on the effects of installation of new machinery. Writes a report on the impact of a particular technology for a specific audience, e.g. management committees, tri-partite committees. Reads a complex diagram to identify components and procedures for dealing with a technical fault or breakdown.

Reading — continued

Scale	IoC*	Indicators of Competence	Technical Communication
3	3.1 3.2 3.3	Reads and interprets texts of some complexity, integrating (where relevant) a number of pieces of information in order to generate meaning. Displays awareness of purpose of text, including unstated meaning. Interprets and extrapolates from texts containing data which is unambiguously presented in graphic, diagrammatic, formatted or visual form.	Reads a technical manual where the information is supported by diagrams, sufficiently well to be able to locate and comprehend particular information required, e.g. programs a VCR to record two programs in advance. Uses the author, title, key word and other search indexes of a library computer. Comprehends short summary information on computer-managed learning packages to choose a relevant package to suit own needs. Uses the word processing program on a computer to produce texts. Writes simple instructions for using familiar technology, e.g. how to use an automatic teller machine. Completes a formatted workplace test, e.g. damage or breakdown report. Writes a brief report on uses of technology, e.g. for classroom, workplace, domestic or community purposes.

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2	2.1 2.2	Reads and interprets short simple texts on a personally relevant topic. Locates specific information relating to familiar contexts in a test which may contain data in simple graphic, diagrammatic, formatted or visual form.	Reads short, relevant, explicit, clearly formatted texts related to technology, e.g. the author and title index of a library computer. Chooses a computer assisted learning package, having read short descriptions of one or two programs, to acquire a defined skill or area of knowledge. Writes a short description, e.g. describes a damaged part of a machine to facilitate repair. Extracts information from a list with language and numeracy components, e.g. price lists of components for computer systems. Records simple and routine information using the telephone, e.g. takes a phone message, on a form designed for this purpose. Interprets instructions, which combine pictorial and written information, e.g. directions on how to operate a piece of machinery safely.
1	1.1 1.2	Reads and identifies letter of the alphabet in the context of whole words, numbers, signs and symbols relating to personal details and immediate environment. Identifies specific information in a personally relevant text with familiar content, which may include personal details, location or calendar information in simple graphic, diagrammatic, formatted or visual form.	Recognisees very short, explicit, pictorial texts, e.g. understands logos related to worker safety before using a piece of machinery, reads letters on a keyboard. Reads graphic instructions accompanying a new piece of technology to learn new information or skills about a technology or medium, e.g. uses an automatic teller machine by following instructions given graphically on the screen. Types own name or single words into a computer-assisted learning program.

Note: IoC* — Indicators of Competency sub-level

Writing

Scale	IoC*	**Indicators of Competence**	**Technical Communication**
5	5.4	Demonstrates well-developed writing skills by selecting	Defines the purpose and objectives for the use of a particular technology, e.g. writes a report,

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Scale	IoC*	**Indicators of Competence**	**Technical Communication**
	5.5	stylistic devices to express complex relationships between ideas and purposes. Generates complex written texts with control over generic structure.	which includes a detailed analysis of technology as, applied in a particular workplace or environment. Draws on prior knowledge of the application of technology in researching the capacity of a new system, e.g. writes a briefing and recommends purchase or use of a particular system. Uses technological principles to reduce constraints presented by environmental or physical capacity, e.g. writes a report, which compares the effectiveness and efficiency of manual and computerised record management systems. Prepares a written or oral report, which critically evaluates the content, structure, and purpose of technical texts including graphic, diagrammatic or numerical information. Adapts task instructions to suit changes in technology, e.g. writes plain English instructions for the operation of a new machine based on the manufacturer's instructions. Draws from a number of sources and uses computer skills to prepare a report, e.g. CV and job application letter.
4	4.4 4.5	Communicates complex relationships between ideas by matching style of writing to purpose and audience. Generates written texts reflecting a range of genres and using appropriate structure and layout.	Compares and contrasts views on technology in newspaper articles. Interprets the purposes and objectives for the use of technology after the reading a brochure or manual. Selects technological practices to conform with the guidelines for health and safety, environmental impact and ethical practice, and uses them within those guidelines. Uses guidelines to ensure technological equipment is used to its full capacity. Uses a computer to prepare a typed report from a hand-drafted report. Compares and contrasts different technologies and their impact, e.g. argues the case for new practices when using new technologies, reports

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Scale	IoC*	**Indicators of Competence**	**Technical Communication**
			on the effects of installation of new machinery. Writes a report on the impact of a particular technology for a specific audience, e.g. management committees, tri-partite committees. Reads a complex diagram to identify components and procedures for dealing with a technical fault or breakdown.

Note: IoC* — Indicators of Competency sub-level

Writing — continued

Scale	**IoC***	**Indicators of Competence**	**Technical Communication**
3	3.4 3.5	Communicates relationships between ideas through selecting and using grammatical structures and notations, which are appropriate to the purpose. Produces and sequences paragraphs according to purpose of text.	Reads a technical manual where the information is supported by diagrams, sufficiently well to be able to locate and comprehend particular information required, e.g. programs a VCR to record two programs in advance. Uses the author, title, key-word and other search indexes of a library computer. Comprehends short summary information on computer-managed learning packages to choose a relevant package to suit own needs. Uses the word processing program on a computer to produce texts. Writes simple instructions for using familiar technology, e.g. how to use an automatic teller machine. Completes a formatted workplace test, e.g. damage or breakdown report. Writes a brief report on uses of technology, e.g. for classroom, workplace, domestic or community purposes.
2	2.3 2.4	Writes about a familiar topic using simple sentence structure and joining ideas through conjunctive links where appropriate. Completes forms or writes notes	Reads short, relevant, explicit, clearly formatted texts related to technology, e.g. the author and title index of a library computer. Chooses a computer assisted learning package, having read short descriptions of one or two programs, to acquire a defined skill or area of

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Scale	IoC*	Indicators of Competence	Technical Communication
		using factual or personal information relating to familiar contexts.	knowledge. Writes a short description, e.g. describes a damaged part of a machine to facilitate repair. Extracts information from a list with language and numeracy components, e.g. price lists of components for computer systems. Records simple and routine information using the telephone, e.g. takes a phone message, on a form designed for this purpose. Interprets instructions, which combine pictorial and written information, e.g. directions on how to operate a piece of machinery safely.
1	1.3 1.4 1.5	Copies letters of the alphabet, numbers, and dates in order to convey personal details such as name, address, telephone number. Writes basic personal details about self or others such as name, address, and signature. Writes one or two phrases/simple sentences conveying an idea, message or opinion drawing from a modelled text.	Recognisees very short, explicit, pictorial texts, e.g. understands logos related to worker safety before using a piece of machinery, reads letters on a keyboard. Reads graphic instructions accompanying a new piece of technology to learn new information or skills about a technology or medium, e.g. uses an automatic teller machine by following instructions given graphically on the screen. Types own name or single words into a computer-assisted learning program.

Note: IoC* — Indicators of Competency sub-level

Numeracy

Scale	IoC*	Indicators of Competence	Technical Communication
5	5.10 5.11 5.12	Interprets, selects and investigates appropriate mathematical information and relationships highly embedded in an activity, item or text. Selects and applies a wide range of mathematical strategies flexibly to generate solutions to problems across a	Calculates distance, length and location using the trigonometry and geometry of triangles in relevant situations, e.g. locates grid reference on a map for a boat travelling on an given bearing with time and speed specified; uses dimensions provided on a scaled plan of a roof to find the pitch or slope of the roof. Calculates quantities of materials to title the roof applying a 4% allowance for wastage. Plans and gathers information on a negotiated

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Scale	IoC*	Indicators of Competence	Technical Communication
		broad range of contexts. Uses a wide range of oral and written informal and formal language and representation including symbols, diagrams and charts to communicate mathematically.	topic form a variety of sources including government, industry and media about relevant community or workplace issues. Organises information by grouping. Graphically represents and analyses information for a particular purpose. Presents, individually or in a team, a report expressing a viewpoint, which is substantiated by discussion of supporting statistical evidence. Interprets and applies metric quantities and numbers in scientific notation, e.g. calculates the amount of oil in litres spilled from a tanker if it covers a surface area of water of approximately 1200 hectares (1.2 x 107m2) to a thickness of 6 x 103mm. Uses financial formulae, e.g. simple and compound interest to calculate and contrast the interest incurred in borrowing money from financial institutions.
4	4.10 4.11 4.12 4.13	Selects and investigates appropriate mathematical information and relationships embedded in an activity, item or text. Selects and applies an expanding range of mathematical strategies flexibly to solve problems in a variety of contexts. Examines and questions the appropriateness, possible interpretations and implications of aspects of a mathematical activity. Uses a range of oral and written informal and formal language and representation including symbols, diagrams and charts to communicate mathematically.	Uses ratio and scale to interpret dimensions on a basic plan. Applies similarity and ratio to estimate and calculate lengths, e.g. finds height of a building, a tree. Compares quality and costs of using imported vs Australian tiles, discount vs brand name paints. Presents information in appropriate graphical format to show different interpretations and influences, e.g. analysis of government spending on education. Applies formulae and interprets results relevant to a familiar practical situation, measuring the dimensions needed and substituting them into the formula, adjusting units where necessary, e.g. length of edging for circular garden or pond, capacity of a water tank or bath. Uses area and perimeter to calculate a range of options, e.g. given a certain length of fencing, plan a range of options for paddock dimensions, which meet specific area requirements. Calculates and contrasts monthly income from average sales, given a variety of salary options

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Scale	IoC*	Indicators of Competence	Technical Communication
			involving retainers and commission rates.

Note: IoC* — Indicators of Competency sub-level

Numeracy — continued

Scale	IoC*	Indicators of Competence	Technical Communication
3	3.10 3.11 3.12 3.13	Selects appropriate mathematical information embedded in a real life activity, item or text. Selects and applies a range of mathematical strategies to solve problems in a number of contexts which are familiar and may be interrelated. Reflects on and questions reasonableness and appropriateness of the purpose, process and outcomes of a mathematical activity. Uses oral and written informal and formal language and representation including symbols and diagrams to communicate mathematically.	Uses a distance scale to find the shortest route between two locations on a map and considers road terrain conditions in deciding preferred route. Expresses and calculates with metric quantities, e.g. interprets and costs quantities of cheese given different forms such as 350g, 0.35kg. Measures common three-dimensional shapes, e.g. room, and represents the information on an appropriate diagram drawn to scale. Calculates with common, fractions and metric measurements, e.g. adjusts the quantities in a recipe by halving or doubling to obtain the required amount. Uses a variety of methods to analyse advertising by comparing savings on a number of different items, e.g. at 12% off, 15% off, 1/3 off, price reduced by $10. Compares casual and permanent rates of pay over a given time span for work of the same nature.
2	2.9 2.10 2.11 2.12	Locates relevant mathematical information in a familiar real life activity text. Selects and uses straightforward mathematical actions in a familiar and predictable contexts. Uses estimation and prior experience to examine purpose and check reasonableness of the process and outcomes of a mathematical activity.	Compares measurements taken with estimated lengths of familiar objects, e.g. estimates and measures storeroom dimensions.

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Scale	IoC*	Indicators of Competence	Technical Communication
		Uses oral and written informal and formal language and representation some symbols and diagrams to communicate mathematically.	
1	1.10 1.11 1.12 1.13	Locates simple key mathematical information in a familiar real life activity text. Recognises and uses straightforward mathematical actions which relate to immediate contexts. Uses rough estimation and prior experience to identify purpose and check reasonableness of the process and outcomes of a mathematical activity. Uses everyday informal oral language and representation including familiar symbols and diagrams to communicate mathematically.	Estimates lengths of familiar objects using metric units, e.g. a person's height, height of doorway.

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UEG20114 Certificate II in Gas Supply Industry Operations

Modification History

Not applicable.

Description

Scope

This qualification provides competencies for entry level gas supply industry activities in transmission, distribution pipeline and cylinder operations and functions as outline below:

- Distribution pipeline activities include laying distribution infrastructure (including pipes), developing gas pipeline infrastructure and reading gas meters in industrial, commercial and rural environments, on pipelines, associated facilities and equipment; and control centres.
- Transmission pipeline activities include right of way preparation, rigging operations, hydrotesting, laying pipelines, operating transmission pipeline construction plant and equipment and conducting minor mechanical maintenance.
- Gas cylinder operations for domestic and industrial supply of gaseous fuels include checking, testing, maintaining and filling of gaseous fuel cylinders and the storage, handling, loading, transportation and distribution of cylinders in accordance with the relevant Australian Standards and regulatory requirements

This entry level qualification is at Australia Qualification Framework (AQF) level 2 and provides the required knowledge and skills for defined work activities to be carried out under close supervision

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Not applicable.

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Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units to achieve a total weighting of 120 points, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 240 points in accordance with the Elective Competency Standard Units tables below, resulting in the achievement of overall weighting of 360 points.
- All the required pre-requisite competency standard units have been met as required.

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
UEGNSG005A	Prepare to work in the gas industry	20
UEGNSG132A	Carry out basic work activities in a gas industry work environment	60
UEGNSG140A	Apply environmental policies and procedures in the utilities industry	20
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry	20
Total points in core		**120**

Elective Competency Standard Units Complete Elective units to achieve a total of weighting of **240** points from the following groups:			
Group		**Minimum points**	**Maximum points**
A	Imported and Common Elective Units Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be at AQF level 2. If units have not being assigned a weighting by the relevant E-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, refer to UEG11 Gas Industry Training Package, Version 2,	**0**	**60**

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	Qualification Framework		
B	Qualification AQF 2 Electives You may select all elective units from this Group	**180**	**240**

Group A – Imported and Common Elective Units You may complete units to maximum weighting of **60** points		**Weighting Points**
CPCCLDG3001A	Licence to perform dogging	30
CPCCLRG3001A	Licence to perform rigging basic level	40
CPCCOHS1001A	Work safely in the construction industry	10
CPPFES2005A	Demonstrate first attack firefighting equipment	15
HLTAID001	Provide cardiopulmonary resuscitation	10
HLTAID003	Provide first aid	10
HLTAID005	Provide first aid in remote situations	10
HLTHSE204D	Follow safe manual handling practices	20
MEM05004C	Perform routine oxy acetylene welding	20
MEM05012C	Perform routine manual metal arc welding	20
MSAPMOHS110A	Follow emergency response procedures	20
MSAPMOHS205A	Control minor incidents	30
MSAPMOHS216A	Operate breathing apparatus	20
MSAPMOHS217A	Gas test atmospheres	30
MSAPMPER200C	Work in accordance with an issued permit	20

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MSAPMPER201A	Monitor and control work permits	20
MSAPMPER202A	Observe permit work	20
MSAPMSUP210A	Process and record information	30
MSAPMSUP240A	Undertake minor maintenance	30
MSS402061A	Use SCADA systems in operations	30
PMAOHS211B	Prepare equipment for emergency response	20
PMAOMIR210B	Control evacuation to muster point	20
RIICCM205D	Carry out manual excavation	10
RIICCM206D	Support plant operations	10
RIICCM207D	Spread and compact materials manually	10
RIICCM208D	Carry out basic levelling	10
RIICCM210D	Install trench support	15
RIICRC208D	Lay pipes	40
RIIMPO308D	Conduct tracked dozer operations	40
RIIMPO318D	Conduct civil construction skid steer loader operations	70
RIIWHS202D	Enter and work in confined spaces	30
RIIWHS204D	Work safely at heights	20
RIIWHS205D	Control traffic with stop-slow bat	10
RIISAM201D	Handle resources and infrastructure materials and safely dispose of non-toxic materials	15
RIIWMG203D	Drain and dewater civil construction site	20
TLIB2004A	Carry out vehicle inspection	20
TLIC2002A	Drive light rigid vehicle	40

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TLIC2025A	Operate four wheel drive vehicle	40
TLIC3003A	Drive medium rigid vehicle	40
TLIC3004A	Drive heavy rigid vehicle	40
TLIC3005A	Drive heavy combination vehicle	40
TLID2003A	Handle dangerous goods/hazardous substances	40
TLID2010A	Operate a forklift	40
TLID2016A	Load and unload explosives and dangerous goods	30
TLID3033A	Operate a vehicle-mounted loading crane	40
TLIF2006A	Apply accident-emergency procedures	20
TLIF2010A	Apply Fatigue Management Strategies	30
TLIF2012A	Apply safe procedures when handling/transporting dangerous goods or explosives	30
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	40
TLILIC2001A	Licence to operate a forklift truck	40
TLILIC2014B	Licence to drive a light rigid vehicle	40
TLILIC2015B	Licence to drive a medium rigid vehicle	40
TLILIC2016B	Licence to drive a heavy rigid vehicle	50
TLILIC3017B	Licence to drive a heavy combination vehicle	60
UEENEEC001B	Maintain documentation	20
UEENEED101A	Use computer applications relevant to a workplace	20
	Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be at AQF level 2. If units have not being assigned a weighting by the relevant E-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, refer to Page 10, UEG11 Gas Industry	**Up to 60 points**

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	Training Package, Version 2, Qualification Framework	

Group B – Qualification AQF 2 Electives At least **180** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEGNSG004A	Locate, prove and protect utility assets	60
UEGNSG006A	Use a portable gas detector to locate escape	40
UEGNSG134A	Establish a utilities infrastructure work site	60
UEGNSG136A	Carry out transmission pipeline construction work activities	60
UEGNSG219A	Conduct excavations in the utilities industry	60
UEGNSG221A	First on site response to gas pipeline emergencies	90
UEGNSG224A	Construct and lay copper and stainless steel gas distribution pipelines	60
UEGNSG226A	Assist with the construction, laying and connection of gas distribution services to mains	40
UEGNSG227A	Assist with the construction and laying of gas distribution mains	40
UEGNSG330A	Coat metallic pipelines	80
UEGNSG331A	Establish right of way access for transmission pipeline construction	60
UEGNSG332A	Undertake hydro-testing for transmission pipeline construction	60
UEGNSG333A	Work in proximity of transmission pipeline construction plant and equipment	40

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UEGNSG342A	Maintain pipeline easements	40
UEGNSG615A	Fill LPG cylinders	80
UEGNSG616A	Refurbish gas cylinders	80
UEGNSG705A	Disconnect and reconnect small capacity gas meters	40
UEGNSG708A	Pressure Test Residential and Small Commercial Gas Installations	40
UEGNSG711A	Process meter reading information using appropriate technology	40
UEGNSG712A	Read and record meter readings	40
UEGNSG714A	Relight Type A gas appliances	60
UEGNSG804A	Maintain Single Stage and Single Run Gas Flow and Pressure Control and Measuring Devices	80
UEPOPS203B	Operate and monitor communications system	20
UEPOPS205B	Conduct minor mechanical maintenance	30
UETTDREL14A	Working safely near live electrical apparatus as a non-electrical worker	40

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

Custom Content Section

Not applicable.

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UEG30114 Certificate III in Gas Supply Industry Operations

Modification History

Not applicable.

Description

Scope

This qualification provides competencies to conduct Gas Supply Industry activities including installation, maintenance, fault find and repair, operations of distribution and transmission gas pipelines, cylinders and associated equipment.

It is an Australia Qualification Framework (AQF) level 3 qualification and provides the required knowledge and skills to carry out work activities autonomously and takes responsibility for their own work

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Not applicable.

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units to achieve a total weighting of 300 points, defined

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in the Core Competency Standard Units table below and

- A combination of Elective competency standard units to achieve a total weighting of 660 points in accordance with the Elective Competency Standard Units tables below, resulting in the achievement of overall weighting of 960 points.
- All the required pre-requisite competency standard units have been met as required.

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
UEGNSG005A	Prepare to work in the gas industry	20
UEGNSG132A	Carry out basic work activities in a gas industry work environment	60
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry	40
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry	20
BSBFLM303C	Contribute to effective workplace relationships	40
BSBFLM312C	Contribute to team effectiveness	40
BSBWHS301A	Maintain workplace safety	40
BSBWOR301B	Organise personal work priorities and development	40
Total points in core		**300**

Elective Competency Standard Units

Complete Elective units to achieve a total of weighting of **660** points from the following groups:

Group		**Minimum points**	**Maximum points**
A	Imported and Common Elective Units Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be at AQF level 3. If units have not being assigned a weighting by the relevant E-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further	**0**	**160**

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	information see Application of the NQC Flexibility Formula, refer to UEG11 Gas Industry Training Package, Version 2, Qualification Framework.		
B	Qualification AQF 2 Electives You may select some elective units from this Group	**0**	**180**
C	Qualification AQF 3 Electives You may select all your elective units from this Group	**330**	**660**
D	Qualification AQF 4 Electives You may select some elective units from this Group	**0**	**130**

Group A – Imported and Common Elective Units You may complete units to maximum weighting of **160** points		**Weighting Points**
BSBFLM305C	Support operational plan	40
BSBFLM306C	Provide workplace information and resourcing plans	40
BSBFLM309C	Support continuous improvement systems and processes	40
BSBFLM311C	Support a workplace learning environment	40
BSBINN301A	Promote innovation in a team environment	40
BSBWHS303A	Participate in WHS hazard identification, risk assessment and risk control	50
CPCCLDG3001A	Licence to perform dogging	30
CPCCLRG3001A	Licence to perform rigging basic level	40
CPCCLRG3002A	Licence to perform rigging intermediate level	40
CPCCOHS1001A	Work safely in the construction industry	10
CPPFES2005A	Demonstrate first attack firefighting equipment	15
HLTAID001	Provide cardiopulmonary resuscitation	10

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HLTAID003	Provide first Aid	10
HLTAID005	Provide first aid in remote situations	10
HLTHSE204D	Follow safe manual handling practices	20
MEM05004C	Perform routine oxy acetylene welding	20
MEM05012C	Perform routine manual metal arc welding	20
MEM05015D	Weld using manual metal arc welding process	40
MSAPMOHS110A	Follow emergency response procedures	20
MSAPMOHS205A	Control minor incidents	30
MSAPMOHS216A	Operate breathing apparatus	20
MSAPMOHS217A	Gas test atmospheres	30
MSAPMPER200C	Work in accordance with an issued permit	20
MSAPMPER201A	Monitor and control work permits	20
MSAPMPER202A	Observe permit work	20
MSAPMPER300C	Issue work permits	20
MSAPMPER400A	Coordinate permit process	30
MSAPMSUP200A	Achieve work outcomes	30
MSAPMSUP210A	Process and record information	30
MSAPMSUP240A	Undertake minor maintenance	30
MSAPMSUP30	Identify equipment faults	40

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3A		
MSAPMSUP390A	Use structured problem solving tools	40
MSS402061A	Use SCADA systems in operations	30
MSS402080A	Undertake root cause analysis	50
PMAOHS211B	Prepare equipment for emergency response	20
PMAOHS310B	Investigate incidents	30
PMAOHS311B	Lead emergency teams	20
PMAOMIR210B	Control evacuation to muster point	20
PMAOMIR346B	Assess and secure an incident site	30
PMAOPS305B	Operate process control systems	60
PMAOPS312B	Undertake ship loading/unloading operations	40
PMAOPS330B	Communicate and monitor pipeline activities	40
PMASUP311A	Operate communications hub	40
PMBWELD301B	Butt weld polyethylene plastic pipelines	20
PMBWELD302B	Electrofusion weld polyethylene pipelines	20
PMC563081C	Carry out stock control	20
RIICCM205D	Carry out manual excavation	10
RIICCM206D	Support plant operations	10
RIICCM207D	Spread and compact materials manually	10
RIICCM208D	Carry out basic levelling	10
RIICCM210D	Install trench support	15
RIICRC208D	Lay pipes	40
RIIHAN309D	Conduct Telescopic Materials Handler Operations	80

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RIIMPO304D	Conduct wheel loader operations	40
RIIMPO308D	Conduct tracked dozer operations	40
RIIMPO309D	Conduct wheeled dozer operations	40
RIIMPO318D	Conduct civil construction skid steer loader operations	70
RIIMPO319D	Conduct backhoe/loader operations	50
RIIMPO320D	Conduct civil construction excavator operations	80
RIIWHS202D	Enter and work in confined spaces	30
RIIWHS204D	Work safely at heights	20
RIIWHS205D	Control traffic with stop-slow bat	10
RIIWHS302D	Implement traffic management plan	20
RIISAM201D	Handle resources and infrastructure materials and safely dispose of non-toxic materials	15
RIIWMG203D	Drain and dewater civil construction site	20
TLIB2004A	Carry out vehicle inspection	20
TLIC2002A	Drive light rigid vehicle	40
TLIC2025A	Operate four wheel drive vehicle	40
TLIC3003A	Drive medium rigid vehicle	40
TLIC3004A	Drive heavy rigid vehicle	40
TLIC3005A	Drive heavy combination vehicle	40
TLIC4067A	Operate LP gas tanker	40
TLID2003A	Handle dangerous goods/hazardous substances	40
TLID2010A	Operate a forklift	40
TLID2016A	Load and unload explosives and dangerous goods	30
TLID3015A	Identify and label explosives and dangerous goods	20
TLID3023A	Use specialised liquid bulk gas transfer equipment	40

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TLID3027A	Prepare for transport of dangerous goods	50
TLID3033A	Operate a vehicle-mounted loading crane	40
TLID3036A	Lift and move load using a mobile crane	40
TLIF2006A	Apply accident-emergency procedures	20
TLIF2010A	Apply Fatigue Management Strategies	30
TLIF2012A	Apply safe procedures when handling/transporting dangerous goods or explosives	30
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	40
TLILIC2001A	Licence to operate a forklift truck	40
TLILIC2014B	Licence to drive a light rigid vehicle	40
TLILIC2015B	Licence to drive a medium rigid vehicle	40
TLILIC2016B	Licence to drive a heavy rigid vehicle	50
TLILIC3006A	Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)	60
TLILIC3008A	Licence to operate a slewing mobile crane (up to 20 tonnes)	70
TLILIC3013A	Preparation to transport dangerous goods by road	50
TLILIC3017B	Licence to drive a heavy combination vehicle	60
TLILIC3018B	Licence to drive a multi combination vehicle	60
TLILIC4009A	Licence to operate a slewing mobile crane (up to 60 tonnes)	70
UEENEEC001B	Maintain documentation	20
UEENEED101A	Use computer applications relevant to a workplace	20
	Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	**Up to 160 points**

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	Note: For further information see Application of the NQC Flexibility Formula, Page 10, UEG11 Gas Industry Training Package, Version 1, Volume 1 Qualification Framework	

Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEGNSG004A	Locate, prove and protect utility assets	60
UEGNSG006A	Use a portable gas detector to locate escape	40
UEGNSG134A	Establish a utilities infrastructure work site	60
UEGNSG136A	Carry out transmission pipeline construction work activities	60
UEGNSG140A	Apply environmental policies and procedures in the utilities industry	20
UEGNSG219A	Conduct excavations in the utilities industry	60
UEGNSG221A	First on site response to gas pipeline emergencies	90
UEGNSG224A	Construct and lay copper and stainless steel gas distribution pipelines	60
UEGNSG226A	Assist with the construction, laying and connection of gas distribution services to mains	40
UEGNSG227A	Assist with the construction and laying of gas distribution mains	40
UEGNSG330A	Coat metallic pipelines	80
UEGNSG331A	Establish right of way access for transmission pipeline construction	60

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Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEGNSG332A	Undertake hydro-testing for transmission pipeline construction	60
UEGNSG333A	Work in proximity of transmission pipeline construction plant and equipment	40
UEGNSG342A	Maintain pipeline easements	40
UEGNSG615A	Fill LPG cylinders	80
UEGNSG616A	Refurbish gas cylinders	80
UEGNSG705A	Disconnect and reconnect small capacity gas meters	40
UEGNSG708A	Pressure Test Residential and Small Commercial Gas Installations	40
UEGNSG711A	Process meter reading information using appropriate technology	40
UEGNSG712A	Read and record meter readings	40
UEGNSG714A	Relight Type A gas appliances	60
UEGNSG804A	Maintain single stage and single run gas flow and pressure control and measuring devices	80
UEPOPS203B	Operate and Monitor Communications System	20
UEPOPS205B	Conduct Minor Mechanical Maintenance	30
UETTDREL14A	Working safely near live electrical apparatus as a non-electrical worker	40

Group C – Qualification AQF 3 Electives At least **330** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEENEEM020A	Attend to breakdowns in hazardous areas — gas atmospheres	20
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20

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Group C – Qualification AQF 3 Electives At least **330** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEGNSG135A	Monitor and control gas odourisation	100
UEGNSG137A	Operate and maintain gas station water bath heaters	60
UEGNSG138A	Install and commission stationary gas fuelled turbine engines	60
UEGNSG139A	Repair and maintain stationary gas fuelled turbine engines	60
UEGNSG142A	Conduct isolations under the permit to work system for gas industry work sites	80
UEGNSG212B	Construct, lay and connect a gas distribution service to a plastic main	60
UEGNSG213B	Construct, lay and connect a gas distribution service to a steel main	60
UEGNSG216A	Commission or decommission gas distribution pipelines	100
UEGNSG217A	Launch and recover PIGs in a gas distribution pipeline	100
UEGNSG218A	Carry out surveillance on gas distribution assets	90
UEGNSG220A	Construct and lay Polyethylene gas distribution mains	60
UEGNSG222A	Construct and lay nylon or PVC gas distribution mains	60
UEGNSG223A	Construct and lay steel gas distribution pipelines	60
UEGNSG225A	Perform routine maintenance on distribution pipeline facilities and equipment	100
UEGNSG228A	Construct and lay large copper gas distribution pipelines	60
UEGNSG229A	Prepare simple drawings of as laid gas mains and services	40
UEGNSG344A	Commission or decommission gas transmission pipelines	120
UEGNSG346A	Launch and recover PIGs in gas transmission pipelines	100
UEGNSG347A	Perform routine maintenance on transmission pipeline facilities and equipment	110
UEGNSG348A	Supervise the operation of plant and equipment for the construction of gas transmission pipelines	60

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Group C – Qualification AQF 3 Electives At least **330** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEGNSG349A	Carry out surveillance of gas transmission pipelines	110
UEGNSG350A	First response to a gas facility event	60
UEGNSG352A	Check and report on gas station conditions	40
UEGNSG353A	Carry out aerial surveillance of gas transmission pipelines	60
UEGNSG354A	Control excavations in the vicinity of gas transmission pipelines	60
UEGNSG355A	Monitor and report on cathodic protection systems	60
UEGNSG356A	Monitor and operate flow control, pressure measuring and regulating devices for gas transmission	100
UEGNSG411A	Maintain cathodic protection systems	100
UEGNSG412A	Install cathodic protection systems	110
UEGNSG506A	Respond to gas infrastructure emergencies	80
UEGNSG507A	Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices	90
UEGNSG508A	Remotely check and report on gas station conditions	40
UEGNSG614A	Load, unload, exchange and connect LPG cylinders	80
UEGNSG617A	Monitor and control the transfer of bulk LPG	100
UEGNSG618A	Process Liquefied Petroleum Gas (LPG)	100
UEGNSG619A	Perform scheduled maintenance on gas processing or storage facilities and equipment	110
UEGNSG620A	Organise the repair of faults in LPG processing or storage facilities and equipment	80
UEGNSG621A	Control bulk storage of LPG	110
UEGNSG622A	Assess the operational capability of gas safety equipment on a delivery vehicle	40
UEGNSG706A	Test New Residential and Small Commercial Gas Installations	60

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Group C – Qualification AQF 3 Electives At least **330** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEGNSG713A	Investigate billing exceptions-conditions	60
UEGNSG805A	Maintain multi-stage and multi-run gas flow and pressure measuring and regulating devices	80
UEGNSG807A	Install Gas Flow, Measuring and Pressure Regulating Devices	80
UEGNSG811A	Monitor and operate complex flow control, measuring and regulating devices for gas distribution	110
UEPMNT367A	Install and commission stationary gas fuelled reciprocating engines	60
UEPMNT368A	Repair and maintain stationary gas fuelled reciprocating engines	60
UEPOPS317B	Operate and Monitor Fixed Fire Protection Systems	30
UEPOPS336B	Manage, operate and monitor a gas turbine unit	60
UEPOPS347B	Operate and monitor supervisory, control and data acquisition systems	40

Group D – Qualification AQF 4 Electives You may complete units to maximum weighting of **130** points		**Weighting Points**
UEGNSG106B	Coordinate repair of pipeline, facilities and equipment	110
UEGNSG108B	Operate and monitor pipeline control systems	60
UEGNSG109B	Control field pipeline operations	60
UEGNSG110B	Supervise technical operations for gas distribution or transmission	60
UEGNSG111B	Produce maintenance strategies and plans for a gas facility	80
UEGNSG131A	Compile a gas industry technical report	20
UEGNSG204B	Coordinate and conduct gas distribution pipeline repair and modifications	110

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Group D – Qualification AQF 4 Electives You may complete units to maximum weighting of **130** points		**Weighting Points**
UEGNSG207B	Coordinate construction, laying and testing of gas distribution pipelines	110
UEGNSG210B	Supervise and monitor contract staff for work on distribution pipelines	120
UEGNSG305B	Coordinate gas transmission pipeline repair and modifications	110
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines	40
UEGNSG310B	Supervise and monitor contract work	60
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline	80
UEGNSG314B	Liaise with third party and the community to maintain pipeline integrity and community safety	40
UEGNSG319B	Custody transfer metering and gas quality analysis	80
UEGNSG324A	Follow procedures to deal with incidents related to the abuse of drugs and alcohol	60
UEGNSG325A	Coordinate the operation of relevant plant and equipment for transmission pipeline construction	80
UEGNSG326A	Coordinate and monitor staff and contractors	60
UEGNSG327A	Coordinate transmission pipeline construction operations	60
UEGNSG511A	Operate gas infrastructure to meet nominated demand	120
UEGNSG512A	Control centre communication with gas industry stakeholders	110
UEGNSG514A	Monitoring and controlling field activities	110
UEGNSG515A	Use control centre systems to monitor and control gas infrastructure	110
UEGNSG611B	Control LPG storage/processing operations	110
UEGNSG612B	Supervise technical operations for liquefied petroleum gas storage and processing	120
UEGNSG806A	Maintain SCADA controlled gas flow and pressure & electronic gas measurement equipment	100

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Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

Custom Content Section

Not applicable.

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UEG40114 Certificate IV in Gas Supply Industry Operations

Modification History

This is a replacement qualification for UEG40311 Certificate IV in Gas Supply Industry Operations

Description

Scope

This qualification provides competencies to supervise and conduct Gas Supply Industry activities including installation, diagnostics and maintenance of distribution and transmission gas pipelines, cylinders and associated equipment.

It is an Australia Qualification Framework (AQF) level 4 qualification and provides the required knowledge and skills to carry out specialised and/or skilled routine and non-routine work activities autonomously and takes limited responsibility for the work of others.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Not applicable.

Packaging Rules

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units to achieve a total weighting of 290 points, defined in the Core Competency Standard Units table below and

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- A combination of Elective competency standard units to achieve a total weighting of 990 points in accordance with the Elective Competency Standard Units tables below, resulting in the achievement of overall weighting of 1280 points.
- All the required pre-requisite competency standard units have been met as required.

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
UEGNSG005A	Prepare to work in the gas industry	20
UEGNSG132A	Carry out basic work activities in a gas industry work environment	60
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry	40
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry	20
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20
BSBMGT402A	Implement operational plan	40
BSBWOR402A	Promote team effectiveness	50
BSBWOR404B	Develop Work Priorities	40
	Total points in core	**290**

Elective Competency Standard Units

Complete Elective units to achieve a total of weighting of **990** points from the following groups:

Group		**Minimum points**	**Maximum points**
A	Imported and Common Elective Units Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be at AQF level 4. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula,	**0**	**220**

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	refer to UEG11 Gas Industry Training Package, Version 2, Qualification Framework.		
B	Qualification AQF 2 Electives You may select some elective units from this Group	**0**	**180**
C	Qualification AQF 3 Electives You may select some elective units from this Group	**0**	**670**
D	Qualification AQF 4 Electives You may select all your elective units from this Group	**200**	**990**

Group A – Imported and Common Elective Units You may complete units to maximum weighting of **220** points		**Weighting Points**
BSBCUS401B	Coordinate implementation of customer service strategies	40
BSBFLM303C	Contribute to effective workplace relationships	40
BSBFLM305C	Support operational plan	40
BSBFLM306C	Provide workplace information and resourcing plans	40
BSBFLM309C	Support continuous improvement systems and processes	40
BSBFLM311C	Support a workplace learning environment	40
BSBFLM312B	Contribute to team effectiveness	40
BSBINM401A	Implement workplace information system	40
BSBINN301A	Promote innovation in a team environment	40
BSBLED401A	Develop teams and individuals	40
BSBMGT403A	Implement continuous improvement	40
BSBWHS301A	Maintain workplace safety	40
BSBWHS303A	Participate in WHS hazard identification, risk assessment and risk control	50
BSBWOR301B	Organise personal work priorities and development	40
BSBWOR401A	Establish effective workplace relationships	50

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CPCCLDG3001A	Licence to perform dogging	30
CPCCLRG3001A	Licence to perform rigging basic level	40
CPCCLRG3002A	Licence to perform rigging intermediate level	40
CPCCOHS1001A	Work safely in the construction industry	10
CPCPCM4012A	Estimate and cost work	40
CPPFES2005A	Demonstrate first attack firefighting equipment	15
HLTAID001	Provide cardiopulmonary resuscitation	10
HLTAID003	Provide first aid	10
HLTAID005	Provide first aid in remote situations	10
HLTHSE204D	Follow safe manual handling practices	20
MEM05004C	Perform routine oxy acetylene welding	20
MEM05012C	Perform routine manual metal arc welding	20
MEM05015D	Weld using manual metal arc welding process	40
MEM05045B	Perform pipe welds to code standards using manual metal arc welding process	60
MSAPMOHS110A	Follow emergency response procedures	20
MSAPMOHS205A	Control minor incidents	30
MSAPMOHS216A	Operate breathing apparatus	20
MSAPMOHS217A	Gas test atmospheres	30
MSAPMOPS400A	Optimise process/plant area	60

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MSAPMPER200C	Work in accordance with an issued permit	20
MSAPMPER201A	Control work permits	20
MSAPMPER202A	Monitor and control work permits	20
MSAPMPER300C	Issue work permits	20
MSAPMPER400A	Coordinate permit process	30
MSAPMSUP210A	Process and record information	30
MSAPMSUP240A	Undertake minor maintenance	30
MSAPMSUP303A	Identify equipment faults	40
MSS402061A	Use SCADA systems in operations	30
MSS402080A	Undertake root cause analysis	50
PMAOHS211B	Prepare equipment for emergency response	20
PMAOHS310B	Investigate incidents	30
PMAOHS311B	Lead emergency teams	20
PMAOMIR210B	Control evacuation to muster point	20
PMAOMIR346B	Assess and secure an incident site	30
PMAOMIR407B	Audit incident preparedness and established response systems	80
PMAOMIR418B	Coordinate incident response	40
PMAOMIR430B	Conduct and assess incident exercises	35

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PMAOMIR444B	Develop incident containment tactics	40
PMAOPS312B	Undertake ship loading/unloading operations	40
PMAOPS402A	Respond to abnormal process situations	50
PMAOPS405A	Operate complex control systems	80
PMAOPS410B	Monitor remote production facilities	40
PMASUP410B	Develop plant documentation	30
PMASUP444A	Plan plant preparation and isolation	50
PMBWELD301B	Butt weld polyethylene plastic pipelines	20
PMBWELD302B	Electrofusion weld polyethylene pipelines	20
PMC563081C	Carry out stock control	20
RIICCM205D	Carry out manual excavation	10
RIICCM206D	Support plant operations	10
RIICCM207D	Spread and compact materials manually	10
RIICCM208D	Carry out basic levelling	10
RIICCM210D	Install trench support	15
RIICRC208D	Lay pipes	40
RIIHAN309D	Conduct Telescopic Materials Handler Operations	80
RIIMPO304D	Conduct wheel loader operations	40
RIIMPO308D	Conduct tracked dozer operations	40
RIIMPO309D	Conduct wheeled dozer operations	40
RIIMPO318D	Conduct civil construction skid steer loader operations	70
RIIMPO319D	Conduct backhoe/loader operations	50
RIIMPO320D	Conduct civil construction excavator operations	80

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RIIWHS202D	Enter and work in confined spaces	30
RIIWHS204D	Work safely at heights	20
RIIWHS205D	Control traffic with stop-slow bat	10
RIIWHS302D	Implement traffic management plan	20
RIIRIS301D	Apply risk management processes	40
RIISAM201D	Handle resources and infrastructure materials and safely dispose of non-toxic materials	15
RIIWMG203D	Drain and dewater civil construction site	20
TLIB2004A	Carry out vehicle inspection	20
TLIC2002A	Drive light rigid vehicle	40
TLIC2025A	Operate four wheel drive vehicle	40
TLIC3003A	Drive medium rigid vehicle	40
TLIC3004A	Drive heavy rigid vehicle	40
TLIC3005A	Drive heavy combination vehicle	40
TLIC4006A	Drive multi-combination vehicle	40
TLIC4067A	Operate LP gas tanker	40
TLID2003A	Handle dangerous goods/hazardous substances	40
TLID2010A	Operate a forklift	40
TLID2016A	Load and unload explosives and dangerous goods	30
TLID3015A	Identify and label explosives and dangerous goods	20
TLID3023A	Use specialised liquid bulk gas transfer equipment	40
TLID3027A	Prepare for transport of dangerous goods	50
TLID3033A	Operate a vehicle-mounted loading crane	40
TLID3036A	Lift and move load using a mobile crane	40
TLIF2006A	Apply accident-emergency procedures	20

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TLIF2010A	Apply Fatigue Management Strategies	30
TLIF2012A	Apply safe procedures when handling/transporting dangerous goods or explosives	30
TLIF3063A	Administer the implementation of fatigue management strategies	50
TLIF3093A	Implement chain of responsibility regulations	30
TLIF3096A	Carry out emergency response to a dangerous goods incident	40
TLIF4007A	Implement and coordinate accident-emergency procedures	40
TLIF4065A	Ensure compliance with Australian Dangerous Goods Code	70
TLIF4066A	Implement and supervise transport regulations compliance systems	80
TLIF4094A	Ensure compliance with chain of responsibility	40
TLIL4059A	Implement asset management systems	40
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	40
TLILIC2001A	Licence to operate a forklift truck	40
TLILIC2014B	Licence to drive a light rigid vehicle	40
TLILIC2015B	Licence to drive a medium rigid vehicle	40
TLILIC2016B	Licence to drive a heavy rigid vehicle	50
TLILIC3006A	Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)	60
TLILIC3008A	Licence to operate a slewing mobile crane (up to 20 tonnes)	70
TLILIC3013A	Preparation to transport dangerous goods by road	50
TLILIC3017B	Licence to drive a heavy combination vehicle	60
TLILIC3018B	Licence to drive a multi combination vehicle	60
TLILIC4009A	Licence to operate a slewing mobile crane (up to 60 tonnes)	70
UEENEEC001	Maintain documentation	20

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B		
UEENEED101A	Use computer applications relevant to a workplace	20
	Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, Page 10, UEG11 Gas Industry Training Package, Version 1, Volume 1 Qualification Framework	**Up to 220 points**

Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEGNSG004A	Locate, prove and protect utility assets	60
UEGNSG006A	Use a portable gas detector to locate escape	40
UEGNSG134A	Establish a utilities infrastructure work site	60
UEGNSG136A	Carry out transmission pipeline construction work activities	60
UEGNSG140A	Apply environmental policies and procedures in the utilities industry	20
UEGNSG219A	Conduct excavations in the utilities industry	60
UEGNSG221A	First on site response to gas pipeline emergencies	90
UEGNSG224A	Construct and lay copper and stainless steel gas distribution pipelines	60

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UEGNSG226A	Assist with the construction, laying and connection of gas distribution services to mains	40
UEGNSG227A	Assist with the construction and laying of gas distribution mains	40
UEGNSG330A	Coat metallic pipelines	80
UEGNSG331A	Establish right of way access for transmission pipeline construction	60
UEGNSG332A	Undertake hydro-testing for transmission pipeline construction	60
UEGNSG333A	Work in proximity of transmission pipeline construction plant and equipment	40
UEGNSG342A	Maintain pipeline easements	40
UEGNSG615A	Fill LPG cylinders	80
UEGNSG616A	Refurbish gas cylinders	80
UEGNSG705A	Disconnect and reconnect small capacity gas meters	40
UEGNSG708A	Pressure Test Residential and Small Commercial Gas Installations	40
UEGNSG711A	Process meter reading information using appropriate technology	40
UEGNSG712A	Read and record meter readings	40
UEGNSG714A	Relight Type A gas appliances	60
UEGNSG804A	Maintain single stage and single run gas flow and pressure control and measuring devices	80
UEPOPS203B	Operate and Monitor Communications System	20
UEPOPS205B	Conduct Minor Mechanical Maintenance	30
UETTDREL14A	Working safely near live electrical apparatus as a non-electrical worker (moved from Group A)	40

Group C – Qualification AQF 3 Electives You may complete units to maximum weighting of **670** points	**Weighting Points**

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Group C – Qualification AQF 3 Electives You may complete units to maximum weighting of **670** points		**Weighting Points**
UEENEEM020A	Attend to breakdowns in hazardous areas — gas atmospheres	20
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20
UEGNSG135A	Monitor and control gas odourisation	100
UEGNSG137A	Operate and maintain gas station water bath heaters	60
UEGNSG138A	Install and commission stationary gas fuelled turbine engines	60
UEGNSG139A	Repair and maintain stationary gas fuelled turbine engines	60
UEGNSG142A	Conduct isolations under the permit to work system for gas industry work sites	80
UEGNSG212B	Construct, lay and connect a gas distribution service to a plastic main	60
UEGNSG213B	Construct, lay and connect a gas distribution service to a steel main	60
UEGNSG216A	Commission or decommission gas distribution pipelines	100
UEGNSG217A	Launch and recover PIGs in a gas distribution pipeline	100
UEGNSG218A	Carry out surveillance on gas distribution assets	90
UEGNSG220A	Construct and lay Polyethylene gas distribution mains	60
UEGNSG222A	Construct and lay nylon or PVC gas distribution mains	60
UEGNSG223A	Construct and lay steel gas distribution pipelines	60
UEGNSG225A	Perform routine maintenance on distribution pipeline facilities and equipment	100
UEGNSG228A	Construct and lay large copper gas distribution pipelines	60
UEGNSG229A	Prepare simple drawings of as laid gas mains and services	40
UEGNSG344A	Commission or decommission gas transmission pipelines	120
UEGNSG346A	Launch and recover PIGs in gas transmission pipelines	100

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Group C – Qualification AQF 3 Electives You may complete units to maximum weighting of **670** points		**Weighting Points**
UEGNSG347A	Perform routine maintenance on transmission pipeline facilities and equipment	110
UEGNSG348A	Supervise the operation of plant and equipment for the construction of gas transmission pipelines	60
UEGNSG349A	Carry out surveillance of gas transmission pipelines	110
UEGNSG350A	First response to a gas facility event	60
UEGNSG352A	Check and report on gas station conditions	40
UEGNSG353A	Carry out aerial surveillance of gas transmission pipelines	60
UEGNSG354A	Control excavations in the vicinity of gas transmission pipelines	60
UEGNSG355A	Monitor and report on cathodic protection systems	60
UEGNSG356A	Monitor and operate flow control, pressure measuring and regulating devices for gas transmission	100
UEGNSG411A	Maintain cathodic protection systems	100
UEGNSG412A	Install cathodic protection systems	110
UEGNSG506A	Respond to gas infrastructure emergencies	80
UEGNSG507A	Remotely monitor and operate gas transmission flow and pressure measuring and regulating device	90
UEGNSG508A	Remotely check and report on gas station conditions	40
UEGNSG614A	Load, unload, exchange and connect LPG cylinders	80
UEGNSG617A	Monitor and control the transfer of bulk LPG	100
UEGNSG618A	Process Liquefied Petroleum Gas (LPG)	100
UEGNSG619A	Perform scheduled maintenance on gas processing or storage facilities and equipment	110
UEGNSG620A	Organise the repair of faults in LPG processing or storage facilities and equipment	80
UEGNSG621A	Control bulk storage of LPG	110

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Group C – Qualification AQF 3 Electives You may complete units to maximum weighting of **670** points		**Weighting Points**
UEGNSG622A	Assess the operational capability of gas safety equipment on a delivery vehicle	40
UEGNSG706A	Test New Residential and Small Commercial Gas Installations	60
UEGNSG713A	Investigate billing exceptions-conditions	60
UEGNSG805A	Maintain multi-stage and multi-run gas flow and pressure measuring and regulating devices	80
UEGNSG807A	Install Gas Flow, Measuring and Pressure Regulating Devices	80
UEGNSG811A	Monitor and operate complex flow control, measuring and regulating devices for gas distribution	110
UEPMNT367A	Install and commission stationary gas fuelled reciprocating engines	60
UEPMNT368A	Repair and maintain stationary gas fuelled reciprocating engines	60
UEPOPS317B	Operate and Monitor Fixed Fire Protection Systems	30
UEPOPS336B	Operate and monitor a gas turbine unit	60
UEPOPS347B	Operate and monitor supervisory, control and data acquisition systems	40

Group D – Qualification AQF 4 Electives At least **200** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEGNSG106B	Coordinate repair of pipeline, facilities and equipment	110
UEGNSG108B	Operate and monitor pipeline control systems	60
UEGNSG109B	Control field pipeline operations	60
UEGNSG110B	Supervise technical operations for gas distribution or transmission	60
UEGNSG111B	Produce maintenance strategies and plans for a gas facility	80

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Group D – Qualification AQF 4 Electives At least **200** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEGNSG131A	Compile a gas industry technical report	20
UEGNSG204B	Coordinate and conduct gas distribution pipeline repair and modifications	110
UEGNSG207B	Coordinate construction, laying and testing of gas distribution pipelines	110
UEGNSG210B	Supervise and monitor contract staff for work on distribution pipelines	120
UEGNSG305B	Coordinate gas transmission pipeline repair and modifications	110
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines	40
UEGNSG310B	Supervise and monitor contract work	60
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline	80
UEGNSG314B	Liaise with third party and the community to maintain pipeline integrity and community safety	40
UEGNSG319B	Custody transfer metering and gas quality analysis	80
UEGNSG324A	Follow company procedures to deal with incidents related to the abuse of drugs and alcohol	60
UEGNSG325A	Coordinate the operation of relevant plant and equipment for transmission pipeline construction	80
UEGNSG326A	Coordinate and monitor staff and contractors	60
UEGNSG327A	Coordinate transmission pipeline construction operations	60
UEGNSG511A	Operate gas infrastructure to meet nominated demand	120
UEGNSG512A	Control centre communication with gas industry stakeholders	110
UEGNSG514A	Managing and controlling field activities	110
UEGNSG515A	Use control centre systems to monitor and control gas infrastructure	110
UEGNSG611B	Control LPG storage/processing operations	110

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Group D – Qualification AQF 4 Electives At least **200** points to be achieved from this group. You may select all your elective units from this Group.		**Weighting Points**
UEGNSG612B	Supervise technical operations for liquefied petroleum gas storage and processing	120
UEGNSG806A	Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment	100

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

Custom Content Section

Not applicable.

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UEG50114 Diploma of Gas Supply Industry Operations

Modification History

This is a replacement qualification for UEG50211 Diploma of Gas Supply Industry Operations

Description

Scope

This qualification provides competencies to manage Gas Supply Industry activities including management of projects covering the installation, diagnostics and maintenance of distribution and transmission gas pipelines and associated equipment.

It is an Australia Qualification Framework (AQF) level 5 qualification which provides integrated technical and theoretical concepts in a broad range of contexts to undertake advanced skilled or paraprofessional work which includes the analysis of information to complete a range of activities, developing solutions to complex problems and providing information and skills to others.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Not applicable.

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated

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and achieved for:

- All the Core competency standard units to achieve a total weighting of 280 points, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 1320 points in accordance with the Elective Competency Standard Units table below, resulting in the achievement of overall weighting of 1600 points.
- All the required pre-requisite competency standard units have been met as required

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
UEGNSG005A	Prepare to work in the gas industry	20
UEGNSG132A	Carry out basic work activities in a gas industry work environment	60
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry	40
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry	20
UEGNSG113B	Manage a utilities industry OHS management system	80
UEGNSG120B	Manage gas system environmental compliance	60
Total points in core		**280**

Elective Competency Standard Units Complete Elective units to achieve a total of weighting of **1260** points from the following groups:		
Group	**Minimum points**	**Maximum points**

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A	Imported and Common Elective Units Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be at AQF level 5. If units have not being assigned a weighting by the relevant E-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, refer to UEG11 Gas Industry Training Package, Version 2, Qualification Framework.	0	260
B	Qualification AQF 2 Electives	0	180
C	Qualification AQF 3 Electives	330	670
D	Qualification AQF 4 Electives	300	810
E	Qualification AQF 5 Electives	180	340

Group A – Imported and Common Elective Units You may complete units to a maximum weighting of **260**		**Weighting Points**
BSBCUS501C	Manage quality customer service	40
BSBFLM309C	Support continuous improvement systems and processes	40
BSBINM501A	Manage an information or knowledge management system	50
BSBINN502A	Build and sustain an innovative work environment	50
BSBLED501A	Develop a workplace learning environment	60
BSBMGT502B	Manage people performance	70
BSBMGT515A	Manage operational plan	60
BSBMGT516C	Facilitate continuous improvement	60
BSBWHS501A	Ensure a Safe Workplace	60
BSBWOR501B	Manage personal work priorities and professional development	60
BSBWOR502B	Ensure team effectiveness	60
PMAOMIR512B	Establish incident response preparedness and response systems	70

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	Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, Page 10, UEG11 Gas Industry Training Package, Version 1, Volume 1 Qualification Framework	**Up to 260 points**

Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEENEEE102A	Fabricate, assemble, and dismantle utilities industry components	40
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEGNSG004A	Locate, prove and protect utility assets	60
UEGNSG006A	Use a portable gas detector to locate escape	40
UEGNSG134A	Establish a utilities infrastructure work site	60
UEGNSG136A	Carry out transmission pipeline construction work activities	60
UEGNSG140A	Apply environmental policies and procedures in the utilities industry	20
UEGNSG219A	Conduct excavations in the utilities industry	60
UEGNSG221A	First on site response to gas pipeline emergencies	90
UEGNSG224A	Construct and lay copper and stainless steel gas distribution pipelines	60
UEGNSG226A	Assist with the construction, laying and connection of gas distribution services to mains	40
UEGNSG227A	Assist with the construction and laying of gas distribution mains	40

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Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEGNSG330A	Coat metallic pipelines	80
UEGNSG331A	Establish right of way access for transmission pipeline construction	60
UEGNSG332A	Undertake hydro-testing for transmission pipeline construction	60
UEGNSG333A	Work in proximity of transmission pipeline construction plant and equipment	40
UEGNSG342A	Maintain pipeline easements	40
UEGNSG615A	Fill LPG cylinders	80
UEGNSG616A	Refurbish gas cylinders	80
UEGNSG705A	Disconnect and reconnect small capacity gas meters	40
UEGNSG708A	Pressure Test Residential and Small Commercial Gas Installations	40
UEGNSG711A	Process meter reading information using appropriate technology	40
UEGNSG712A	Read and record meter readings	40
UEGNSG714A	Relight Type A gas appliances	60
UEGNSG804A	Maintain single stage and single run gas flow and pressure control and measuring devices	80
UEPOPS203B	Operate and Monitor Communications System	20
UEPOPS205B	Conduct Minor Mechanical Maintenance	30
UETTDREL14A	Working safely near live electrical apparatus as a non-electrical worker (moved from Group A)	40

Group C – Qualification AQF 3 Electives Complete units to at least **330** points, with a maximum weighting of **670** points		**Weighting Points**
UEENEEM020A	Attend to breakdowns in hazardous areas — gas atmospheres	20

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UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20
UEGNSG135A	Monitor and control gas odourisation	100
UEGNSG137A	Operate and maintain gas station water bath heaters	60
UEGNSG138A	Install and commission stationary gas fuelled turbine engines	60
UEGNSG139A	Repair and maintain stationary gas fuelled turbine engines	60
UEGNSG142A	Conduct isolations under the permit to work system for gas industry work sites	80
UEGNSG212B	Construct, lay and connect a gas distribution service to a plastic main	60
UEGNSG213B	Construct, lay and connect a gas distribution service to a steel main	60
UEGNSG216A	Commission or decommission gas distribution pipelines	100
UEGNSG217A	Launch and recover PIGs in a gas distribution pipeline	100
UEGNSG218A	Carry out surveillance on gas distribution assets	90
UEGNSG220A	Construct and lay Polyethylene gas distribution mains	60
UEGNSG222A	Construct and lay nylon or PVC gas distribution mains	60
UEGNSG223A	Construct and lay steel gas distribution pipelines	60
UEGNSG225A	Perform routine maintenance on distribution pipeline facilities and equipment	100
UEGNSG228A	Construct and lay large copper gas distribution pipelines	60
UEGNSG229A	Prepare simple drawings of as laid gas mains and services	40
UEGNSG344A	Commission or decommission gas transmission pipelines	120
UEGNSG346A	Launch and recover PIGs in gas transmission pipelines	100
UEGNSG347A	Perform routine maintenance on transmission pipeline facilities and equipment	110
UEGNSG348A	Supervise the operation of plant and equipment for the construction of gas transmission pipelines	60

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UEGNSG349A	Carry out surveillance of gas transmission pipelines	110
UEGNSG350A	First response to a gas facility event	60
UEGNSG352A	Check and report on gas station conditions	40
UEGNSG353A	Carry out aerial surveillance of gas transmission pipelines	60
UEGNSG354A	Control excavations in the vicinity of gas transmission pipelines	60
UEGNSG355A	Monitor and report on cathodic protection systems	60
UEGNSG356A	Monitor and operate flow control, pressure measuring and regulating devices for gas transmission	100
UEGNSG411A	Maintain cathodic protection systems	100
UEGNSG412A	Install cathodic protection systems	110
UEGNSG506A	Respond to gas infrastructure emergencies	80
UEGNSG507A	Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices	90
UEGNSG508A	Remotely check and report on gas station conditions	40
UEGNSG614A	Load, unload, exchange and connect LPG cylinders	80
UEGNSG617A	Monitor and control the transfer of bulk LPG	100
UEGNSG618A	Process Liquefied Petroleum Gas (LPG)	100
UEGNSG619A	Perform scheduled maintenance on gas processing or storage facilities and equipment	110
UEGNSG620A	Organise the repair of faults in LPG processing or storage facilities and equipment	80
UEGNSG621A	Control bulk storage of LPG	110
UEGNSG622A	Assess the operational capability of gas safety equipment on a delivery vehicle	40
UEGNSG706A	Test New Residential and Small Commercial Gas Installations	60
UEGNSG713A	Investigate billing exceptions-conditions	60
UEGNSG811A	Monitor and operate complex flow control, measuring and	110

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	regulating devices for gas distribution	
UEGNSG805A	Maintain Multi-Stage and Multi-Run Gas Flow and Pressure Measuring and Regulating Devices	80
UEGNSG807A	Install Gas Flow, Measuring and Pressure Regulating Devices	80
UEPMNT367A	Install and commission stationary gas fuelled reciprocating engines	60
UEPMNT368A	Repair and maintain stationary gas fuelled reciprocating engines	60
UEPOPS317B	Operate and Monitor Fixed Fire Protection Systems	30
UEPOPS336B	Manage, operate and monitor a gas turbine unit	60
UEPOPS347B	Operate and monitor supervisory, control and data acquisition systems	40

Group D – Qualification AQF 4 Electives Complete units to at least **300** points, with a maximum weighting of **810** points.		**Weighting Points**
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20
UEGNSG106B	Coordinate repair of pipeline, facilities and equipment	110
UEGNSG108B	Operate and monitor pipeline control systems	60
UEGNSG109B	Control field pipeline operations	60
UEGNSG110B	Supervise technical operations for gas distribution or transmission	60
UEGNSG111B	Produce maintenance strategies and plans for a gas facility	80
UEGNSG131A	Compile a gas industry technical report	20
UEGNSG204B	Coordinate and conduct gas distribution pipeline repair and modifications	110
UEGNSG207B	Coordinate construction, laying and testing of gas distribution pipelines	110
UEGNSG210B	Supervise and monitor contract staff for work on distribution pipelines	120

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UEGNSG305B	Coordinate gas transmission pipeline repair and modifications	110
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines	40
UEGNSG310B	Supervise and monitor contract work	60
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline	40
UEGNSG314B	Liaise with third party and the community to maintain pipeline integrity and community safety	40
UEGNSG319B	Custody transfer metering and gas quality analysis	80
UEGNSG324A	Follow company procedures to deal with incidents related to the abuse of drugs and alcohol	60
UEGNSG325A	Coordinate the operation of relevant plant and equipment for transmission pipeline construction	80
UEGNSG326A	Coordinate and monitor staff and contractors	60
UEGNSG327A	Coordinate transmission pipeline construction operations	60
UEGNSG511A	Operate gas infrastructure to meet nominated demand	120
UEGNSG512A	Control centre communication with gas industry stakeholders	110
UEGNSG514A	Managing and controlling field activities	110
UEGNSG515A	Use control centre systems to monitor and control gas infrastructure	110
UEGNSG611B	Control LPG storage/processing operations	110
UEGNSG612B	Supervise technical operations for liquefied petroleum gas storage and processing	120
UEGNSG806A	Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment	100

Group E – Qualification AQF 5 Electives Complete units to at least **180** points, with a maximum weighting of **340** points.		**Weighting Points**
UEGNSG513A	Manage emergencies and critical incidents for gas infrastructure	120

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Group E – Qualification AQF 5 Electives Complete units to at least **180** points, with a maximum weighting of **340** points.		**Weighting Points**
UEGNSG114B	Coordinate and monitor implementation of a risk management plan for a utilities industry facility	100
UEGNSG115B	Manage gas systems projects	80
UEGNSG116B	Manage Gas Industry physical resources	80

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

Custom Content Section

Not applicable.

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UEG60114 Advanced Diploma of Gas Supply Industry Operations

Modification History

This is a replacement qualification for UEG60211 Advanced Diploma of Gas Supply Industry Operations

Description

Scope

This qualification provides competencies to design and manage Gas Supply Industry activities and projects.

It is an Australia Qualification Framework (AQF) level 6 qualification which provides integrated technical and theoretical concepts in a broad range of contexts to undertake advanced skilled or paraprofessional work activities and the management of projects and staff.

Pathways Information

Not applicable.

Licensing/Regulatory Information

Not applicable.

Entry Requirements

Not applicable.

Employability Skills Summary

Not applicable.

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units to achieve a total weighting of 400 points, defined

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in the Core Competency Standard Units table below and

- A combination of Elective competency standard units to achieve a total weighting of 1760 points in accordance with the Elective Competency Standard Units table below, resulting in the achievement of overall weighting of 2160 points.
- All the required pre-requisite competency standard units have been met as required

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
UEGNSG005A	Prepare to work in the gas industry	20
UEGNSG132A	Carry out basic work activities in a gas industry work environment	60
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry	40
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry	20
UEGNSG113B	Manage a utilities industry OHS management system	80
UEGNSG120B	Manage gas system environmental compliance	60
UEGNSG123B	Manage financial resources in a gas industry facility	120
Total points in core		**400**

Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 1760 points from the following groups:		
Group	**Minimum points**	**Maximum points**

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A	Imported and Common Elective Units Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be at AQF level 6. If units have not being assigned a weighting by the relevant E-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, refer to UEG11 Gas Industry Training Package, Version 2, Qualification Framework.	0	360
B	Qualification AQF 2 Electives	0	180
C	Qualification AQF 3 Electives	330	670
D	Qualification AQF 4 Electives	300	810
E	Qualification AQF 5 Electives	180	340
F	Qualification AQF 6 Electives	440	540

Group A – Imported and Common Elective Units Complete units to a maximum weighting of **360**		**Weighting Points**
BSBCUS501C	Manage quality customer service	40
BSBFLM309C	Support continuous improvement systems and processes	40
BSBINM501A	Manage an information or knowledge management system	50
BSBINM601A	Manage knowledge and information	80
BSBINN502A	Build and sustain an innovative work environment	50
BSBINN601B	Manage organisational change	60
BSBLED501A	Develop a workplace learning environment	60
BSBMGT502B	Manage people performance	70
BSBMGT515A	Manage operational plan	60
BSBMGT516C	Facilitate continuous improvement	60
BSBWHS501A	Ensure a Safe Workplace	60

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BSBWHS601A	Apply legislative frameworks for WHS	40
BSBWHS602A	Facilitate WHS activities	50
BSBWHS603A	Implement WHS risk management	50
BSBWOR501B	Manage personal work priorities and professional development	60
BSBWOR502B	Ensure team effectiveness	60
PMAOMIR512B	Establish incident response preparedness and response systems	70
	Imported units from other qualifications, training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, Page 10, UEG11 Gas Industry Training Package, Version 1, Volume 1 Qualification Framework	**Up to 360 points**

Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEGNSG004A	Locate, prove and protect utility assets	60
UEGNSG006A	Use a portable gas detector to locate escape	40
UEGNSG134A	Establish a utilities infrastructure work site	60
UEGNSG136A	Carry out transmission pipeline construction work activities	60
UEGNSG140A	Apply environmental policies and procedures in the utilities industry	20

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Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEGNSG219A	Conduct excavations in the utilities industry	60
UEGNSG221A	First on site response to gas pipeline emergencies	90
UEGNSG224A	Construct and lay copper and stainless steel gas distribution pipelines	60
UEGNSG226A	Assist with the construction, laying and connection of gas distribution services to mains	40
UEGNSG227A	Assist with the construction and laying of gas distribution mains	40
UEGNSG330A	Coat metallic pipelines	80
UEGNSG331A	Establish right of way access for transmission pipeline construction	60
UEGNSG332A	Undertake hydro-testing for transmission pipeline construction	60
UEGNSG333A	Work in proximity of transmission pipeline construction plant and equipment	40
UEGNSG342A	Maintain pipeline easements	40
UEGNSG615A	Fill LPG cylinders	80
UEGNSG616A	Refurbish gas cylinders	80
UEGNSG705A	Disconnect and reconnect small capacity gas meters	40
UEGNSG708A	Pressure Test Residential and Small Commercial Gas Installations	40
UEGNSG711A	Process meter reading information using appropriate technology	40
UEGNSG712A	Read and record meter readings	40
UEGNSG714A	Relight Type A gas appliances	40
UEGNSG804A	Maintain single stage and single run gas flow and pressure control and measuring devices	80
UEPOPS203B	Operate and Monitor Communications System	20

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Group B – Qualification AQF 2 Electives You may complete units to maximum weighting of **180** points		**Weighting Points**
UEPOPS205B	Conduct Minor Mechanical Maintenance	30
UETTDREL14A	Working safely near live electrical apparatus as a non-electrical worker (moved from Group A)	40

Group C – Qualification AQF 3 Electives Complete units to at least **330** points, with a maximum weighting of **670** points		**Weighting Points**
UEENEEM020A	Attend to breakdowns in hazardous areas — gas atmospheres	20
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20
UEGNSG135A	Monitor and control gas odourisation	100
UEGNSG137A	Operate and maintain gas station water bath heaters	60
UEGNSG138A	Install and commission stationary gas fuelled turbine engines	60
UEGNSG139A	Repair and maintain stationary gas fuelled turbine engines	60
UEGNSG142A	Conduct isolations under the permit to work system for gas industry work sites	80
UEGNSG212B	Construct, lay and connect a gas distribution service to a plastic main	60
UEGNSG213B	Construct, lay and connect a gas distribution service to a steel main	60
UEGNSG216A	Commission or decommission gas distribution pipelines	100
UEGNSG217A	Launch and recover PIGs in a gas distribution pipeline	100
UEGNSG218A	Carry out surveillance on gas distribution assets	90
UEGNSG220A	Construct and lay Polyethylene gas distribution mains	60
UEGNSG222A	Construct and lay nylon or PVC gas distribution mains	60
UEGNSG223A	Construct and lay steel gas distribution pipelines	60

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UEGNSG225A	Perform routine maintenance on distribution pipeline facilities and equipment	100
UEGNSG228A	Construct and lay large copper gas distribution pipelines	60
UEGNSG229A	Prepare simple drawings of as laid gas mains and services	40
UEGNSG344A	Commission or decommission gas transmission pipelines	120
UEGNSG346A	Launch and recover PIGs in gas transmission pipelines	100
UEGNSG347A	Perform routine maintenance on transmission pipeline facilities and equipment	110
UEGNSG348A	Supervise the operation of plant and equipment for the construction of gas transmission pipelines	60
UEGNSG349A	Carry out surveillance of gas transmission pipelines	110
UEGNSG350A	First response to a gas facility event	60
UEGNSG352A	Check and report on gas station conditions	40
UEGNSG353A	Carry out aerial surveillance of gas transmission pipelines	60
UEGNSG354A	Control excavations in the vicinity of gas transmission pipelines	60
UEGNSG355A	Monitor and report on cathodic protection systems	60
UEGNSG356A	Monitor and operate flow control, pressure measuring and regulating devices for gas transmission	100
UEGNSG411A	Maintain cathodic protection systems	100
UEGNSG412A	Install cathodic protection systems	110
UEGNSG506A	Respond to gas infrastructure emergencies	80
UEGNSG507A	Remotely monitor and operate gas transmission flow and pressure measuring and regulating device	90
UEGNSG508A	Remotely check and report on gas station conditions	40
UEGNSG614A	Load, unload, exchange and connect LPG cylinders	80
UEGNSG617A	Monitor and control the transfer of bulk LPG	100
UEGNSG618A	Process Liquefied Petroleum Gas (LPG)	100

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UEGNSG619A	Perform scheduled maintenance on gas processing or storage facilities and equipment	110
UEGNSG620A	Organise the repair of faults in LPG processing or storage facilities and equipment	80
UEGNSG621A	Control bulk storage of LPG	110
UEGNSG622A	Assess the operational capability of gas safety equipment on a delivery vehicle	40
UEGNSG706A	Test New Residential and Small Commercial Gas Installations	60
UEGNSG713A	Investigate billing exceptions-conditions	60
UEGNSG805A	Maintain Multi-Stage and Multi-Run Gas Flow and Pressure Measuring and Regulating Devices	80
UEGNSG807A	Install Gas Flow, Measuring and Pressure Regulating Devices	80
UEGNSG811A	Monitor and operate complex flow control, measuring and regulating devices for gas distribution	110
UEPMNT367A	Install and commission stationary gas fuelled reciprocating engines	60
UEPMNT368A	Repair and maintain stationary gas fuelled reciprocating engines	60
UEPOPS317B	Operate and Monitor Fixed Fire Protection Systems	30
UEPOPS336B	Operate and monitor a gas turbine unit	60
UEPOPS347B	Operate and monitor supervisory, control and data acquisition systems	40

Group D – Qualification AQF 4 Electives Complete units to at least **300** points, with a maximum weighting of **810** points.		**Weighting Points**
UEGNSG106B	Coordinate repair of pipeline, facilities and equipment	110
UEGNSG108B	Operate and monitor pipeline control systems	60
UEGNSG109B	Control field pipeline operations	60
UEGNSG110B	Supervise technical operations for gas distribution or transmission	60

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UEGNSG111B	Produce maintenance strategies and plans for a gas facility	80
UEGNSG131A	Compile a gas industry technical report	20
UEGNSG204B	Coordinate and conduct gas distribution pipeline repair and modifications	110
UEGNSG207B	Coordinate construction, laying and testing of gas distribution pipelines	110
UEGNSG210B	Supervise and monitor contract staff for work on distribution pipelines	120
UEGNSG305B	Coordinate gas transmission pipeline repair and modifications	110
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines	40
UEGNSG310B	Supervise and monitor contract work	60
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline	40
UEGNSG314B	Liaise with third party and the community to maintain pipeline integrity and community safety	40
UEGNSG319B	Custody transfer metering and gas quality analysis	80
UEGNSG324A	Follow company procedures to deal with incidents related to the abuse of drugs and alcohol	60
UEGNSG325A	Coordinate the operation of relevant plant and equipment for transmission pipeline construction	80
UEGNSG326A	Coordinate and monitor staff and contractors	60
UEGNSG327A	Coordinate transmission pipeline construction operations	60
UEGNSG511A	Operate gas infrastructure to meet nominated demand	120
UEGNSG512A	Control centre communication with gas industry stakeholders	110
UEGNSG514A	Managing and controlling field activities	110
UEGNSG515A	Use control centre systems to monitor and control gas infrastructure	110
UEGNSG611B	Control LPG storage/processing operations	110
UEGNSG612B	Supervise technical operations for liquefied petroleum gas	120

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	storage and processing	
UEGNSG806A	Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment	100

Group E – Qualification AQF 5 Electives Complete units to at least **180** points, with a maximum weighting of **340** points.		**Weighting Points**
UEGNSG513A	Manage emergencies and critical incidents for gas infrastructure	120
UEGNSG114B	Coordinate and monitor implementation of a risk management plan for a utilities industry facility	100
UEGNSG115B	Manage gas systems projects	80
UEGNSG116B	Manage Gas Industry physical resources	80

Group F – Qualification AQF 6 Electives Complete units to at least **440** points, with a maximum weighting of **540** points		**Weighting Points**
UEGNSG117B	Plan and implement the data acquisition and metering requirements of a gas system	120
UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications	120
UEGNSG119B	Manage workplace risk in a Gas Industry facility	60
UEGNSG121B	Prepare safe design specifications of a gas system	120
UEGNSG122B	Manage a customer service gas business unit	120

Note:

1. Prerequisite pathways shall be identified and met for all elective units selected.

2. In selecting elective units considerations to career planning advice should be given to units that form part of a prerequisite pathway for the progression to achieve particular competencies or qualification at a higher level.

END OF QUALIFICATION

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Custom Content Section

Not applicable.

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UEGSS00001 Basic gas supply industry work activities

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

The units of competency in this skill set will contribute to the completion of relevant Certificate II, Certificate III, Certificate IV, Diploma and Advanced Diploma qualifications from the UEG11 Version 2 Gas Training Package. Please consult the packaging rules of the relevant qualification for further advice.

Licensing/Regulatory Information

Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.

Skill Set Requirements

UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

Target Group

The skill set is targeted at those entering the gas supply industry and covers the gas

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supply industry, workplace health and safety, and environmental requirements and basic work activities. There are no pre-requisites units.

Suggested words for Statement of Attainment

This Skill Set from the UEG11Gas Training Package meets the industry requirements for: Basic Gas Supply Industry Work Activities

Custom Content Section

Not applicable.

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UEGSS00002 Construct and lay steel gas distribution mains

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

The units of competency in this skill set will contribute to the completion of relevant Certificate III, Certificate IV, Diploma and Advanced Diploma qualifications from the UEG11 Version 2 Gas Training Package. Please consult the packaging rules of the relevant qualification for further advice.

Licensing/Regulatory Information

Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.

Skill Set Requirements

UEGNSG223A	Construct and lay steel gas distribution mains
UEGNSG134A	Establish a utilities infrastructure work site

Target Group

It is essential that anyone undertaking this skill set already hold or concurrently complete the following pre-requisite Competency Standard Unit/s:

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG005A	Prepare to work in the gas industry

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UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

These units can be completed in:

- Skill Set UEG11 Basic gas supply industry work activities, or
- Any of the UEG11 qualifications from Certificate II to Advanced Diploma

Suggested words for Statement of Attainment

This Skill Set from the UEG11Gas Training Package meets the industry requirements for: Construct and Lay Steel Gas Distribution Mains

Custom Content Section

Not applicable.

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UEGSS00003 Construct and lay nylon or PVC gas distribution mains

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

The units of competency in this skill set will contribute to the completion of relevant Certificate III, Certificate IV, Diploma and Advanced Diploma qualifications from the UEG11 Version 2 Gas Training Package. Please consult the packaging rules of the relevant qualification for further advice.

Licensing/Regulatory Information

Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.

Skill Set Requirements

UEGNSG222A	Construct and lay nylon or PVC gas distribution mains
UEGNSG134A	Establish a utilities infrastructure work site

Target Group

It is essential that anyone undertaking this skill set already hold or concurrently complete the following pre-requisite Competency Standard Unit/s:

UEGNSG132A	Carry out basic work activities in a gas industry work environment

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UEGNSG005A	Prepare to work in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

These units can be completed in:

- Skill Set UEG11 Basic gas supply industry work activities, or
- Any of the UEG11 qualifications from Certificate II to Advanced Diploma

Suggested words for Statement of Attainment

This Skill Set from the UEG11Gas Training Package meets the industry requirements for: Construct and Lay Nylon or PVC Gas Distribution Mains

Custom Content Section

Not applicable.

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UEGSS00004 Construct and lay Polyethylene gas distribution mains

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

The units of competency in this skill set will contribute to the completion of relevant Certificate III, Certificate IV, Diploma and Advanced Diploma qualifications from the UEG11 Version 2 Gas Training Package. Please consult the packaging rules of the relevant qualification for further advice.

Licensing/Regulatory Information

Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.

Skill Set Requirements

UEGNSG220A	Construct and lay Polyethylene gas distribution mains
UEGNSG134A	Establish a utilities infrastructure work site

Target Group

It is essential that anyone undertaking this skill set already hold or concurrently complete the following pre-requisite Competency Standard Unit/s:

UEGNSG132A	Carry out basic work activities in a gas industry work environment

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UEGNSG005A	Prepare to work in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

These units can be completed in:

- Skill Set UEG11 Basic gas supply industry work activities, or
- Any of the UEG11 qualifications from Certificate II to Advanced Diploma

Suggested words for Statement of Attainment

This Skill Set from the UEG11Gas Training Package meets the industry requirements for: Construct and Lay Polyethylene Gas Distribution Mains

Custom Content Section

Not applicable.

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UEGSS00005 Construct, lay and connect a gas distribution service to steel mains

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

The units of competency in this skill set will contribute to the completion of relevant Certificate III, Certificate IV, Diploma and Advanced Diploma qualifications from the UEG11 Version 2 Gas Training Package. Please consult the packaging rules of the relevant qualification for further advice.

Licensing/Regulatory Information

Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.

Skill Set Requirements

UEGNSG213B	Construct, lay and connect a single point gas distribution service to a steel main
UEGNSG134A	Establish a utilities infrastructure work site

Target Group

It is essential that anyone undertaking this skill set already hold or concurrently complete the following pre-requisite Competency Standard Unit/s:

UEGNSG132A	Carry out basic work activities in a gas industry work environment

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UEGNSG005A	Prepare to work in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

These units can be completed in:

- Skill Set UEG11 Basic gas supply industry work activities, or
- Any of the UEG11 qualifications from Certificate II to Advanced Diploma

Suggested words for Statement of Attainment

This Skill Set from the UEG11Gas Training Package meets the industry requirements for Gas UEG11 Construct, Lay and Connect a Gas Distribution Service to Steel Mains

Custom Content Section

Not applicable.

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UEGSS00006 Construct, lay and connect gas distribution service to plastic mains

Modification History

Not applicable.

Description

Not applicable.

Pathways Information

The units of competency in this skill set will contribute to the completion of relevant Certificate III, Certificate IV, Diploma and Advanced Diploma qualifications from the UEG11 Version 2 Gas Training Package. Please consult the packaging rules of the relevant qualification for further advice.

Licensing/Regulatory Information

Readers should ensure that they have also read the part of the Training Package that outlines licensing and regulatory requirements.

Skill Set Requirements

UEGNSG212B	Construct, lay and connect a single point gas distribution service to a plastic main
UEGNSG134A	Establish a utilities infrastructure work site

Target Group

It is essential that anyone undertaking this skill set already hold or concurrently complete the following pre-requisite Competency Standard Unit/s:

UEGNSG132A	Carry out basic work activities in a gas industry work environment

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UEGNSG005A	Prepare to work in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

These units can be completed in:

- Skill Set UEG11 Basic gas supply industry work activities, or
- Any of the UEG11 qualifications from Certificate II to Advanced Diploma

Suggested words for Statement of Attainment

This Skill Set from the UEG11Gas Training Package meets the industry requirements for: Construct, Lay and Connect Gas Distribution Service to Plastic Mains

Custom Content Section

Not applicable.

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BSBCUS401B Coordinate implementation of customer service strategies

Modification History

Release	Comments
Release 1	This version first released with *BSB07 Business Training Package version 6.0.* Revised unit. Performance criteria amended so that the learner is not required to 'incorporate evidence of customer satisfaction in decision to modify products or services'. Required skills updated to focus on learning and development practices and compliance with policy and procedures. Replaces BSBCUS401A Coordinate implementation of customer service strategies

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to advise on, carry out and evaluate customer service strategies, including the design of improvement strategies based on feedback. Operators may have responsibility to provide guidance or to delegate aspects of these tasks to others.

Application of the Unit

This unit applies to individuals with a broad knowledge of customer service strategies who contribute well developed skills in addressing customer needs and problems.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Advise on customer service needs	1.1 Clarify and accurately assess ***customer needs*** using appropriate ***communication techniques***
	1.2 Diagnose problems matching service delivery to ***customers*** and develop options for improved service within ***organisational requirements***
	1.3 Provide relevant and constructive advice to promote the improvement of customer service delivery
	1.4 Use ***business technology*** and/or ***online services*** to structure and present information on customer service needs
2. Support implementation of customer service strategies	2.1 Ensure customer service strategies and opportunities are promoted to ***designated individuals and groups***
	2.2 Identify and allocate available budget resources to fulfil customer service objectives
	2.3 Promptly action ***procedures to resolve customer difficulties*** and ***complaints*** within organisational requirements
	2.4 Ensure that decisions to implement ***strategies*** are taken in consultation with designated individuals and groups
3. Evaluate and report on customer service	3.1 Review client satisfaction with service delivery using verifiable data in accordance with organisational requirements
	3.2 Identify and report changes necessary to maintain service standards to designated individuals and groups
	3.3 Prepare conclusions and recommendations from verifiable evidence and provide constructive advice on future directions of

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	client service strategies 3.4 Maintain systems, records and reporting procedures to compare changes in customer satisfaction

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to
  - communicate effectively with personnel and clients at all levels
  - articulate customer service strategies
- interpersonal skills to:
  - build relationships with customers
  - establish rapport
- literacy skills to:
  - prepare general information and papers
  - read a variety of texts
  - write formal and informal letters according to target audience
- planning skills to develop implementation schedules
- problem-solving skills to diagnose organisational problems relating to customer services
- self-management skills to:
  - comply with policies and procedures
  - consistently evaluate and monitor own performance
  - seek learning opportunities.

Required knowledge

- key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as:
  - anti-discrimination legislation
  - ethical principles
  - codes of practice
  - privacy laws
  - environmental issues
  - occupational health and safety (OHS)
- principles of customer service
- organisational business structure, products and services
- product and service standards and best practice models.

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Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • identifying needs and priorities of the organisation in delivering services to customers • responding to and reporting on customer feedback • designing strategies to improve delivery of products and services • knowledge of the principles of customer service.
Context of and specific resources for assessment	Assessment must ensure: • access to an actual workplace or simulated environment • access to office equipment and resources • examples of customer complaints, feedback and strategies.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • review of documentation reporting changes necessary to maintain service standards • analysis of responses to case studies and scenarios • demonstration of techniques • observation of presentations • oral or written questioning to assess knowledge of customer service techniques and strategies • review of systems, records and reporting procedures to compare changes in customer satisfaction.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Customer needs may relate to:	• accuracy of information • advice or general information • complaints • fairness/politeness • further information • making an appointment • prices/value • purchasing organisation's products and services • returning organisation's products and services • specific information.
Communication techniques may include:	• analysing customer satisfaction surveys • analysing quality assurance data • conducting interviews • consultation methods, techniques and protocols • making recommendations • obtaining management decisions • questioning • seeking feedback to confirm understanding • summarising and paraphrasing.
Customers may include:	• corporate customers • individual members of the organisation • individual members of the public • internal or external • other agencies.
Organisational requirements may include:	• access and equity principles and practice • anti-discrimination and related policy • confidentiality and security requirements • defined resource parameters • ethical standards • goals, objectives, plans, systems and processes • legal and organisational policies, guidelines and requirements • OHS policies, procedures and programs

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	• payment and delivery options • pricing and discount policies • quality and continuous improvement processes and standards • quality assurance and/or procedures manuals • replacement and refund policy and procedures • who is responsible for products or services.
Business technology may include:	• answering machine • binder • computer • fax machine • photocopier • printer • shredder • telephone.
Online services may include:	• access to product database by customers online • access to purchase, delivery and account records • contact centre • online ordering • online payments • online registration • quick/reasonable response • two-way communication online.
Designated individuals and groups may include:	• colleagues • committee • customers • external organisation • line management • supervisor.
Procedures to resolve customer difficulties may include:	• external agencies (e.g. Ombudsman) • item replacement • referrals to supervisor • refund of monies • review of products or services • using conflict management techniques.

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Customer complaints may include:	• administrative errors such as incorrect invoices or prices
	• customer satisfaction with service quality
	• damaged goods or goods not delivered
	• delivery errors
	• products not delivered on time
	• service errors
	• specific e-business problems and issues:
	  • difficulty accessing services
	  • inactive links
	  • not appreciating differing hardware and software
	  • services not available
	  • supply errors such as incorrect product delivered
	  • time taken to access services
	  • unfriendly website design
	  • website faults
	• warehouse or store room errors such as incorrect product delivered.

Customer service ***strategies*** may include:	• courtesy/politeness • delivery times • merchandise characteristics • price offers • product/refund guarantees • product/service availability.

Unit Sector(s)

Stakeholder Relations – Customer Service

Custom Content Section

Not applicable.

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BSBCUS501C Manage quality customer service

Modification History

Release	Comments
Release 1	New release of this Qualification released with *version 6 of BSB07* Business *Services Training Package*. Revised unit. Required skills updated to focus on learning and development practices and compliance with policy and procedures.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to develop strategies to manage organisational systems that ensure products and services are delivered and maintained to standards agreed by the organisation.

Operators may have staff involved in delivering customer service and are responsible for the quality of their work. In many instances the work will occur within the organisation's policies and procedures framework. At this level, the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies, will be required.

Application of the Unit

Many managers are involved in ensuring that products and services are delivered and maintained to standards agreed by the organisation.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Plan to meet internal and external customer requirements	1.1 Investigate, identify, assess, and include the needs of ***customers*** in planning processes 1.2 Ensure plans achieve the ***quality***, time and cost specifications agreed with customers
2. Ensure delivery of quality products and services	2.1 Deliver ***products and services*** to customer specifications within organisation's business plan 2.2 Monitor team performance to consistently meet the organisation's quality and delivery standards 2.3 Assist colleagues to overcome difficulty in meeting customer service standards
3. Monitor, adjust and review customer service	3.1 Develop and use ***strategies*** to monitor progress in achieving product and/or service targets and standards 3.2 Develop and use strategies to obtain customer feedback to improve the provision of products and services 3.3. Develop, procure and use ***resources*** effectively to provide quality products and services to customers 3.4 Make decisions to overcome problems and to adapt customer services, products and service delivery in consultation with appropriate individuals and groups 3.5 Manage records, reports and recommendations within the organisation's systems and processes

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

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Required skills

- analytical skills to identify trends and positions of products and services
- communication skills to:
  - coach and mentor staff and colleagues
  - monitor and advise on customer service strategies
- literacy skills to:
  - edit and proofread texts to ensure clarity of meaning and accuracy of grammar and punctuation
  - prepare general information and papers according to target audience
  - read and understand a variety of texts
- problem-solving skills to:
  - deal with customer enquiries or complaints
  - deal with complex and non-routine difficulties
- technology skills to select and use technology appropriate to a task
- self-management skills to:
  - comply with policies and procedures
  - consistently evaluate and monitor own performance
  - seek learning opportunities.

Required knowledge

- key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as:
  - anti-discrimination legislation
  - Australian consumer law
  - ethical principles
  - codes of practice
  - privacy laws
  - financial legislation
  - occupational health and safety (OHS)
- organisational policy and procedures for customer service including handling customer complaints
- service standards and best practice models
- public relations and product promotion
- techniques for dealing with customers, including customers with specific needs
- techniques for solving complaints including the principles and techniques involved in the management and organisation of:
  - customer behaviour
  - customer needs research
  - customer relations
  - ongoing product and/or service quality

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- problem identification and resolution
- quality customer service delivery
- record keeping and management methods
- strategies for monitoring, managing and introducing ways to improve customer service relationships
- strategies to obtain customer feedback.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • plans, policies or procedures for delivering quality customer service • demonstrated techniques in solving complex customer complaints and system problems that lead to poor customer service • knowledge of techniques for solving complaints.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment of written reports • demonstration of techniques • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of performance in role plays • evaluation of leadership, supervision, coaching and mentoring used to assist colleagues to overcome difficulty in meeting customer service standards • review of strategies developed and used to monitor progress in achieving product and/or service targets and standards • review of records, reports and recommendations about managing customer service.

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Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Customers may be:	• Board members • clients, purchasers of services • co-workers, peers and fellow frontline managers • members of the general public who make contact with the organisation, such as prospective purchasers of services • potential funding bodies • supervisors • suppliers of goods and services and contractors providing goods and services.
Quality may refer to:	• characteristics of a product, system, service or process that meet the requirements of customers and interested parties.
Products and services may include:	• either products or services • goods • ideas • infrastructure • private or public sets of benefits.
Strategies may refer to:	• databases and other controls to record and compare data over time • electronic feedback mechanisms using intranet, internet and email • feedback forms and other devices to enable communication from customers • long-term or short-term plans for monitoring achievement and evaluating effectiveness • policies and procedures • questionnaires, survey and interviews • training and development activities.

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Resources may include:	• buildings/facilities • equipment • finance • information • people • power/energy • technology • time.

Unit Sector(s)

Stakeholder Relations – Customer Service

Custom Content Section

Not applicable.

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BSBFLM303C Contribute to effective workplace relationships

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to gather information and maintain effective working relationships and networks, with particular regard to communication and representation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers have a key role in contributing to efficient and effective work teams within the context of the organisation. They play a prominent part in motivating, mentoring, coaching and developing team cohesion through providing leadership for the team and forming the bridge between the management of the organisation and the team members. At this level, work will normally be carried out within known routines, methods and procedures which require the exercise of some discretion and judgement. This unit is related to BSBWOR401A Establish effective workplace relationships.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Seek, receive and communicate information and ideas	1.1. Collect ***information*** associated with the achievement of work responsibilities from appropriate ***sources*** 1.2. Communicate ideas and information to ***diverse audiences*** in an appropriate and sensitive manner 1.3. Seek contributions from internal and external sources to develop and refine new ideas and approaches in accordance with organisational processes 1.4. Facilitate ***consultation processes*** to allow employees to contribute to issues related to their work, and promptly communicate outcomes of consultation to the work team 1.5. Promptly deal with and resolve issues raised, or refer them to ***relevant personnel***
2. Encourage trust and	2.1. Treat people with integrity, respect and empathy

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ELEMENT	PERFORMANCE CRITERIA
confidence	2.2. Encourage effective relationships within the framework of ***the organisation's social***, ***ethical and business standards*** 2.3. Gain and maintain the trust and confidence of ***colleagues***, ***customers and suppliers*** through competent performance 2.4. Adjust interpersonal styles and methods in relation the to organisation's social and cultural environment
3. Identify and use networks and relationships	3.1. Identify and utilise ***workplace networks*** to help build relationships 3.2. Identify and describe the value and benefits of networks and other work relationships for the team and the organisation
4. Contribute to positive outcomes	4.1. Identify difficulties and take action to rectify the situation within own level of responsibility according to organisational and legal requirements 4.2. Support colleagues in resolving work difficulties 4.3. Regularly review ***workplace outcomes*** and implement improvements in consultation with relevant personnel 4.4. Identify and resolve ***poor work performance*** within own level of responsibility and according to organisational policies 4.5. Deal constructively with conflict, within the organisation's established processes

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
- coaching and mentoring skills to provide support to colleagues
- functional literacy skills to access and use workplace information
- relationship management and communication skills to:
  - interpret information from a variety of people
  - respond to unexpected demands from a range of people

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REQUIRED SKILLS AND KNOWLEDGE
• gain the trust and confidence of colleagues • deal with people openly and fairly • forge effective relationships with internal and/or external people.
Required knowledge

• principles and techniques associated with relationship management, including:
  • developing trust and confidence
  • behaving consistently in work relationships
  • identifying the cultural and social environment
  • identifying and assessing interpersonal styles
  • establishing networks
  • identifying and resolving problems
  • handling conflict
  • managing poor work performance
  • monitoring and improving work relationships
  • using anti-discrimination/bias strategies and making contributions
• relevant legislation from all levels of government that may affect business operation, especially in regard to:
  • occupational health and safety and environmental issues
  • equal opportunity
  • industrial relations
  • anti-discrimination.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • using culturally appropriate communication techniques to share work-based information with teams and individuals in accordance with organisation policies • developing networks and building team relationships

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EVIDENCE GUIDE	
	• regularly reviewing workplace outcomes to identify and resolve issues and implement improvements within own level of responsibility and according to organisational policies.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • oral or written questioning to assess knowledge and understanding of principles of relationship management and organisation's social, ethical and business standards • presentation of examples of actions taken by the candidate to build networks and contribute to positive workplace relationships and outcomes.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other management or frontline managementunits.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Information may include:	• archived, filed and historical background data • electronic or manual transmission • individual and team performance data • marketing and customer-related data

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RANGE STATEMENT	
	• organisation policies and procedures • planning and organisational documents including the outcomes of continuous improvement and quality assurance • written or verbal communications

Sources of information may be:	• external, such as:
	  • external customers
	  • web based resources
	  • reports
	• internal, such as:
	  • supervisors, managers and peers
	  • organisation policies and procedures
	  • workplace documents

Diverse audiences may include:	• persons with specific social, cultural and other needs that require a range of strategies and approaches including adjusting communication
Consultation processes may include:	• feedback to the work team and relevant personnel in relation to outcomes of the consultation process • opportunity for employees to contribute ideas and information
Relevant personnel may include:	• OHS committees and OHS representatives • people with specialist responsibilities • supervisors, managers and other employees • union representatives/groups

The organisation's social, ***ethical and business standards*** may refer to:	• implied standards such as honesty and respect relative to the organisation culture and generally accepted within the wider community
	• rewards and recognition for high performing staff
	• standards expressed in legislation and regulations such as anti-discrimination legislation
	• written standards such as those expressed in:
	  • vision and mission statements
	  • policies
	  • code of workplace conduct/behaviour
	  • dress code
	  • statement of workplace values

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RANGE STATEMENT	
Colleagues, customers and suppliers may include:	• employees at the same level and more senior managers • internal and external contacts • people from a wide variety of social, cultural and ethnic backgrounds • team members
Workplace networks may be:	• formal or informal • individuals or groups • internal or external • structured or unstructured
Workplace outcomes may include:	• OHS processes and procedures • performance of the work team
Poor work performance may relate to:	• self or work team; or it may extend to the organisation as a whole

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Frontline Management

Co-requisite units

Co-requisite units		

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BSBFLM305C Support operational plan

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to provide support for operational practices and procedures within the organisation's productivity and profitability plans. This includes contributing to the operational plan, assisting in recruiting employees and acquiring resources, and monitoring and adjusting operational performance. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers are actively engaged in planning activities to achieve the measurable, stated objectives of the team and the organisation. This key role is carried out to provide safe, efficient and effective products and services to customer satisfaction within the organisation's productivity and profitability plans. At this level, work will normally be carried out within known routines, methods and procedures, and may also involve a number of complex or non routine activities that require some discretion and judgement. This unit is related to BSBMGT402A Implement operational plan.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Contribute to implementation of operational plan	1.1. Collect and record details of ***resource requirements*** and report to ***relevant personnel*** 1.2. Ensure the ***operational plan*** contributes to the achievement of the organisation's performance and business plan 1.3. Identify ***key performance indicators*** to measure own and work team's performance 1.4. Undertake ***contingency planning*** as required 1.5. Support the development and presentation of proposals for resource requirements as required
2. Assist in recruiting employees and acquiring resources	2.1. Assist with employee recruitment and/or induction as required, within ***the organisation's policies***, ***practices and procedures*** 2.2. Acquire physical resources and services according

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ELEMENT	PERFORMANCE CRITERIA
	to the organisation's policies, practices and procedures and in consultation with relevant personnel
3. Support operations	3.1. Identify and utilise ***performance systems and processes*** to assess team progress in achieving plans and targets 3.2. Compare actual productivity and performance with identified short-term budgets, targets and performance results 3.3. Identify and report unsatisfactory performance to relevant personnel, to enable action to be taken to rectify the situation 3.4. Provide coaching to support individuals and teams to use resources effectively, economically and safely 3.5. Support ***consultation processes*** for the development and/or variation of the operational plan as required 3.6. Present recommendations for variation to operational plans to relevant personnel 3.7. Follow performance ***systems***, ***procedures and recording processes*** in accordance with organisation requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
- coaching and mentoring skills to provide support to colleagues
- functional literacy skills to access and use workplace information
- skills to:
  - maintain a safe workplace and environment
  - access and use feedback to improve operational performance
  - prepare recommendations to improve operations
  - access and use established systems and processes.

Required knowledge

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REQUIRED SKILLS AND KNOWLEDGE

• principles and techniques of:
  • short-term operational scheduling
  • physical resources and services acquisition procedures and/or systems
  • budget and performance figures interpretation
  • performance monitoring within defined job role
  • performance reporting
  • problem identification and resolution
  • alternative approaches to improving resource usage and eliminating resource inefficiencies and waste within defined job role
• relevant legislation from all levels of government that may affect business operations, especially in regard to occupational health and safety and environmental issues, equal opportunity, industrial relations and anti-discrimination
• support for individuals and teams who have difficulty in performing to the required standard.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • sharing information with members of the work team about implementing and monitoring the operational plan • assisting in planning resource acquisition and usage including human resources, risk management and contingency planning • monitoring, analysing and reporting individual and team performance against identified targets.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess

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EVIDENCE GUIDE	

	practical skills and knowledge. The following examples are appropriate for this unit:
	• direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
	• records produced while working with the operational plan, such as:
	  • suggestions for variations to the operational plan
	  • rosters and staff allocation
	  • short-term resource acquisition planning, contingency planning and/or risk management plans
	  • induction programs conducted
	  • suggestions and input into management decisions related to the operational plan
	  • records of actions taken to address day-to-day resource shortfalls.

Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBFLM303C Contribute to effective workplace relationships • BSBFLM306C Provide workplace information and resourcing plans • BSBFLM312C Contribute to team effectiveness • BSBCMN311B Maintain workplace safety.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Resource requirements may include:	• purchasing or ordering of goods • stock requirements and requisitions

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RANGE STATEMENT	
	• supply of resources.
Relevant personnel may include:	• colleagues, supervisors and managers • OHS committees and other people with specialist responsibilities • specialist resource managers • unions/employee groups • other employees.
Operational plan may include:	• organisational plans • tactical plans developed by the department or section to detail product and service performance.
Key performance indicators may refer to:	• measures for monitoring or evaluating the efficiency or effectiveness of a system, and which may be used to demonstrate accountability and identify areas for improvements.
Contingency planning may refer to:	• contracting or outsourcing human resource and other functions or tasks • diversification of outcomes • finding cheaper or lower quality raw materials and consumables • increasing sales or production • recycling and re-use • rental, hire purchase or alternative means of procurement of required materials, equipment and stock • restructuring of organisation to reduce labour costs • risk identification, assessment and management processes • seeking further funding • strategies for reducing costs, wastage, stock or consumables • succession planning.
The organisation's policies practices and procedures may include:	• organisational guidelines which govern and prescribe operational functions, such as the acquisition and management of human and physical resources • organisational culture • Standard Operating Procedures • undocumented practices in line with organisational operations.

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RANGE STATEMENT	

Performance systems and processes may be:	• formal or informal processes within the organisation, such as:
	  • Key Performance Indicators (KPIs)
	  • specified work outcomes
	  • individual and team work plans
	  • feedback arrangements
	• informal systems used in the place of existing organisation-wide systems.

Consultation processes may refer to:	• mechanisms used to provide feedback to the work team in relation to outcomes of consultation • meetings, interviews, brainstorming sessions, email/intranet communications, newsletters or other processes and devices which ensure that all employees have the opportunity to contribute to team and individual operational plans.
Performance systems, procedures and recording processes may include:	• databases and other recording mechanisms • individual and team performance plans • organisational policies and procedures relative to performance.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Frontline Management

Co-requisite units

Co-requisite units	

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Co-requisite units		

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BSBFLM306C Provide workplace information and resourcing plans

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to support the information management system. It involves the identification, acquisition, initial analysis and use of appropriate workplace information. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers, in supporting the processes of identifying, acquiring, analysing and using appropriate information, play a significant part in the organisation's effectiveness. At this level, work will normally be carried out within known routines, methods and procedures, and may also involve a number of complex or non routine activities that require some discretion and judgement. This unit is related to BSBINM401A Implement workplace information system.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Locate relevant information	1.1. Identify and locate ***information*** required by teams 1.2. Acquire and review information according to organisational procedures 1.3. Apply ***plans and procedures*** to obtain information which is not immediately available/accessible
2. Collect and report information	2.1. Collect information relevant to the needs of teams in an adequate and timely manner 2.2. Ensure information acquired is in a format suitable for analysis, interpretation and dissemination 2.3. Use information to identify and report relevant trends and developments to ***relevant personnel***, within the limits of own role
3. Use information	3.1. Effectively use ***management information systems*** to

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ELEMENT	PERFORMANCE CRITERIA
systems	store and retrieve data 3.2. Use available ***technology*** to manage information effectively 3.3. Report recommendations for improving information system to ***designated persons and/or groups***
4. Support the preparation of business plan and/or budgets	4.1. Effectively utilise the contribution of the work team when preparing ***business plans and/or budgets*** to gain support for the outcomes 4.2. Present and record information to support the preparation of business plans and/or budgets in accordance with the organisation's guidelines and requirements 4.3. Follow ***contingency plans*** in the event that alternative action is required
5. Support the preparation of resource proposals	5.1. Consult with ***colleagues*** to collect ***resource planning data*** as required 5.2. Report estimated resource needs and usage according to organisational requirements as necessary 5.3. Facilitate ***resourcing*** within limits of own role

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities • coaching and mentoring skills to provide support to colleagues • communication and research skills covering information collection, analysis and reporting • functional literacy skills to access and use workplace information • information preparation skills • skills to improve information usage in decision making • technical skills to extract and input information
Required knowledge
• a general understanding of:

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REQUIRED SKILLS AND KNOWLEDGE
• workplace information systems • operational plans and budgets • resource proposals • basic financial concepts relating operational plans and budgets • methods to gain efficiencies in operational resource management • relevant legislation from all levels of government which may affect business operations, especially in regard to occupational health and safety and environmental issues, equal opportunity, industrial relations and anti-discrimination

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • using management information system to collect, store and retrieve data supporting the preparation of business plans and/or budgets • involving the work team in planning and budget preparation • estimating resource needs and usage according to organisational requirements and allocating or acquiring resources within limits of own role.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • records produced from working in a team, such as:

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EVIDENCE GUIDE	
	• reports • minutes or records of meetings • work journals or diaries • learning and development plans developed with team members • records of actions taken to address issues raised by team members.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBCUS301A Deliver and monitor a service to customers • BSBFLM305C Support operational plan • BSBFLM312C Contribute to team effectiveness • BSBCMN311B Maintain workplace safety.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Information may include:	• archived, filed and historical background data • continuous improvement and quality assurance data • data available internally or externally • data shared and retrieved in various forms such as in writing or verbally, electronically or manually • financial and contractual data • marketing and customer-related data • organisational performance data • planning and organisational documents • policies and procedures.
Plans and procedures may	• action plans, project plans or more formal

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RANGE STATEMENT	
include:	planning tools in line with organisational procedures and levels of own responsibility • informal documents outlining a series of planned actions or steps • organisational procedures such as Standard Operating Procedures, record keeping procedures • organisational processes and procedures used to obtain information, with consideration given to meeting legislative requirements, such as privacy, anti-discrimination.
Relevant personnel may include:	• colleagues and specialist resource managers • OHS committees and OHS representatives • supervisors, managers and other staff/employees • other people with specialist responsibilities.
Management information systems may be:	• the entire infrastructure of an organisation, including personnel, and the components for the collection, processing, storage, transmission, display, dissemination, and disposition of information.
Technology may include:	• computerised systems and software such as databases, project management and word-processing • telecommunications devices • other technology available in the workplace and used to carry out work roles and responsibilities.
Designated persons or groups may include:	• groups designated in workplace policies and procedures • the frontline manager's supervisors or others with management roles and responsibilities concerning information systems • other stakeholders accessing the information system such as customers and service providers • other work groups or teams whose work will be affected by the system.
Business plans and/or budgets may refer to:	• cash flow projections • long or short term budgets/plans relative to own responsibilities • operational plans

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RANGE STATEMENT	
	• spreadsheet-based financial projections • targets or Key Performance Indicators (KPIs) for production, productivity, wastage, sales, income and expenditure.
Contingency plans will usually be developed by others and may include:	• contracting out or outsourcing human resource and other functions or tasks • diversification of outcomes • finding cheaper or lower quality raw materials and consumables • increasing sales or production • recycling and re-use • rental, hire purchase or alternative means of procurement of required materials, equipment and stock • restructuring of organisation to reduce labour costs • risk identification, assessment and management processes • seeking further funding • strategies for reducing costs, wastage, stock or consumables.
Colleagues may include:	• employees at the same level or more senior managers • OHS representatives • people from a wide variety of social, cultural and ethnic backgrounds and physical and mental abilities • team members.
Resource planning data may relate to:	• buildings/facilities • equipment/technology • finance • information • people • power/energy • targets or Key Performance Indicators (KPIs) for production, productivity, wastage, sales, income and expenditure • time.
Resourcing may include:	• purchasing or ordering of goods • stock requirements/requisitions • supply of resources.

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Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Frontline Management

Co-requisite units

Co-requisite units		

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BSBFLM309C Support continuous improvement systems and processes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit specifies the outcomes required to support the organisation's continuous improvement systems and processes. Particular emphasis is on actively encouraging the team to participate in the process, on monitoring and reporting on specified outcomes and on supporting opportunities for further improvements. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit replaces BSBFLM309A Support continuous improvement systems and processes. Frontline managers have an active role in supporting continuous improvement processes in achieving the organisation's objectives. Their position, closely associated with the creation and delivery of products and services, means that they have an important responsibility in influencing the ongoing development of the organisation. At this level, work will normally be carried out within known routines, methods and procedures, and may also involve a number of complex or non-routine activities that require some discretion and judgement. Consider co-assessment with BSBFLM305C Support operational plan, BSBFLM312C Contribute to team effectiveness, BSBCUS301A Deliver and monitor a service to customers, BSBCMN311B Maintain workplace safety, and BSBFLM311C Support a workplace learning

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	environment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Contribute to continuous improvement systems and processes	1.1. Actively encourage and support team members to participate are in decision making processes and to assume responsibility and exercise initiative 1.2. ***Communicate*** the organisation's ***continuous improvement processes*** to individuals and teams

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ELEMENT	PERFORMANCE CRITERIA
	1.3. Effectively utilise ***mentoring and coaching*** to ensure that individuals/teams are able to support the organisation's continuous improvement processes
2. Monitor and report on specified outcomes	2.1. Utilise the organisation's ***systems*** and ***technology*** to monitor team progress and to identify ways in which planning and operations could be improved 2.2. Apply continuous improvement techniques and processes to improve ***customer service***
3. Support opportunities for further improvement	3.1. Communicate ***agreed recommendations*** for improvements in achieving the business plan to team members 3.2. Document and use work performance to identify opportunities for further improvement 3.3. Maintain records, reports and recommendations for improvement within the organisation's systems and processes

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
- functional literacy skills to access and use workplace information
- research, analysis, interpretation and reporting skills
- monitoring and evaluation skills
- communication skills to:
  - gain the commitment of individuals and teams to continuous improvement
  - deal with people openly and fairly
  - use consultation skills effectively
- skills to consolidate opportunities for improvement
- coaching and mentoring skills to provide support to colleagues

Required knowledge

- legislation from all levels of government that affects business operation, especially in regard to occupational health and safety and environmental issues, equal

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REQUIRED SKILLS AND KNOWLEDGE

opportunity, industrial relations and anti-discrimination
• principles and techniques of:
  • continuous improvement systems and processes
  • benchmarking
  • best practice
• benefits of continuous improvement
• quality approaches which the organisation may implement
• methods that can be used in continuous improvement
• barriers to continuous improvement
• recording, reporting and recommendation processes to facilitate continuous improvement applied within the organisation

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • examples of actions taken by the candidate to support continuous improvement including: • use of work performance to identify improvement • adjusted plans to reflect changes • effective communication to all stakeholders • use of technology to monitor operational progress • application of suitable recordkeeping processes.
Context of and specific resources for assessment	Assessment must ensure: • access by the learner and trainer to appropriate documentation and resources normally used in the workplace • that this unit is assessed in the workplace or in a closely simulated work environment.
Method of assessment	A range of assessment methods should be used to assess skills and knowledge. The following examples are appropriate for this unit:

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	• Direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
	• Review of records supporting the organisation's continuous improvement systems and processes, such as:
	  • contributions to organisational policies and procedures
	  • contributions to procedures and policies for dealing with continuous improvement processes, and related codes of conduct
	  • actions taken to address information collection, retrieval and use in the workplace
	  • actions taken to address issues and problems within work team
	  • actions taken to address methods of reporting information
	  • learning and development plans for team members
	  • materials developed for coaching, mentoring and training
	  • induction programs developed and/or delivered
	  • actions taken to address internal and external information management issues
	  • reviews of people management
	  • advice and input into management decisions related to continuous improvement
	  • records of people management lessons learned.

Guidance information for assessment	This unit should be assessed with other frontline management units taken as part of this qualification, as applicable to the candidate's leadership role in a work team, and as part of a holistic assessment activity.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating

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RANGE STATEMENT	
conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Legislation, codes and national standards relevant to the workplace may include:	• award and enterprise agreements and relevant industrial instruments • relevant legislation from all levels of government that affects business operation, especially in regard to occupational health and safety (OHS) and environmental issues, equal opportunity, industrial relations and anti-discrimination • relevant industry codes of practice.
OHS considerations may include:	• provision of information about OHS legislative requirements and guidelines, and the organisation's OHS policies, procedures and programs • participation in the regular update of OHS systems and procedures • implementation of the continuous improvement processes of the OHS management system • changes to work practices, procedures and the working environment which impact on OHS • organisation's responsibilities to customers and suppliers.
Methods used to ***communicate*** with individuals and team may include:	• verbal, written or electronic communications • on-the-job mentoring and coaching.
Continuous improvement processes may include:	• policies and procedures which allow an organisation to systematically review and improve the quality of its products, services and procedures • cyclical audits and reviews of workplace, team and individual performance • seeking and considering feedback from a range of stakeholders • modifications and improvements to systems, processes, services and products • evaluations and monitoring of effectiveness.
Mentoring and coaching may refer to:	• teaching another member of the team, usually focusing on a specific work task or skill • providing feedback, support and

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RANGE STATEMENT	
	encouragement on a range of matters • providing assistance with problem solving.
Systems may include:	• organisation policies and procedures • web based communication devices • attendance at forums, meetings • newsletters and reports.
Technology may include:	• computerised systems and software such as databases, project management and word-processing • telecommunications devices • any other technology used to carry out work roles and responsibilities.
Customer service may be:	• internal or external, to existing or new clients • identifying needs and priorities in delivering a service to customers • understanding of different levels of customer satisfaction.
Agreed recommendations may be:	• identified improvements arising from the continuous improvement process • determined in accordance with organisational policies and procedures

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and leadership - Frontline Management

Co-requisite units

Co-requisite units	

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Co-requisite units		

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BSBFLM311C Support a workplace learning environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to effectively encourage and support a learning environment. Particular emphasis is on participation in processes to facilitate and promote learning and to monitor and improve learning performance. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers have a prominent role in encouraging and supporting the development of a learning environment in which work and learning come together. At this level, work will normally be carried out within known routines, methods and procedures, and may also involve a number of complex or non-routine activities that require some discretion and judgement. This unit is related to BSBLED401A Develop teams and individuals.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Encourage a learning environment	1.1. Encourage and support workplace ***learning opportunities*** 1.2. Implement ***learning plans*** as an integral part of individual and team performance plans 1.3. Implement learning plans to reflect ***diversity of needs*** and learning opportunities 1.4. Encourage individual and team access to, and participation in, learning opportunities 1.5. Liaise effectively with ***training and development specialists*** to contribute to learning opportunities which enhance individual, team and organisational performance
2. Encourage and promote learning of team and individuals	2.1. ***Promote a learning culture*** within the team and organisation 2.2. Support ***coaching and mentoring*** for the

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ELEMENT	PERFORMANCE CRITERIA
	development of workplace knowledge, skills and attitudes 2.3. Encourage team members to assess own competencies, and to identify own ***learning and development needs*** 2.4. Share the benefits of learning with others in the team and organisation 2.5. Provide recognition and feedback for ***workplace achievement*** in a timely and appropriate manner
3. Identify opportunities for improvement	3.1. Monitor the performance of individuals and teams to determine the type and extent of required work-based support 3.2. Gather feedback from individuals and teams to identify opportunities for improving future learning arrangements 3.3. Negotiate adjustments with training and development specialists to improve the efficiency and effectiveness of learning 3.4. Record, document and report learning outcomes in accordance with the organisation's systems and procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- coaching and mentoring skills to support learning
- communication skills to:
  - gain the trust and confidence of colleagues
  - deal with people openly and fairly
  - use consultation skills effectively
- culturally appropriate communication skills to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
- functional literacy skills to access and use workplace information
- skills in facilitating learning, including:
  - identifying learning needs

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REQUIRED SKILLS AND KNOWLEDGE
• developing learning plans • selecting and using work activities to create learning opportunities • establishing a workplace conducive to learning • negotiating learning arrangements with training and development specialists • encouraging colleagues to share their knowledge and skills • evaluating the effectiveness of learning
Required knowledge

• principles and techniques of:
  • adult learning
  • a learning environment and learning culture
  • work based learning
  • structuring learning
  • coaching and mentoring
• relevant legislation from all levels of government that may affect business operation, especially in regard to:
  • occupational health and safety
  • environmental issues
  • equal opportunity and anti-discrimination
  • industrial relations

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • liaising with stakeholders, especially members of the work team, to develop, promote and maintain a workplace learning environment • developing learning plans and arranging learning opportunities in line with identified needs • compiling and interpreting data about learning arrangements and outcomes in accordance with

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EVIDENCE GUIDE	
	organisational requirements.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • oral or written questioning to assess knowledge and understanding of workplace learning principles and organisational procedures and policies for applying learning systems • presentation of examples of actions taken by the candidate to support a workplace learning environment • review of materials developed for coaching, mentoring and training.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBCUS301A Deliver and monitor a service to customers • BSBFLM305C Support operational plan • BSBFLM312C Contribute to team effectiveness • BSBCMN311B Maintain workplace safety • BSBWOR301A Organise personal work priorities and development.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and

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RANGE STATEMENT	
regional contexts) may also be included.	

Learning opportunities may include:	• action learning
	• coaching
	• exchange/rotation
	• induction
	• mentoring
	• shadowing
	• short courses
	• structured learning activities conducted outside and within the workplace such as:
	  • accredited training through an independent organisation such as a State OHS authority
	  • training through an RTO leading to a nationally recognised Australian Qualifications Framework (AQF) qualification or Statement of Attainment, for example through a traineeship or Australian Apprenticeship
	• workplace learning activities, that may also contribute to a recognised credential, such as:
	  • workshops.

Learning plans may include:	• codes of conduct • key performance indicators (KPI) • negotiated agreement with individual • OHS requirements • performance standards • team competencies • team roles and responsibilities • work outputs and process.
Diversity of needs may include:	• different learning needs that relate to social, cultural and other types of workplace diversity, such as the need for varied communication styles and approaches.
Training and development specialists may be:	• internal or external.
Promoting a learning culture may include:	• encouraging learning and sharing of skills and knowledge across the work team and the wider organisation in order to develop competencies of team members and the team • informally supporting and recognising

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RANGE STATEMENT	
	learning achievements and sharing success stories • promoting participation and learning opportunities • using formal processes to reward training participation in line with organisational processes • utilising workplace activities as opportunities for learning.
Coaching and mentoring may refer to:	• providing assistance with problem solving • providing feedback, support and encouragement on a range of matters • teaching another member of the team, usually focusing on a specific work task or skill.
Learning and development needs may include:	• developmental learning, for example the learning required to progress through an organisation and take on new tasks and roles • gaps between the competencies held by the employee and the skills and knowledge required to effectively undertake workplace tasks.
Workplace achievement may refer to:	• achievements of set goals and performance outcomes by the work team and/or individuals.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Frontline Management

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Co-requisite units

Co-requisite units		

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BSBFLM312C Contribute to team effectiveness

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This specifies the outcomes required to by frontline managers to contribute to the effectiveness of the work team. It involves planning with the team to meet expected outcomes, developing team cohesion, participating in and facilitating the work team, and communicating with the management of the organisation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers have a key role in developing efficient and effective work teams within the context of the organisation. They play a prominent part in motivating, mentoring, coaching and developing team cohesion by providing leadership for the team and forming the bridge between the management of the organisation and the team members. At this level, work will normally be carried out within known routines, methods and procedures, and may also involve a number of complex or non routine activities that require some discretion and judgement.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Contribute to team outcomes	1.1. Consult team members to identify ***team purpose***, ***roles***, ***responsibilities***, ***goals***, ***plans and objectives*** 1.2. Support team members to meet expected outcomes
2. Support team cohesion	2.1. Encourage team members to participate in the planning, decision making and operational aspects of the work team to their level of responsibility 2.2. Encourage team members to take responsibility for their own work and to assist each other in undertaking required roles and responsibilities 2.3. Provide ***feedback*** to team members to encourage, value and reward team members' efforts and contributions 2.4. Identify and address issues, concerns and problems identified by team members to ***relevant persons*** as

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ELEMENT	PERFORMANCE CRITERIA
	required
3. Participate in work team	3.1. Actively encourage and support team members to participate in team activities and communication processes and to take ***responsibility for their actions***
	3.2. Support the team to identify and resolve problems which impede its performance
	3.3. Utilise own contribution to work team to serve as a role model for others and enhance the organisation's image within the work team, the organisation and with clients/customers
4. Communicate with management	4.1. Maintain open ***communication*** with ***line manager*/*management*** at all times
	4.2. Communicate information from line manager/management to the team
	4.3. Communicate ***unresolved issues*** to line manager/management and follow-up to ensure action is taken in response to these matters

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills

- ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities
- communication skills, including listening
- basic training skills, including mentoring and coaching
- planning and organising skills
- problem solving skills
- attributes:
  - empathic
  - communicative
  - self aware
  - supportive
  - trusting

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REQUIRED SKILLS AND KNOWLEDGE
• open • flexible • accommodating • initiating • loyal • fair • adaptable
Required knowledge

Required knowledge
• relevant legislation from all levels of government that affects business operation, especially in regard to occupational health and safety and environmental issues, equal opportunity, industrial relations and anti-discrimination
• organisational policies and procedures
• organisational goals, objectives and plans at both tactical and strategic levels
• organisational structure including organisational chart
• learning and development options available within and through organisation
• a general understanding of the principles and techniques of:
  • group dynamics and processes
  • motivation
  • planning
  • negotiation
• individual behaviour and difference

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • demonstrate leadership in contributing to team plans • lead and facilitate teamwork • actively communicate with management • manage communication within the team

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EVIDENCE GUIDE	
	• induct new team members • implement performance management system • handle problems
Context of and specific resources for assessment	Assessment must ensure: • that this unit can be assessed in the workplace or in a closely simulated work environment • access by the learner and trainer to appropriate documentation and resources normally used in the workplace • where assessment is part of a learning experience, evidence will need to be collected over a period of time, involving both formative and summative assessment • that examples of actions taken by candidate to contribute to team effectiveness are provided

Method of assessment	A range of assessment methods should be used to assess skills and knowledge. The following examples are appropriate for this unit:
	• Direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate
	• Records produced from working in a team, such as:
	  • reports
	  • minutes or records of meetings
	  • work journals or diaries
	  • learning and development plans developed with team members
	  • records of actions taken to address issues raised by team members

Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating

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RANGE STATEMENT	
conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Legislation, codes and national standards relevant to the workplace may include:	• award and enterprise agreements and relevant industrial instruments • relevant legislation from all levels of government that affects business operation, especially in regard to occupational health and safety (OHS) and environmental issues, equal opportunity, industrial relations and anti-discrimination • relevant industry codes of practice
OHS considerations may include:	• provision of information about OHS legislative requirements, guidelines and the organisation's OHS policies, procedures and programs • training of all employees in health and safety procedures • participation in the regular update of OHS systems and procedures • changes to work practices, procedures and the working environment which impact on OHS
Team purpose, ***roles***, ***responsibilities***, ***goals***, ***plans and objectives*** may include:	• goals for individuals and the work team • expected outcomes and outputs • individual and team performance plans and Key Performance Indicators (KPIs) • action plans, business plans and operational plans linked to strategic plans • OHS responsibilities
Feedback may refer to:	• communication of ideas and thoughts which focus on specific tasks, outcomes, decisions, issues or behaviours • formal/informal gatherings between team members where there is discussion on work-related matters
Relevant persons may include:	• frontline manager's direct superior or other management representatives • colleagues • designated personnel e.g. safety officer
Responsibility for their actions	• individuals and teams • individual and joint actions

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RANGE STATEMENT	
may involve:	
Communication may include:	• verbal, written or electronic communication • face-to-face • formal/informal interaction
Line manager*/*management may refer to:	• frontline manager's direct superior or other management representatives
Unresolved issues may include:	• issues, concerns and tensions • problems related to work roles and responsibilities • grievances and complaints • any matters affecting workplace relationships and team cohesion

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Frontline Management services

Co-requisite units

Co-requisite units		

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BSBINM401A IMPLEMENT WORKPLACE INFORMATION SYSTEM

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to implement the workplace information system. It involves the identification, acquisition, initial analysis and use of appropriate information, which plays a significant part in the organisation's effectiveness. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers play a significant role in contributing to the organisation's effectiveness in identifying, acquiring, analysing and using appropriate information. At this level, work will normally be carried out within routine and non routine methods and procedures, which require planning and evaluation, leadership and guidance of others, and some discretion and judgement.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Identify and source information needs	1.1. Determine and locate ***information*** required by teams 1.2. Acquire and review information held by the organisation to determine suitability, accessibility, currency and reliability according to ***organisational policies***
2. Collect, analyse and report information	2.1. Collect information, which is adequate and relevant to the needs of teams, in a timely manner 2.2. Ensure information is in a format suitable for analysis, interpretation and dissemination 2.3. Analyse information to identify and report relevant trends and developments in terms of the needs for which it was acquired
3. Implement information systems	3.1. Implement management information systems effectively to store, retrieve and regularly review data for decision making purposes 3.2. Use ***technology*** available in the work area to manage information effectively

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ELEMENT	PERFORMANCE CRITERIA
	3.3. Submit recommendations for improving the information system to ***designated persons and/or groups***
4. Prepare for information system changes	4.1. Collect information about information system future needs in consultation with ***colleagues***, including those who have a specialist role in resource management 4.2. Ensure estimates of information system future needs reflect the organisation's ***business plans***, and customer and supplier requirements 4.3. Support proposals to secure resources by clearly presenting submissions that describe realistic options, benefits, costs and outcomes 4.4. Prepare team members to work with new technology and information system changes

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- literacy skills to work with information, and to research and present information in ways that are appropriate to the work team
- technology skills to work with a range of information systems.

Required knowledge

- information management systems and technology that would be associated with the workplace such as:
  - budgets and financial management systems
  - customer information software or records
  - databases
  - personal digital assistant (PDA)
  - product and service information
  - project management software
  - record management systems
  - spreadsheets.

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Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • analysis of the information that is required for the effective functioning of the team's work together • knowledge of the range of information systems that are, or should be, available in the workplace • ability to recognise what information system changes and improvements will be required in the future.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • demonstration of techniques in working with information management systems • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • oral or written questioning to assess knowledge of relevant technology • review of documentation analysing information trends and developments • written reports on future information system needs • review of preparation undertaken for team members to work with new technology and information system changes.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Certificate IV in Frontline Management.

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Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Information may include:	• archived, filed and historical background data • continuous improvement and quality assurance data • data available internally or externally • data shared and retrieved in various forms such as in writing or verbally, electronically or manually • financial and contractual data • marketing and customer-related data • organisational performance data • planning and organisational documents • policies and procedures
Organisational policies may include:	• guidelines for decision making throughout the organisation that link the formulation of strategy with its implementation • sets of accepted actions approved by the organisation • Standard Operating Procedures
Technology may include:	• computerised systems and software such as databases, project management and word processing • telecommunications devices • any other technology used to carry out work roles and responsibilities
Designated persons and/or groups may include:	• groups designated in workplace policies and procedures • managers or supervisors with management roles and responsibilities concerning information systems • other stakeholders accessing the information system such as customers and service providers • other work groups or teams whose work will be affected by the system

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RANGE STATEMENT	
Colleagues may include:	• employees at the same level or more senior managers • occupational health and safety committee members and other specialists • people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities • team members
Business plans may include:	• cash flow projections • long-term budgets/plans • operational plans • short-term budgets/plans • spreadsheet-based financial projections • targets or key performance indicators for production, productivity, wastage, sales, income and expenditure

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBINM501A Manage an information or knowledge management system

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to organise learning to use an information or knowledge management system and to manage the use of the system. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to managers who have responsibility for seeing that key information and corporate knowledge are retained, accessible to others and improve business outcomes. The unit does not address the requirement to select the technical system (software or hardware), which is seen as the role of an information technology specialist, although in some smaller organisations this may be a part of the manager's role.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Organise learning to use information or knowledge management system	1.1. Identify learning needs of ***relevant personnel*** and ***stakeholders*** for input into, and use of, ***an information or knowledge management system*** 1.2. Identify and secure human, financial and physical resources required for ***learning activities*** to use an information or knowledge management system 1.3. Organise and facilitate learning activities 1.4. Promote and support use of the system throughout the organisation 1.5. Monitor and document effectiveness of learning activities
2. Manage use of information or knowledge management system	2.1. Ensure implementation of ***policies and procedures for the information or knowledge management system*** are monitored for compliance, effectiveness and efficiency 2.2. Address implementation issues and problems as they arise

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ELEMENT	PERFORMANCE CRITERIA
	2.3. Monitor integration and alignment with data and information systems 2.4. Collect information on achievement of ***performance measures*** 2.5. Manage contingencies such as system failure or technical difficulties by accessing technical specialist help as required
3. Review use of information or knowledge management system	3.1. Analyse effectiveness of system and report on strengths and limitations of the system 3.2. Review business and operational plan and determine how effectively the system is contributing to intended outcomes 3.3. Make recommendations for improvement to system, policy or work practices

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analytical and problem-solving skills to ensure the system is working in accordance with organisational expectations and to deal with contingencies
- technology skills to work with and manage the use of the information or knowledge management system.

Required knowledge

- legislation, codes of practice and national standards, for example:
  - privacy and confidentiality legislation
  - freedom of information legislation
  - AS 5037:2005 Knowledge management - A guide
- organisational policies and procedures, for example:
  - records management
  - information management
  - customer service
  - commercial confidentiality
- organisational operations, and existing data and information systems.

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Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • analysis of the strengths and weaknesses of information or knowledge management system/s and evaluation of suitability for a particular work or organisational context • knowledge of relevant legislation, codes of practice and national standards.
Context of and specific resources for assessment	Assessment must ensure: • access to system • access to system user feedback.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment of written reports reviewing and evaluating information or knowledge management systems • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of presentations • oral or written questioning to assess knowledge of relevant organisational policies and procedures • review of identified learning needs personnel and stakeholders regarding the information or knowledge management system • evaluation of monitoring and documentation about the effectiveness of learning activities • analysis documentation reporting on the strengths and limitations of the system • review of recommendations made for improvements to the system, policy or work practices.
Guidance information for	Holistic assessment with other units relevant to the

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EVIDENCE GUIDE	
assessment	industry sector, workplace and job role is recommended, for example: • other units from the Diploma of Management.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Relevant personnel include:	• managers, leaders, supervisors and coordinators • owners • staff, team members and colleagues
Stakeholders include:	• clients and customers • employee representatives • funding bodies • industry, professional and trade associations • regulatory bodies and authorities • sponsors • tenderers, suppliers and contractors
Information or knowledge management is defined as:	• equipment, strategies, methods, activities and techniques used formally and informally by individuals and the organisation to identify, collect, organise, store, retrieve, analyse, share and draw on information and knowledge valuable to the work of the organisation
An information or knowledge management system:	• comprises policies, protocols, procedures and practices to manage information or knowledge within the organisation and among relevant stakeholders
Learning activities include:	• coaching and mentoring programs • help desks • information sessions, briefings, workshops and training programs • paper-based or electronic (including intranet)

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RANGE STATEMENT	
	learning opportunities • use of expert workers such as coaches and mentors to help other personnel use the system
Policies and procedures for the information or knowledge management system cover:	• complying with legislative requirements (such as privacy, confidentiality and defamation requirements) and other policies and procedures • content guidelines • ensuring accuracy and relevance of knowledge input into the system • mechanisms, formats and styles of input to system, including appropriate alternative formats for people with a disability • permissions for input • removing out-of-date, inaccurate and content that is no longer relevant • selecting, maintaining and disposing of knowledge in the system • sharing knowledge in the system
Performance measures include:	• key performance indicators • other systems and measures to enable assessment of how, when, where and why outcomes are being achieved • performance objectives • performance standards (including codes of conduct) • qualitative or quantitative mechanisms to measure individual performance

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

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Co-requisite units

Co-requisite units		

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BSBINM601A Manage knowledge and information

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to develop and maintain information processing systems to support decision making, and to optimise the use of knowledge and learning throughout the organisation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to people working in management roles who have responsibility for ensuring that critical knowledge and information are readily available to review the organisation's performance and to ensure its effective functioning. Knowledge and information can include business performance data, customer feedback, statistical data and financial data.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Obtain information relevant to business issues	1.1. Review staff and customer feedback and business performance data 1.2. Identify, define and analyse business problems and issues 1.3. Identify information required to reach a decision on problems/issues 1.4. Source and gather reliable information 1.5. Test information for reliability and validity, and reject where contradictory or ambiguous 1.6. Utilise formal and informal networks to access corporate knowledge/memory not held in formal systems and review appropriately
2. Analyse information and knowledge	2.1. Ensure objectives for analyses are clear, relevant and consistent with the decisions required 2.2. Identify patterns and emerging trends correctly and interpret as to cause and effect 2.3. Utilise ***statistical analyses*** and interpretation where appropriate 2.4. Undertake ***sensitivity analysis*** on any proposed options 2.5. Ensure documentation reflects a logical approach to the evaluation of the evidence and conclusions drawn

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ELEMENT	PERFORMANCE CRITERIA
	2.6. Adjust ***management information systems*/*decision support systems*** to meet information processing objectives
3. Take decisions on business issues identified	3.1. Ensure sufficient valid and reliable information/evidence is available to support a decision 3.2. Utilise ***risk management*** plans to determine acceptable courses of action 3.3. Utilise appropriate ***quantitative methods*** to assist decision making 3.4. Consult specialists and other ***relevant groups and individuals*** 3.5. Ensure decisions taken are within the delegation/accountability of the group/individual responsible 3.6. Make decisions in accordance with organisational guidelines and procedures 3.7. Ensure decisions taken are consistent with organisational objectives, values and standards 3.8. Ensure decisions are taken in a timely manner
4. Disseminate information to the organisation	4.1. Ensure advice/information needs are documented and are specific to location, format and time line requirements 4.2. Document information and update databases regularly 4.3. Design and test systems to meet information requirements of decision makers 4.4. Ensure information is up-to-date, accurate, relevant and sufficient for the recipient 4.5. Develop ***communication plans*** and disseminate information 4.6. Adhere to confidentiality/privacy policies in the transmission/release of information/advice 4.7. Review and update communication plans regularly 4.8. Utilise ***technology*** which provides optimum efficiency and quality 4.9. Maintain ***corporate knowledge*** and ensure security

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE This section describes the skills and knowledge required for this unit.
Required skills
• analytical skills to identify improvement opportunities in relation to the services/products delivered internally or concepts/ideas in area of expertise • communication and consultation skills to ensure all relevant groups and individuals are advised of what is occurring and are provided with an opportunity for input • quantitative and qualitative research skills to locate and review relevant data and information • technology skills to consider various software and hardware options for storing and accessing data and information.
Required knowledge
• new technologies and their suitability to knowledge and information management • risk management.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • documentation which tracks a particular problem/issue through information gathering and analysis, decision making and taking, and dissemination to relevant groups and individuals • development and utilisation of relevant information storage and retrieval systems, as well as accessing informal knowledge and information from informal networks within the organisation • knowledge of new technologies and their suitability to knowledge and information management.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources

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EVIDENCE GUIDE	
	normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment of written reports on knowledge management and information management • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • oral or written questioning to assess knowledge of information management systems • review of documentation identifying, defining and analysing business problems and issues • evaluation of communication plans • evaluation of the transmission/release of information/advice in terms of adhering to confidentiality/privacy policies.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Advanced Diploma of Management.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Statistical analyses may include:	• correlation calculations • long-term trend analyses • probability assessment • regulation analyses • short to medium-term trend analyses
Sensitivity analyses means:	• applying 'what if' scenarios to available

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RANGE STATEMENT	
	options
Management information systems means:	• formal systems for collecting, storing and synthesising information to be used in management decision making
Decision support systems are:	• management information systems which include some form of computer-based assistance to decision making (expert systems)
Risk management means:	• process of identification of potential negative events and the development of plans to mitigate or minimise the likelihood or consequences of the negative event if it occurs
Quantitative methods may include:	• dynamic programming • linear programming • queuing theory • simulation • transportation methodology
Relevant groups and individuals means:	• those personnel who have knowledge about the issue being dealt with and the expertise to assist the decision making process
Research may include:	• focus groups • group interviews • individual interviews • surveys
Communication plans means:	• structured program for the dissemination of information and the receipt of feedback information from individuals relevant to the process or activity
Technology may include:	• audio-visual media • internet • intranet • print media • radio • telephone • television
Corporate knowledge may include:	• copyright • intellectual property • technology

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Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBINN301A Promote innovation in a team environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to be an effective and pro active member of an innovative team. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies individuals who play a pro active role in demonstrating, encouraging or supporting innovation in a team environment. The individual may be a team participant or a team leader. The team may 'make itself' or be constructed by others. It may have core members and members who participate at certain times or for particular purposes. It may be permanent or temporary, or come together at different times to work on specific projects. The team could consist of a team of contractors/freelancers, permanent staff, clients and service providers, or any combination of these groups. It may operate within an organisation or across several organisations - or simply across a group of individuals. The key focus of the unit is on what makes for an innovative team, what keeps it working well, how the structure of work can make a difference and what skills and knowledge are needed to maximise opportunities for innovation. Where a greater focus on team leadership is required this unit should be combined with units such as BSBLED401A Develop teams and individuals.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Create opportunities to maximise innovation within the team	1.1. Evaluate and reflect on ***what the team needs and wants to achieve*** 1.2. Check out ***information about current or potential team members' work*** in the context of developing a more innovative team 1.3. Bring people into the team or make suggestions for team members based on what needs to be achieved and the potential for cross-fertilising ideas 1.4. Acknowledge, respect and discuss the ***different ways that different people may contribute*** to building or

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ELEMENT	PERFORMANCE CRITERIA
	enhancing the team
2. Organise and agree effective ways of working	2.1. Jointly establish ***ground rules*** for how the team will operate 2.2. Agree and communicate responsibilities in ways that encourage and reinforce ***team-based innovation*** 2.3. Agree and share tasks and activities to ensure the best use of skills and abilities within the team 2.4. Plan and schedule activities to allow time for thinking, challenging and collaboration 2.5. Establish personal reward and stimulation as an integral part of the team's way of working
3. Support and guide colleagues	3.1. Model ***behaviour that supports innovation*** 3.2. Seek ***external stimuli and ideas*** to feed into team activities 3.3. Pro-actively share information, knowledge and experiences with other team members 3.4. Challenge and test ideas within the team in a positive and collaborative way 3.5. Pro-actively discuss and explore ideas with other team members on an ongoing basis
4. Reflect on how the team is working	4.1. De-brief and reflect on activities and on opportunities for improvement and innovation 4.2. Gather and use feedback from within and outside the team to generate discussion and debate 4.3. Discuss the ***challenges of being innovative*** in a constructive and open way 4.4. Take ideas for improvement, build them into future activities and communicate key issues to relevant colleagues 4.5. Identify, promote and celebrate successes and examples of successful innovation

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills

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REQUIRED SKILLS AND KNOWLEDGE
• communication skills to work collaboratively as part of a team, to provide guidance and support to others, and to participate in open and constructive discussions • creative thinking skills to generate, explore, test and challenge ideas • learning skills to stretch boundaries of own knowledge and skills • literacy skills to analyse a wide range of information from varied sources • planning and organisational skills to participate in the effective allocation of work in a team context • problem-solving skills to work constructively to overcome issues and challenges of both a practical and conceptual nature and to make ideas become realities • self-management skills to take a pro-active team role and to reflect on own performance in modelling and encouraging behaviour that supports innovation.
Required knowledge
• barriers to innovation that can occur within a team and broader barriers that sometimes hinder innovation • broad concepts of innovation including what innovation is, different types of innovation and the benefits of innovation • characteristics of teams that are more likely to be innovative and characteristics of broader environments that support and encourage innovation • different roles that people may play within a team, how this impacts on the way a team works and what it might achieve • group dynamics in a team.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • active participation in a team where the team takes a pro-active and considered approach to innovation and innovative practice • collaborative and open communication within the team • knowledge and understanding of the internal and external factors that contribute to a team becoming

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EVIDENCE GUIDE	
	and remaining innovative.
Context of and specific resources for assessment	Assessment must ensure: • demonstration of skills as part of a team.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • direct observation of team interactions • evaluation of reports by the candidate or the team (could be oral or written) discussing the ideas, challenges and opportunities associated with teams, and how they can be more innovative • evaluation of feedback from other people in the team about the candidate's communication approaches and abilities • oral or written questioning to assess knowledge of the characteristics of innovative teams, innovation concepts more broadly and they ways in which innovation can be encouraged • review of jointly established 'groundrules' for how the team will operate.
Guidance information for assessment	Innovation does not occur in isolation. Holistic assessment with other units relevant to the industry sector, workplace and job role is highly recommended.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
What the team needs and wants to achieve may relate to:	• addressing particular customer feedback • conceiving and implementing a particular

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RANGE STATEMENT	
	project • developing new services or products • generating ongoing ideas within the work unit • improving budgetary performance • improving or changing work conditions • new ideas that impact beyond the workplace (e.g. that have a broader social or community impact)
Information about current or potential team members' work may relate to:	• interests • lifestyle preferences • past jobs • technical strengths • work preferences • working styles
Different ways that different people may contribute may relate to individual strengths around:	• creating positive energy within the team • fundamental literacy strengths (e.g. particularly strong in visual literacy, written or spoken communication) • generating ideas • networks or spheres of influence • particular ways of thinking • powers of persuasion • problem-solving capacities • specific technical skills or knowledge
Ground rules may relate to:	• boundaries or lack of boundaries for team activities and ideas • confidentiality • copyright, moral rights or intellectual property • regularity of communication • key roles and responsibilities • time lines • ways of communicating
Team-based innovation may be encouraged through:	• accessing training and learning opportunities • enough but not too much guidance and structure • equitable sharing of workload • follow-through with ideas • supportive communication
Behaviour that supports innovation may include being:	• collaborative • equitable

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RANGE STATEMENT	
	• fair • fun • hardworking • reflective • responsible • sympathetic
External stimuli and ideas might be from:	• Australia or overseas • colleagues outside of the team • family and friends • internet • journals • networks or technical experts • other organisations
Challenges of being innovative may relate to:	• budgetary or other resource constraints • competing priorities • organisational culture • problems with breaking old patterns of behaviour or thinking • time pressures

Unit Sector(s)

Unit sector	

Competency field

Competency field	Creativity and Innovation - Innovation

Co-requisite units

Co-requisite units		

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Co-requisite units		

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BSBINN502A Build and sustain an innovative work environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to create an environment that enables and supports the application of innovative practice. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals working in leadership or management roles in any industry or community context. The individual could be employed by the organisation, but may also be an external contractor, the leader of a cross organisation team or of a self formed team of individuals. The work group could be permanent or temporary in nature. The unit focuses on the skills and knowledge required to develop and implement a holistic approach to the integration of innovation across all areas of work practice. It also acknowledges the importance of wider contextual evaluation for potential innovations to ensure their value and benefit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Lead innovation by example	1.1. Make innovation an integral part of ***leadership and management activities*** 1.2. Demonstrate positive reception of ideas from others and provide constructive advice 1.3. Establish and maintain relationships based on mutual respect and trust 1.4. Take considered ***risks*** to open up opportunities for innovation 1.5. Regularly evaluate own approaches for consistency with the wider organisational or project context
2. Establish work practices that support innovation	2.1. Consult on and establish ***working conditions*** that reflect and encourage innovative practice 2.2. Introduce and maintain ***workplace procedures*** that foster innovation and allow for rigorous ***evaluation of innovative ideas*** 2.3. Facilitate and participate in ***collaborative work arrangements*** to foster innovation

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ELEMENT	PERFORMANCE CRITERIA
	2.4. Build and lead teams to work in ***ways that maximise opportunities for innovation***
3. Promote innovation	3.1. Acknowledge suggestions, improvements and innovations from all colleagues 3.2. Find appropriate ***ways of celebrating and promoting innovation*** 3.3. Promote and reinforce the value of innovation according to the vision and objectives of the organisation or project 3.4. Promote and support the evaluation of innovative ideas within the wider organisational or project context
4. Create a physical environment which supports innovation	4.1. Evaluate the ***impact of the physical environment*** in relation to innovation 4.2. Collaborate with colleagues about ideas for enhancing the physical work environment before taking action 4.3. Consider potential for supporting innovation when selecting physical resources and equipment 4.4. Design, fit-out and decorate workspaces to encourage creative mindsets, collaborative working and the development of positive workplace relationships
5. Provide learning opportunities	5.1. Pro-actively share relevant information, knowledge and skills with colleagues 5.2. Provide or encourage ***formal and informal learning opportunities*** to help develop the skills needed for innovation 5.3. Create opportunities in which individuals can learn from the experience of others

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• communication, consultation and negotiation skills to model and lead, open and collaborative relationships

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REQUIRED SKILLS AND KNOWLEDGE
• comprehension skills to interpret and develop information that may deal with complex ideas and relate to issues both within and outside a given workplace context • planning and organisational skills to implement wide-ranging practical processes and procedures that support innovation • problem-solving skills to assess and respond to challenges and risks around innovation at an operational management level • self-management and learning skills to evaluate and enhance personal effectiveness, and to promote a culture of ongoing learning and development.
Required knowledge
• benefits of providing coaching and learning opportunities in relation to innovation • concept of innovation, what it is and what it means for different people either working independently or within an organisation • context for innovation in the relevant workplace context including core business values, overall objectives, broader environmental context and the need to ensure the value and benefit of innovative ideas and projects • different ways of rewarding performance • factors and tools that can motivate individuals to use creative thinking and apply innovative work practices • legislative framework that impacts on operations in the relevant workplace context • management principles and leadership styles, including the impact of different approaches on innovation • typical challenges and barriers to innovation within teams and organisations, and ways of overcoming these • ways in which workplace climate can affect individual attitudes and performance.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • establishment of procedures and practices (for a project or a workplace) which support and foster innovative work practice and include sound

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EVIDENCE GUIDE	
	evaluation processes • modelling of behaviour that supports innovative work practice • knowledge and understanding of the role of leaders and managers in encouraging innovation, and the issues and challenges associated with building and sustaining an innovative work environment.
Context of and specific resources for assessment	Assessment must ensure: • involvement of a team for which the candidate provides leadership and guidance.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • evaluation of outcomes and processes from activities managed by the candidate, particularly in relation to how innovation and innovative practice was encouraged and supported • oral or written questioning to assess knowledge of ways that innovation can be fostered and the typical challenges and barriers to innovation.
Guidance information for assessment	Innovation does not occur in isolation. Holistic assessment with other units relevant to the industry sector, workplace and job role is highly recommended.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Leadership and management activities may include:	• people management practices • planning processes

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RANGE STATEMENT	
	• regular management meetings • review processes
Risks may include:	• budgetary issues • challenging changes in relationships, work practices and general workplace climate • unforseen impacts of innovative ideas
Working conditions may include:	• family-friendly leave entitlements • flexible working hours • social leave • study leave • time provided for coming up with ideas
Workplace procedures may relate to:	• briefing processes • client relations • performance management • project management • staff meetings • training
Evaluation of innovative ideas may relate to:	• analysing consistency with overall goals, values or vision • assessing resource requirements and practicalities • assessing the potential to find 'champions' or supporters • evaluating the external factors that may impact on the idea • exploring the implications of ideas that may stretch or change existing ways of doing things
Collaborative work arrangements might be:	• cross section • vertical teams • within a section • working with supplier organisations or partner organisations
Ways that maximise opportunities for innovation may relate to:	• collaborating • collecting data • creative thinking • future scanning • getting feedback • making suggestions • networking
Ways of celebrating and	• congratulating the project team

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RANGE STATEMENT	
promoting innovation may include:	• ensuring management acknowledgment • providing a newsletter story about the idea • using the idea to help foster other ideas • well-planned group incentive schemes
Impact of the physical environment may relate to:	• eating areas • extent to which design or style links with declared philosophies or objectives • external areas • general ambience of the work environment • location of different people • presence and ambience of relaxation areas • style of dÃ©cor • use of creative messages or images in the workplace • workspace design and dÃ©cor • workstation arrangements and opportunities for interaction
Formal and informal learning opportunities may include:	• coaching • conferences • formal training courses/programs • information seminars • job rotation • mentoring • online learning

Unit Sector(s)

Unit sector	

Competency field

Competency field	Creativity and Innovation - Innovation

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Co-requisite units

Co-requisite units		

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BSBINN601B Manage organisational change

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to determine strategic change requirements and opportunities; and to develop, implement and evaluate change management strategies. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to managers with responsibilities that extend across the organisation or across significant parts of a large organisation. They may have a dedicated role in human resources management, human resources development, or work in a strategic policy or planning area. The unit takes a structured approach to change management and applies to people with considerable work experience and organisational knowledge.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify change requirements and opportunities	1.1. Identify ***strategic change needs*** through an analysis of organisational objectives 1.2. Review existing policies and practices against strategic objectives to identify change requirements 1.3. Monitor trends in the ***external environment*** to identify events or trends that impact on the achievement of organisation's objectives 1.4. Identify major operational change requirements due to performance gaps, business opportunities or threats, or management decisions 1.5. Review and prioritise change requirements or opportunities with ***relevant managers*** 1.6. Consult specialists and experts to assist in the identification of major change requirements and opportunities
2. Develop change management strategy	2.1. Undertake cost-benefit analysis for high priority change requirements and opportunities 2.2. Undertake risk analysis, identify ***barriers to change***, and agree and record mitigation strategies 2.3. Develop change management project plan 2.4. Obtain approvals from relevant authorities to

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ELEMENT	PERFORMANCE CRITERIA
	confirm the change management process 2.5. Assign ***resources*** to the project and agree reporting protocols with relevant managers
3. Implement change management strategy	3.1. In consultation with relevant groups and individuals, develop communication or education plan to promote the benefits of the change to the organisation and to minimise loss 3.2. Arrange and manage activities to deliver the communication or education plans to relevant groups and individuals 3.3. Consult with relevant groups and individuals for input into the change process 3.4. Identify and respond to barriers to the change according to risk management plans 3.5. Action ***interventions and activities*** set out in project plan according to project timetable 3.6. Activate strategies for embedding the change 3.7. Conduct regular evaluation and review, and modify project plan where appropriate to achieve change program objectives

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- high level interpersonal and leadership skills to obtain acceptance of change processes and to inspire trust
- innovation skills to think laterally and to develop creative means to enable people to accept change positively
- learning skills to enable openness to new ideas and techniques which could contribute to ongoing organisational improvement
- planning and organising skills to sequence events and to enable staff to be clear in times of change or turbulence
- problem-solving skills to identify and respond to barriers to the change and analyse risks
- project management skills to implement the change management strategy
- teamwork skills to consult with relevant groups and individuals for input to the

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REQUIRED SKILLS AND KNOWLEDGE
change process • verbal communication skills to consult with relevant stakeholders and promote the change management plan
Required knowledge
• change management process or cycle • components of a change management project plan • impact of the external environment on change strategies • organisational behaviour • potential barriers to change • range of strategies for embedding change

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • development of a change process that detailsrationale for the change and its objectives • implementation of a change process • critical evaluation of how the change process was managed • demonstration of techniques for responding to resistance to change.
Context of and specific resources for assessment	Assessment must ensure access to appropriate documentation and resources normally used in the workplace.
Method of assessment	The following assessment methods are appropriate for this unit: • analysis of responses to case studies and scenarios around change management • assessment of reports on change management • direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance by the candidate • review of change management project plan and communication

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EVIDENCE GUIDE	
	or education plans • review of records outlining consultation with relevant groups and individuals for input to the change process • oral or written questioning to assess knowledge of change management strategies.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Strategic change needs may include:	• actions arising from strategic planning activities to bring about major change in the organisation, which may relate to: • people • processes • technology • structure.
External environment may refer to factors that are:	• consumer-driven • ecological • economic • ethical • global • legal • political • social • technological • the drive to corporate sustainability • the move to a knowledge economy • workforce-driven.
Relevant managers may	• affected by the change

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RANGE STATEMENT	
include those:	• holding a leadership position in the organisation • participating in the change project.
Barriers to change may include:	• challenges to group norms or established roles • existing organisational culture • existing reward systems • fear of loss of status, security, power or friends • interdepartmental rivalry or conflict • lack of involvement in the change • low morale • vested interests.
Resources may include:	• contractors • employees and managers • external and internal consultants • financial and budget allocation • hardware and software • physical assets.
Interventions and activities may include:	• action research • career planning • job redesign • sensitivity training • succession planning • surveys (with feedback) • team building • termination or redeployment • training • transition analysis.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Creativity and innovation - innovation

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Co-requisite units

Co-requisite units		

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BSBLED401A Develop teams and individuals

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to determine individual and team development needs and to facilitate the development of the workgroup. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals with a broad knowledge of learning and development who apply their skills in addressing development needs to meet team objectives. They may have responsibility to provide guidance or to delegate aspects of tasks to others.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine development needs	1.1. Systematically identify and implement ***learning and development needs*** in line with ***organisational requirements*** 1.2. Ensure that a learning plan to meet individual and group training and development needs is collaboratively developed, agreed to and implemented 1.3. Encourage individuals to self-evaluate performance and identify areas for improvement 1.4. Collect ***feedback on performance*** of team members from relevant sources and compare with established team learning needs
2. Develop individuals and teams	2.1. Identify learning and development program goals and objectives, ensuring a match to the specific knowledge and skill requirements of competency standards relevant to the industry 2.2. Ensure that ***learning delivery methods*** are appropriate to the learning goals, the learning style of participants, and availability of ***equipment and resources*** 2.3. Provide workplace learning opportunities, and ***coaching and mentoring assistance*** to facilitate individual and team achievement of competencies 2.4. Create development opportunities that incorporates a

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ELEMENT	PERFORMANCE CRITERIA
	range of activities and support materials appropriate to the achievement of identified competencies 2.5. Identify and approve resources and time lines required for learning activities in accordance with organisational requirements
3. Monitor and evaluate workplace learning	3.1. Use feedback from individuals or teams to identify and implement improvements in future learning arrangements 3.2. Assess and record outcomes and performance of individuals/teams to determine the effectiveness of development programs and the extent of additional development support 3.3. Negotiate modifications to learning plans to improve the efficiency and effectiveness of learning 3.4. Document and maintain records and reports of competency according to organisational requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to receive and report on feedback, to maintain effective relationships and to manage conflict
- culturally appropriate communication skills to relate to people from diverse backgrounds and people with diverse abilities
- leadership skills to gain trust and confidence of clients and colleagues
- literacy skills to read, write and understand a variety of texts; and to edit and proofread documents to ensure clarity of meaning, accuracy and consistency of information
- negotiation skills to achieve mutually acceptable outcomes
- technology skills to support effective communication and presentation.

Required knowledge

- key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as:
  - anti-discrimination legislation
  - ethical principles

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REQUIRED SKILLS AND KNOWLEDGE
• codes of practice • privacy laws • occupational health and safety (OHS) • facilitation techniques to encourage team development and improvement • organisational policies, plans and procedures • career paths and competency standards relevant to the industry.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • identifying and implementing learning opportunities for others • giving and receiving feedback from team members to encourage participation in and effectiveness of team • creating learning plans to match skill needs • knowledge of relevant legislation.
Context of and specific resources for assessment	Assessment must ensure: • access to an actual workplace or simulated environment • access to office equipment and resources • examples of learning and development plans, policies and procedures • examples of documents relating to diversity policies and procedures.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • analysis of responses to case studies and scenarios

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EVIDENCE GUIDE	
	• oral or written questioning to assess knowledge of career paths and competency standards relevant to the industry • review of records and reports of competency.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • management units • other learning and development units.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Learning and development needs may include:	• career planning/development • coaching, mentoring and/or supervision • formal/informal learning programs • internal/external training provision • performance appraisals • personal study • recognition of current competence/skills recognition • work experience/exchange/opportunities • workplace skills assessment
Organisational requirements may include:	• access and equity principles and practices • anti-discrimination and related policy • business and performance plans • confidentiality and security requirements • defined resource parameters • ethical standards • goals, objectives, plans, systems and processes • legal and organisational policies, guidelines and requirements

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RANGE STATEMENT	
	• OHS policies, procedures and programs • quality and continuous improvement processes and standards • quality assurance and/or procedures manuals
Feedback on performance may include:	• formal/informal performance appraisals • obtaining feedback from clients • obtaining feedback from supervisors and colleagues • personal, reflective behaviour strategies • routine organisational methods for monitoring service delivery
Learning delivery methods may include:	• conference and seminar attendance • formal course participation • induction • involvement in professional networks • on-the-job coaching or mentoring • presentations/demonstrations • problem-solving • work experience
Equipment and resources may include:	• facilities • funding • guest speakers • technological tools and equipment • time • training equipment such as whiteboards and audio-visual equipment
Coaching and mentoring assistance may include:	• fair and ethical practice • non-discriminatory processes and activities • presenting and promoting a positive image of the collective group • problem-solving • providing encouragement • providing feedback to another team member • respecting the contribution of all participants and giving credit for achievements

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Unit Sector(s)

Unit sector	

Competency field

Competency field	Workforce Development - Learning and Development

Co-requisite units

Co-requisite units		

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BSBLED501A Develop a workplace learning environment

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to encourage and support the development of a learning environment in which work and learning come together. Particular emphasis is on the development of strategies to facilitate and promote learning, and to monitor and improve learning performance. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to managers. All managers have a prominent role in encouraging, supporting and facilitating the development of a learning environment in which work and learning come together. At this level work will normally be carried out within complex and diverse methods and procedures, which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Create learning opportunities	1.1. Identify potential formal and informal ***learning opportunities*** 1.2. Identify ***learning needs*** of individuals in relation to the needs of the team and/or enterprise, and available learning opportunities 1.3. Develop and implement ***learning plans*** as an integral part of individual and team performance plans 1.4. Develop strategies to ensure that learning plans reflect the ***diversity of needs*** 1.5. Ensure organisational procedures maximise individual and team access to, and participation in, learning opportunities 1.6. Ensure effective liaison occurs with ***training and development specialists*** and contributes to learning opportunities which enhance individual, team and organisational performance

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ELEMENT	PERFORMANCE CRITERIA
2. Facilitate and promote learning	2.1. Develop strategies to ensure that workplace learning opportunities are used and that team members are encouraged to share their skills and knowledge to ***encourage a learning culture*** within the team 2.2. Implement organisational procedures to ensure workplace learning opportunities contribute to the development of appropriate workplace knowledge, skills and attitudes 2.3. Implement policies and procedures to encourage team members to assess their own competencies, and to identify their own learning and development needs 2.4. Share the benefits of learning with others in the team and organisation 2.5. Recognise workplace achievement by timely and appropriate recognition, feedback and rewards
3. Monitor and improve learning effectiveness	3.1. Use strategies to ensure that team and individual learning performance is monitored to determine the type and extent of any additional work-based support required, and any occupational health and safety (OHS) issues 3.2. Use feedback from individuals and teams to identify and introduce improvements in future learning arrangements 3.3. Make adjustments, negotiated with training and development specialists, for improvements to the efficiency and effectiveness of learning 3.4. Use processes to ensure that records and reports of competency are documented and maintained within the organisation's systems and procedures to inform future planning

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• communication skills to: • deal with people openly and fairly

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REQUIRED SKILLS AND KNOWLEDGE
• encourage colleagues to share their knowledge and skills • gain the trust and confidence of colleagues • use consultation skills effectively • literacy skills to access and use workplace information • planning and organisational skills to facilitate, promote and monitor learning by: • developing learning plans • establishing a workplace which is conducive to learning • evaluating the effectiveness of learning • identifying learning needs • negotiating learning arrangements with training and development specialists • selecting and using work activities to create learning opportunities • using coaching and mentoring to support learning.
Required knowledge
• management of relationships to achieve a learning environment • principles and techniques involved in the management and organisation of: • adult learning • coaching and mentoring • consultation and communication • improvement strategies • leadership • learning environment and learning culture • monitoring and reviewing workplace learning • problem identification and resolution • record keeping and management methods • structured learning • work-based learning.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	

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EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • methods for reviewing performance development needs and techniques for providing feedback on those needs • models for planning professional development • options available for professional development • knowledge of relationship management required to achieve a learning environment.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • assessment of written reports • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of performance in role plays • observation of presentations • oral or written questioning to assess knowledge of the principles and techniques involved in the management and organisation of adult learning • review of the development and implementation of learning plans • evaluation of how workplace achievement is recognised • review of processes used to record and report competency.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Diploma of Management.

Range Statement

RANGE STATEMENT

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RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	

Learning opportunities may include:	• structured learning activities conducted outside and within the workplace such as:
	  • accredited training through an independent organisation such as a state/territory OHS authority
	  • action learning
	  • short courses
	  • training through a Registered Training Organisation (RTO) leading to a nationally recognised Australian Qualifications Framework (AQF) qualification or Statement of Attainment
	  • workshops
	• workplace learning activities, that may also contribute to a recognised credential, such as:
	  • coaching
	  • exchange/rotation
	  • induction
	  • mentoring
	  • shadowing

Learning needs may include:	• developmental learning, for example the learning required to progress through an organisation and take on new tasks and roles • gaps between the competencies held by the employee, and the skills and knowledge required to effectively undertake workplace tasks
Learning plans may include:	• codes of conduct • key performance indicators • negotiated agreement with individual/s • OHS requirements • performance standards • team competencies • team roles and responsibilities • work outputs and processes

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RANGE STATEMENT	
Diversity of needs may include:	• learning needs that relate to social, cultural and other types of workplace diversity, such as the need for varied communication styles and approaches
Training and development specialists may be:	• internal • external
Encourage a learning culture may refer to:	• encouraging learning and sharing skills and knowledge across the work team and the wider organisation to develop competencies of individual team members and the team as a whole

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBMGT402A Implement operational plan

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to implement the operational plan by monitoring and adjusting operational performance, producing short term plans for the department/section, planning and acquiring resources and providing reports on performance as required. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers are actively engaged in planning activities to achieve the measurable, stated objectives of the team and the organisation. This key role is carried out to provide safe, efficient and effective products and services to customer satisfaction within the organisation's productivity and profitability plans. At this level, work will normally be carried out within routine and non routine methods and procedures, which require planning, evaluation, leadership and guidance of others.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Implement operational plan	1.1. Collate, analyse and organise details of ***resource requirements*** in consultation with ***relevant personnel***, ***colleagues and specialist resource managers*** 1.2. Implement ***operational plans*** to contribute to the achievement of organisation's performance/business plan 1.3. Identify and use ***key performance indicators*** (KPIs) to monitor operational performance 1.4. Undertake ***contingency planning*** and ***consultation processes*** 1.5. Provide assistance in the development and presentation of proposals for resource requirements in line with operational planning processes
2. Implement resource acquisition	2.1. Recruit and induct employees within ***organisation's policies***, ***practices and procedures*** 2.2. Implement plans for acquisition of physical

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ELEMENT	PERFORMANCE CRITERIA
	resources and services within organisation's policies, practices and procedures and in consultation with relevant personnel
3. Monitor operational performance	3.1. Monitor ***performance systems and processes*** to assess progress in achieving profit/productivity plans and targets 3.2. Analyse and use budget and actual financial information to monitor profit/productivity performance 3.3. Identify unsatisfactory performance and take prompt action to rectify the situation according to organisational policies 3.4. Provide mentoring, coaching and supervision to support individuals and teams to use resources effectively, economically and safely 3.5. Present recommendations for variation to operational plans to the ***designated persons***/***groups*** and gain approval 3.6. Implement ***systems***, ***procedures and records*** associated with performance in accordance with organisation's requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- coaching and mentoring skills to provide support to colleagues
- literacy skills to access and use workplace information, and to prepare reports
- planning and organising skills to monitor performance and to sequence work of self and others to achieve planned outcomes.

Required knowledge

- principles and techniques associated with:
  - contingency planning
  - methods for monitoring and reporting on performance
  - monitoring and implementing operations and procedures
  - problem identification and methods of resolution

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REQUIRED SKILLS AND KNOWLEDGE
• relevant budgeting and financial analysis, interpretation and reporting requirements • resource management systems at the tactical implementation level • resource planning and acquisition • tactical risk analysis including identification and reporting requirements.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • ability to monitor and adjust operational performance, produce short-term plans for the department or section, plan and acquire resources, and provide reports on performance as required • knowledge of principles and techniques associated with monitoring and implementing operations and procedures.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • review of documentation outlining contingency planning and consultation processes undertaken • demonstration of techniques in managing performance • evaluation of mentoring, coaching and supervision provided to support individuals and teams to use resources effectively, economically and safely.

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EVIDENCE GUIDE	
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Certificate IV in Frontline Management.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Resource requirements may refer to:	• goods and services to be purchased and ordered • human, physical and financial resources - both current and projected • stock requirements and requisitions
Relevant personnel, ***colleagues and specialist resource managers*** may include:	• colleagues and specialist resource managers • managers • occupational health and safety committees and other people with specialist responsibilities • other employees • people from a wide range of social, cultural and ethnic backgrounds, and people with a range of physical and mental abilities • supervisors
Operational plans may refer to:	• organisational plans • tactical plans developed by the department or section to detail product and service performance
Key performance indicators may refer to:	• measures for monitoring or evaluating the efficiency or effectiveness of a system, and which may be used to demonstrate accountability and to identify areas for improvements

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RANGE STATEMENT	
Contingency planning may refer to:	• contracting out or outsourcing human resources and other functions or tasks • diversification of outcomes • finding cheaper or lower quality raw materials and consumables • increasing sales or production • recycling and re-use • rental, hire purchase or alternative means of procurement of required materials, equipment and stock • restructuring of organisation to reduce labour costs • risk identification, assessment and management processes • seeking further funding • strategies for reducing costs, wastage, stock or consumables • succession planning
Consultation processes may refer to:	• mechanisms used to provide feedback to the work team in relation to outcomes of consultation • meetings, interviews, brainstorming sessions, email/intranet communications, newsletters or other processes and devices which ensure that all employees have the opportunity to contribute to team and individual operational plans
Organisation's policies, ***practices and procedures*** may include:	• organisational culture • Standard Operating Procedures • organisational guidelines which govern and prescribe operational functions, such as the acquisition and management of human and physical resources • undocumented practices in line with organisational operations

Performance systems and processes may refer to:	• informal systems used by frontline managers for the work team in the place of existing organisation-wide systems
	• formal processes within the organisation to measure performance, such as:
	  • feedback arrangements
	  • individual and teamwork plans

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RANGE STATEMENT	
	• KPIs • specified work outcomes
Designated persons*/*groups may include:	• other affected work groups or teams and groups designated in workplace policies and procedures • those who have the authority to make decisions and/or recommendations about operations such as workplace supervisors, other managers
Systems*, *procedures and records may include:	• databases and other recording mechanisms for ensuring records are kept in accordance with organisational requirements • individual and team performance plans • organisational policies and procedures relative to performance

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBMGT403A Implement continuous improvement

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to implement the organisation's continuous improvement systems and processes. Particular emphasis is on using systems and strategies to actively encourage the team to participate in the process, monitoring and reviewing performance, and identifying opportunities for further improvements. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers have an active role in implementing the continuous improvement process to achieve the organisation's objectives. Their position, closely associated with the creation and delivery of products and services, means that they have an important role in influencing the ongoing development of the organisation. At this level, work will normally be carried out within routine and non routine methods and procedures, which require planning and evaluation, and leadership and guidance of others.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Implement continuous improvement systems and processes	1.1. Implement ***systems*** to ensure that individuals and teams are actively encouraged and supported to ***participate in decision making processes***, assume responsibility and exercise initiative 1.2. Communicate the organisation's ***continuous improvement processes*** to individuals and teams, and obtain feedback 1.3. Ensure effective ***mentoring and coaching*** allows individuals and teams to implement the organisation's continuous improvement processes
2. Monitor and review performance	2.1. Use the organisation's systems and ***technology*** to monitor and review progress and to identify ways in which planning and operations could be improved 2.2. Improve ***customer service*** through continuous improvement techniques and processes

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ELEMENT	PERFORMANCE CRITERIA
	2.3. Formulate and communicate recommendations for adjustments to those who have a role in their development and implementation
3. Provide opportunities for further improvement	3.1. Implement ***processes to ensure that team members are informed of savings and productivity/service improvements*** in achieving the business plan 3.2. Document work performance to aid the identification of further opportunities for improvement 3.3. Manage records, reports and recommendations for improvement within the organisation's systems and processes

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills

• communication skills to:
  • coach and mentor team members
  • gain the commitment of individuals and teams to continuously improve
• innovation skills to design better ways of performing work.

Required knowledge

• principles and techniques associated with:
  • benchmarking
  • best practice
  • change management
  • continuous improvement systems and processes
  • quality systems.

Evidence Guide

EVIDENCE GUIDE
The Evidence Guide provides advice on assessment and must be read in conjunction with the

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EVIDENCE GUIDE	
performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • taking active steps to implement, monitor and adjust plans, processes and procedures to improve performance • supporting others to implement the continuous improvement system/processes, and to identify and report opportunities for further improvement • knowledge of principles and techniques associated with continuous improvement systems and processes.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • assessment of written reports • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of presentations • oral or written questioning to assess knowledge of principles and techniques associated with change management • review of how the organisation's continuous improvement processeswascommunicated to individuals and teams • review of documentation of work performance.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Certificate IV in Frontline Management.

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Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Systems may refer to:	• forums, meetings • newsletters and reports • organisational policies and procedures • web-based communication devices
Participation in decision making processes may include:	• feedback in relation to outcomes of the consultative process • processes which ensures all employees have the opportunity to contribute to organisational issues
Continuous improvement processes may include:	• cyclical audits and reviews of workplace, team and individual performance • evaluations and monitoring of effectiveness • implementation of quality systems, such as International Standardization for Organization (ISO) • modifications and improvements to systems, processes, services and products • policies and procedures which allow the organisation to systematically review and improve the quality of its products, services and procedures • seeking and considering feedback from a range of stakeholders
Mentoring and coaching may refer to:	• providing assistance with problem-solving • providing feedback, support and encouragement • teaching another member of the team, usually focusing on a specific work task or skill
Technology may include:	• computerised systems and software such as databases, project management and word processing • telecommunications devices • any other technology used to carry out work roles and responsibilities

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RANGE STATEMENT	
Customer service may be:	• internal or external • to existing, new or potential clients
Processes to ensure that team members are informed of savings and productivity/service improvements may refer to:	• email/intranet, newsletters or other communication devices • newsletters and bulletins • staff reward mechanisms • team meetings

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBMGT502B Manage people performance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to manage the performance of staff who report to them directly. Development of key result areas and key performance indicators and standards, coupled with regular and timely coaching and feedback, provide the basis for performance management. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to all managers and team leaders who manage people. It covers work allocation and the methods to review performance, reward excellence and provide feedback where there is a need for improvement. The unit makes the link between performance management and performance development, and reinforces both functions as a key requirement for effective managers. This is a unit that all managers/prospective managers who have responsibility for other employees should strongly consider undertaking.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Allocate work	1.1. Consult relevant groups and individuals on work to be allocated and resources available 1.2. Develop work plans in accordance with operational plans 1.3. Allocate work in a way that is efficient, cost effective and outcome focussed 1.4. Confirm ***performance standards***, ***Code of Conduct*** and work outputs with relevant teams and individuals 1.5. Develop and agree ***performance indicators*** with relevant staff prior to commencement of work 1.6. Conduct ***risk analysis*** in accordance with the organisational risk management plan and legal requirements
2. Assess performance	2.1. Design ***performance management*** and review processes to ensure consistency with organisational

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ELEMENT	PERFORMANCE CRITERIA
	objectives and policies 2.2. Train participants in the performance management and review process 2.3. Conduct performance management in accordance with organisational protocols and time lines 2.4. Monitor and evaluate performance on a continuous basis
3. Provide feedback	3.1. Provide informal feedback to staff on a regular basis 3.2. Advise relevant people where there is poor performance and take necessary actions 3.3. Provide on-the-job coaching when necessary to improve performance and to confirm ***excellence in performance*** 3.4. Document performance in accordance with the organisational performance management system 3.5. Conduct formal structured feedback sessions as necessary and in accordance with organisational policy
4. Manage follow up	4.1. Write and agree performance improvement and development plans in accordance with organisational policies 4.2. Seek assistance from human resources specialists where appropriate 4.3. Reinforce excellence in performance through recognition and continuous feedback 4.4. Monitor and coach individuals with poor performance 4.5. Provide support services where necessary 4.6. Counsel individuals who continue to perform below expectations and implement the disciplinary process if necessary 4.7. ***Terminate*** staff in accordance with legal and organisational requirements where serious misconduct occurs or ongoing poor-performance continues

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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REQUIRED SKILLS AND KNOWLEDGE This section describes the skills and knowledge required for this unit.
Required skills
• communication skills to articulate expected standards of performance, to provide effective feedback and to coach staff who need development • risk management skills to analyse, identify and develop mitigation strategies for identified risks • planning and organisation skills to ensure a planned and objective approach to the performance management system.
Required knowledge
• relevant legislation from all levels of government that affects business operation, especially in regard to occupational health and safety and environmental issues, equal opportunity, industrial relations and anti-discrimination • relevant awards and certified agreements • performance measurement systems utilised within the organisation • unlawful dismissal rules and due process • staff development options and information.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • documented performance indicators and a critical description and analysis of performance management system from the workplace • techniques in providing feedback and coaching for improvement in performance • knowledge of relevant awards and certified agreements.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.

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EVIDENCE GUIDE	
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • assessment of written reports • demonstration of techniques in providing feedback and coaching • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • review of work plans, performance indicators, risk analysis,performance management and review processes, performance improvement and development plans.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other management units.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Performance standards mean:	• level of performance sought from an individual or group which may be expressed either quantitatively or qualitatively
Code of Conduct means:	• agreed (or decreed) set of rules relating to employee behaviour/conduct with other employees or an agreed (or decreed) set of rules relating to employee behaviour/conduct with other employees or customers
Performance indicators mean:	• measures against which performance outcomes are gauged

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RANGE STATEMENT	
Risk analysis means:	• determination of the likelihood of a negative event preventing the organisation meeting its objectives and the likely consequences of such an event on organisational performance
Performance management means:	• in accordance with relevant industrial agreements • process or set of processes for establishing a shared understanding of what an individual or group is to achieve, and managing and developing individuals in a way which increases the probability it will be achieved in both the short- and long-term
Excellence in performance means:	• regularly and consistently exceeding the performance targets established while meeting the organisation's performance standards
Termination means:	• cessation of the contract of employment between an employer and an employee, at the initiative of the employer within relevant industrial agreements

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBMGT515A Manage operational plan

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to develop and monitor implementation of the operational plan to provide efficient and effective workplace practices within the organisation's productivity and profitability plans. Management at a strategic level requires systems and procedures to be developed and implemented to facilitate the organisation's operational plan. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to people who manage the work of others and operate within the parameters of a broader strategic and/or business plan. The task of the manager at this level is to develop and implement an operational plan to ensure that the objectives and strategies outlined in the strategic and/or business plan are met by work teams. However in some larger organisations operational plans may be developed by a strategic planning unit. At this level work will normally be carried out within complex and diverse methods and procedures, which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Develop operational plan	1.1. Research, analyse and document ***resource requirements*** and develop an operational plan in consultation with ***relevant personnel***, ***colleagues and specialist resource managers*** 1.2. Develop and/or implement ***consultation processes*** as an integral part of the operational planning process 1.3. Ensure details of the operational plan include the development of ***key performance indicators*** to measure organisational performance 1.4. Develop and implement ***contingency plans*** at appropriate stages of operational planning 1.5. Ensure the development and presentation of proposals for resource requirements is supported by a variety of information sources and seek specialist

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ELEMENT	PERFORMANCE CRITERIA
	advice as required 1.6. Obtain approval for plan from relevant parties and ensure understanding among work teams involved
2. Plan and manage resource acquisition	2.1. Develop and implement strategies to ensure that employees are recruited and/or inducted within the organisation's human resources management policies and practices 2.2. Develop and implement strategies to ensure that physical resources and services are acquired in accordance with the ***organisation's policies***, ***practices and procedures***
3. Monitor and review operational performance	3.1. Develop, monitor and review performance systems and processes to assess progress in achieving profit and productivity plans and targets 3.2. Analyse and interpret budget and actual financial information to monitor and review profit and productivity performance 3.3. Identify areas of under performance, recommend solutions, and take prompt action to rectify the situation 3.4. Plan and implement systems to ensure that mentoring and coaching are provided to support individuals and teams to effectively, economically and safely use resources 3.5. Negotiate recommendations for variations to operational plans and gain approval from ***designated persons***/***groups*** 3.6. Develop and implement systems to ensure that procedures and records associated with documenting performance are managed in accordance with organisational requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• literacy skills to access and use workplace information and to write a succinct and

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REQUIRED SKILLS AND KNOWLEDGE
practical plan • technology skills to use software to produce and monitor the plan against performance indicators • planning and organisational skills • coaching skills to work with people with poor performance • numeracy skills to allocate and manage financial resources.
Required knowledge
• models and methods for operational plans • budgeting processes • alternative approaches to improving resource usage and eliminating resource inefficiencies and waste.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • development of an operational plan with details of how it will be implemented and monitored • knowledge of models and methods for operational plans.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • oral or written questioning to assess knowledge of budgeting processes • review of operational plan, key performance

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EVIDENCE GUIDE	
	indicators and contingency plans • evaluation of employee recruitment and induction strategies • evaluation of processes implemented to acquire physical resources and services.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Diploma of Management.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Resource requirements may include:	• goods and services to be purchased and ordered • human, physical and financial resources - both current and projected • stock requirements and requisitions
Relevant personnel, ***colleagues and specialist resource managers*** may include:	• employees at the same level or more senior managers • managers • occupational health and safety committee/s and other people with specialist responsibilities • supervisors • union or employee representatives
Consultation processes may refer to:	• email/intranet communications, newsletters or other processes and devices which ensure that all employees have the opportunity to contribute to team and individual operational plans • mechanisms used to provide feedback to the work team in relation to outcomes of

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RANGE STATEMENT	
	consultation • meetings, interviews, brainstorming sessions
Operational plans may also be termed:	• action plans • annual plans • management plans • tactical plans
Key performance indicators may refer to:	• measures for monitoring or evaluating the efficiency or effectiveness of a system which may be used to demonstrate accountability and to identify areas for improvements
Contingency plans may include:	• contracting out or outsourcing human resources and other functions or tasks • diversification of outcomes • finding cheaper or lower quality raw materials and consumables • increasing sales or production • recycling and re-using • rental, hire purchase or alternative means of procurement of required materials, equipment and stock • restructuring of organisation to reduce labour costs • risk identification, assessment and management processes • seeking further funding • strategies for reducing costs, wastage, stock or consumables • succession planning
Organisation's policies, ***practices and procedures*** may include:	• organisational culture • organisational guidelines which govern and prescribe operational functions, such as the acquisition and management of human and physical resources • Standard Operating Procedures • undocumented practices in line with organisational operations
Designated persons/***groups*** may include:	• groups designated in workplace policies and procedures • managers or supervisors whose roles and responsibilities include decision making on operations • other stakeholders such as Board members

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RANGE STATEMENT	
	• other work groups or teams whose work will be affected by recommendations for variations

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBMGT516C Facilitate continuous improvement

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to lead and manage continuous improvement systems and processes. Particular emphasis is on the development of systems and the analysis of information to monitor and adjust performance strategies, and to manage opportunities for further improvements. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to managers who take an active role in managing a continuous improvement process in order to achieve an organisation's objectives. Where managers are closely associated with the creation and delivery of products and services, they play an important part in influencing the ongoing development of the organisation. At this level, work will normally be carried out using complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem-solving and decision-making strategies.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Lead continuous improvement systems and processes	1.1. Develop ***strategies*** to ensure that team members are actively encouraged and supported to participate in decision-making processes, assume responsibility and exercise initiative as appropriate 1.2. Establish ***systems*** to ensure that the organisation's ***continuous improvement processes*** are communicated to ***stakeholders*** 1.3. Ensure that change and improvement processes meet ***sustainability requirements*** 1.4. Develop effective mentoring and coaching processes to ensure that individuals and teams are able to implement and support the organisation's continuous improvement processes 1.5. Ensure that insights and experiences from business

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ELEMENT	PERFORMANCE CRITERIA
	activities are captured and accessible through ***knowledge management systems***
2. Monitor and adjust performance strategies	2.1. Develop strategies to ensure that systems and processes are used to monitor ***operational progress*** and to identify ways in which planning and operations could be improved 2.2. Adjust and communicate strategies to stakeholders according to organisational procedures
3. Manage opportunities for further improvement	3.1. Establish processes to ensure that team members are informed of outcomes of continuous improvement efforts 3.2. Ensure processes include ***recording of work team performance*** to assist in identifying further opportunities for improvement 3.3. Consider areas identified for further improvement when undertaking future planning

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• communication skills tocommunicate opportunities for improvement • learning skills to coach and mentor staff, using a range of methods to cater for different learning styles • innovation and lateral thinking skills to design better ways for achieving work outcomes • planning skills to establish and monitor systems and process for continuous improvement • teamwork and leadership skills to gain the confidence and trust of others
Required knowledge
• continuous improvement models • knowledge management systems • quality systems • sustainability principles

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Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • development and use of a range of strategies and approaches that improve work outcomes or organisational functioning, using continuous improvement models • monitoring performance and customer service.
Context of and specific resources for assessment	Assessment must ensure access to appropriate documentation and resources normally used in the workplace.
Method of assessment	The following assessment methods are appropriate for this unit: • analysis of responses to case studies and scenarios • assessment of reports • direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance by the candidate • observationof presentations • oral or written questioning to assess knowledge of quality systems • review of strategies developed to ensure that team members are actively encouraged and supported to participate in decision-making processes, assume responsibility and exercise initiative • evaluation of how customer-service strategies were communicated to stakeholders • review of documentation outlining work team performance.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different

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RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Strategies may refer to:	• clarification of roles and expectations • communication devices and processes, such as intranet and email communication systems, to facilitate input into workplace decisions • long-term or short-term plans that factor in opportunities for team input • mentoring and 'buddy' systems to support team members to participate in decision making • performance plans • reward and recognition programs for high performing staff • training and development activities.
Systems may refer to:	• forums and meetings • newsletters and reports • policies and procedures • electronic communication devices.
Continuous improvement processes may include:	• cyclical audits and reviews of workplace, team and individual performance • evaluations and monitoring of effectiveness • modifications and improvements to systems, processes, services and products • policies and procedures that allow an organisation to systematically review and improve the quality of its products, services and procedures • seeking and considering feedback from a range of stakeholders.
Stakeholders may include:	• business or government contacts • funding bodies • individuals within the work team • internal and external contacts • organisation's clients and customers • professional associations • senior management and board members • unions and employee groups.
Sustainability requirements may	• addressing environmental and resource sustainability initiatives, such as environmental management systems,

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RANGE STATEMENT	
include:	action plans, green office programs, surveys and audits • applying the waste management hierarchy in the workplace • complying with regulations and corporate social responsibility considerations for sustainability to enhance the organisation's standing in business and community environments • determining organisation's most appropriate waste treatment, including waste to landfill, recycling, re-use, recoverable resources and wastewater treatment • implementing ecological footprinting • implementing environmental management systems, e.g. ISO 14001:1996 Environmental management systems life cycle analyses • implementing government initiatives, e.g. Australian government's Greenhouse Challenge Plus • improving resource and energy efficiency • initiating and maintaining appropriate organisational procedures for operational energy consumption • introducing a green office program (a cultural change program) • introducing green purchasing • introducing national and international reporting initiatives, e.g. Global Reporting Initiative • introducing product stewardship • reducing emissions of greenhouse gases • reducing use of non-renewable resources • referencing standards, guidelines and approaches, such as sustainability covenants and compacts or triple bottom line reporting • supporting sustainable supply chain.
Knowledge management systems may include:	• best practice transfer • communities of practice • cross-project learning • expert directories • knowledge brokers' knowledge mapping • knowledge repositories • measuring and reporting intellectual capital • mentoring • performance management • post-project reviews • proximity and architecture

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RANGE STATEMENT	
	• social software • storytelling.
Operational progress may refer to:	• customer service indicators • OHS indicators • productivity gains • success in meeting agreed goals and performance indicators.
Recording of work team performance may include:	• annotated performance plans • quantitative data, such as production figures • recommendations for improvement • records and reports.

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and leadership - management

Co-requisite units

Co-requisite units		

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BSBWHS301A Maintain workplace safety

Modification History

Release	Comments
Release 1	This Unit first released with *BSB07 Business Training Package version 7.0*. Replaces and is equivalent to BSBCMN311B Maintain workplace safety.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to implement and monitor the organisation's work health and safety (WHS) policies, procedures and programs as part of a small work team.

Application of the Unit

This unit applies to workers who have a key role in maintaining workplace safety in an organisation. In their role they closely monitor aspects of work associated with the safe delivery of products and services, and they have an important responsibility in influencing ongoing safety in the workplace.

At this level, work will normally be carried out within known routines, methods and procedures but may also involve a number of complex or non-routine activities that require some discretion and judgement.

NOTE: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

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Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Assist with incorporating WHS policies and procedures into work team processes	1.1 Use ***WHS legislation*** as the basis for meeting the health and safety requirements of a small work team 1.2 Assist in providing and clearly explaining information to the work team about the organisation's ***WHS policies, procedures, programs and legislative requirements***, including the legal duties, powers, rights, obligations and responsibilities of individuals and parties inside and outside the workplace 1.3 Assist in regularly providing and clearly explaining information to the work team about ***identifying hazards*** and the outcomes of ***risk assessment***
2. Support participative arrangements for managing WHS	2.1 Implement and monitor ***organisational consultative procedures*** to facilitate participation of the work team in managing work area hazards 2.2 Promptly deal with issues raised through consultation according to organisational procedures for issue resolution 2.3 Encourage and assist work team members to contribute to managing WHS 2.4 Engage with individuals and work teams to identify and implement improvements in managing WHS feedback
3. Support the	3.1 Provide advice on ***WHS training needs*** of individuals and the

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organisation's procedures for providing WHS training	work team 3.2 Provide advice on strategies and opportunities for developing work team's WHS competence 3.3 Provide ***coaching and mentoring assistance*** to work team members to support the effective development of individual and team WHS competence
4. Participate in identifying hazards, and assessing and controlling risks for the work area	4.1 Provide advice on ***hazards in the work area*** according to organisational policies and procedures, and WHS legal requirements 4.2 Support the implementation of ***procedures to control risks*** using the hierarchy of control and according to organisational procedures and WHS legal requirements 4.3 Identify and report inadequacies in existing risk control measures according to organisational procedures, the hierarchy of control and WHS legal requirements 4.4 Accurately complete and maintain WHS incident records in the work area according to organisational procedures and WHS legislative requirements

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to:
  - assess resources required to apply risk controls
  - assist with environmental monitoring
  - identify hazards and assess risks appropriate to own work area and job role
  - monitor incidents and hazards
  - evaluate effectiveness of risk controls
- coaching and mentoring skills to provide support to colleagues
- communication skills to communicate with people from a range of backgrounds and with a range of abilities
- literacy skills to understand workplace procedures and work instructions for identifying and reporting hazards, and for interpreting WHS signs and symbols.

Required knowledge

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- characteristics and composition of the work team
- hazards and associated risks in the workplace
- organisational policies and procedures relating to WHS, including hazard management, fire, emergencies, evacuation, incident investigation and reporting
- relevant Acts, regulations and codes of practice from all levels of government that impact on business operations, especially with regard to WHS and environmental issues, equal opportunity, industrial relations and anti-discrimination
- WHS aspects of other organisational systems and procedures.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • implementing organisational management systems and WHS procedures in own work area • understanding of and meeting WHS legal and organisational requirements as they apply to own work area and job role • knowledge of procedures for identifying hazards in the work area • knowledge of procedures for assessing and controlling risks to health and safety associated with those hazards according to organisational WHS procedures.

Context of and specific resources for assessment	Assessment must ensure access to:
	• safety processes relevant to the area of work
	• relevant information and documentation on compliance requirements, such as:
	  • organisational policies and procedures, standard operating procedures and plans
	  • relevant Acts, regulations, codes of practice, licensing requirements and standards
	• relevant internal and external information
	• appropriate office equipment and resources used in

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	the identification and rectification of WHS compliance breaches.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third-party reports of on-the-job performance by the candidate • review of documents on WHS Acts, regulations, codes of practice, standards, policies and procedures developed and communicated to workers • analysis of responses to case studies and scenarios • demonstration of applying WHS legislation • oral or written questioning to assess knowledge of research and data-collection methods to obtain evidence of compliance with WHS legislation • assessment of duty of care arrangements.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

WHS legislation may include:	• WHS Acts, regulations and codes of practice
	• components of Acts and regulations, such as:
	  • dangerous goods
	  • environmental protection
	  • equal opportunity and anti-discrimination
	  • industrial relations
	  • privacy
	  • workers' compensation.

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WHS policies, procedures, programs and legislative requirements may include:	• consultative arrangements for workers in the work area • emergency plan and procedures • first aid provision, and medical practitioner contact and attention • hazard reporting procedures • incident investigation • plant and equipment maintenance and use • procedures for hazard identification • procedures for risk assessment, and the selection and implementation of risk control measures • purchasing policy and procedures • safe operating procedures and instructions • site access and egress • transport and storage of dangerous goods • use and care of personal protective equipment • use and storage of hazardous substances • WHS arrangements for on-site contractors, visitors and members of the public • WHS audits and safety inspections.
Individuals and parties may include:	• contractors and subcontractors • customers • persons conducting businesses or undertakings (PCBUs) or their officers • workers • other persons at a workplace • WHS entry permit holders • WHS inspectors • WHS regulators.

Methods for ***identifying hazards*** and ***risk assessment*** include:	• as specified in WHS Acts, regulations and codes of practice
	• checking equipment before and during work
	• consulting work team members
	• housekeeping
	• reviewing records, for example:
	  • equipment maintenance
	  • hazardous chemicals, including labels and safety data sheet (SDS) register, and dangerous goods storage list
	  • injury
	  • training plan
	• workplace inspections in area of responsibility.

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Organisational consultative procedures may include:	• attendance of health and safety representatives at management meetings • counselling and disciplinary processes • early response to worker suggestions, requests, reports and concerns put forward to management • formal and informal meetings • health and safety committees • other committees, for example planning and purchasing.
WHS training needs may include:	• coaching, mentoring and/or supervision • formal and informal learning programs • internal and external training programs • personal study.
Coaching and mentoring assistance may include:	• explaining and clarifying • presenting and promoting a safe workplace • problem solving • providing encouragement • providing feedback to another team member • respecting the contribution of all participants and giving credit for achievements.

Hazards in the work area may include:	• anything that has the potential to cause harm
	• as specified in WHS Acts, regulations and codes of practice
	• blocked exits
	• ergonomically unsuitable workstations and task design, for example:
	  • repetitive work
	  • poor lighting or glary surfaces
	  • non-adjustable work surfaces and seating
	• internal or external threat of occupational violence or bullying
	• lack of adequate storage
	• reliance on low order control measure (such as personal protective equipment) to reduce worker risk exposure, instead of controlling the hazard itself
	• slippery and uneven floors
	• unguarded and poorly maintained machinery and equipment
	• unlabelled chemicals and substances
	• untidy or noisy work areas.

Procedures to control risks may	• as specified in WHS Acts, regulations and codes of

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include actions, such as:	practice
	• application of the hierarchy of control, namely:
	  • eliminate the risk
	  • reduce or minimise the risk through:
	  • engineering controls
	  • administrative controls
	  • personal protective equipment
	• regular consultation with workers.

Unit Sector(s)

Regulation, Licensing and Risk – Work Health and Safety

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BSBWHS303A Participate in WHS hazard identification, risk assessment and risk control

Modification History

Release	Comments
Release 1	This Unit first released with *BSB07 Business Training Package version 7.0*.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to participate in identifying work health and safety (WHS) hazards, assessing WHS risks, and controlling WHS risks to maintain a healthy and safe workplace.

Application of the Unit

This unit applies to individuals who assist with the identification of workplace hazards and the assessment of WHS risks as part of their WHS responsibilities, which are in addition to their main duties.

NOTE: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Participate in workplace hazard identification	1.1 Participate in selecting hazard identification methods suitable for the workplace, as appropriate 1.2 Use selected methods to identify, report and record hazards according to workplace procedures and WHS Acts, regulations and codes of practice 1.3 Provide information and assistance to ***persons conducting hazard identification***
2. Participate in WHS risk assessment	2.1 Participate in selecting suitable risk assessment methods for the workplace, as appropriate 2.2 Use selected methods to assess and record risks according to workplace procedures and WHS Acts, regulations and codes of practice 2.3 Provide information and assistance to ***persons conducting risk assessments***
3. Promote and support worker consultation and participation in hazard identification and risk assessment	3.1 Advise workers of, and consult them about, hazard identification and risk assessment activities according to workplace WHS consultation and participation policies, procedures and processes 3.2 Encourage workers to participate appropriately in these activities according to workplace WHS consultation and participation policies, procedures and processes 3.3 Advise workers of, and consult them about, the results and outcomes of these activities according to workplace WHS consultation and participation policies, procedures and processes
4. Participate in developing, selecting and implementing WHS risk controls	4.1 Obtain workplace records of the outcomes of hazard identifications and risk assessments, and use them to participate in developing ***risk control options*** 4.2 Apply knowledge of WHS Acts, regulations, codes of

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	practice, other sources of information and guidelines, and workplace policies, procedures and processes to identify ***duty holders***
	4.3 Participate in selecting risk control options using ***appropriate criteria***
	4.4 Identify and report ***factors impeding*** successful implementation of selected risk controls
	4.5 Participate in developing a risk control ***implementation and evaluation plan***
	4.6 Provide information about the implementation and evaluation plan to ***individuals and parties***
5. Support effective worker consultation and participation in the risk control process	5.1 Advise workers of, and consult them about, developing risk control options, and selecting and implementing risk controls according to workplace WHS consultation and participation policies, procedures and processes
	5.2 Encourage workers to participate ***appropriately*** in these activities according to workplace WHS consultation and participation policies, procedures and processes

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
  - contribute effectively to hazard identification and risk assessment activities
  - communicate with people from a range of backgrounds and with a range of abilities
- literacy skills to:
  - participate in hazard identification and risk assessment activities, and to record the results and outcomes of these activities
  - communicate risk control activities to workers, health and safety committees, health and safety representatives, managers, supervisors, and persons conducting businesses or undertakings (PCBUs) or their officers
- organisational and time-management skills to sequence tasks and meet timelines
- planning skills to choose appropriate methods for hazard identification and risk assessment
- research skills to:
  - identify sources of, and obtain information about, relevant WHS hazards

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- help workplace parties to obtain information about hazards.
-

Required knowledge

- basic principles of incident causation and injury processes
- concept of hazards, risks and risk factors
- hazard identification and risk assessment methods
- internal and external sources of WHS information and data, and how to access them
- organisational design and structure
- organisational WHS policies, procedures, processes and systems
- range of WHS hazards that may be present in the workplace, the harm they can cause and how this harm occurs
- relevant commonwealth and state or territory WHS Acts, regulations, codes of practice, standards and guidance material, and other relevant publications
- risk control options for different hazards and work situations
- risk control requirements as specified in WHS Acts, regulations, codes of practice, standards and guidance material, other relevant publications, workplace conditions and organisational WHS policies, procedures, processes and systems
- types of hazard and risk registers
- WHS legislative requirements about:
  - communication, consultation and participation
  - notification of incidents
  - recordkeeping
  - specific hazard identification and risk assessment methods
- workplace communication processes.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • collection of information about workplace hazards and participation in the identification of hazards in a workplace • using hazard identification methods appropriately • participating in risk assessments for hazards

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	identified in the workplace • participating in developing, selecting and implementing risk controls in a workplace • knowledge of relevant commonwealth and state or territory Acts, regulations, codes of practice standards and guidance material.

Context of and specific resources for assessment	Assessment must ensure access to:
	• relevant information on WHS compliance requirements, such as:
	  • organisational policies, standard operating procedures and plans
	  • relevant Acts, regulations, codes of practice, licensing requirements and standards
	• relevant internal and external data files
	• appropriate computer resources needed to manage the identification and rectification of breaches in compliance requirements.

Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • demonstration of applying hazard identification, risk assessment and risk control techniques in the workplace • direct questioning combined with review of portfolios of evidence and third-party reports of on-the-job performance by the candidate • oral or written questioning to assess knowledge of consequences and likelihood of risks associated with hazards in the workplace • review of research into WHS hazards and their associated risks • review of information provided to individuals and parties about selected risk controls • assessment of documentation completed when identifying hazards, assessing risks and developing risk control options.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

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	• other BSB07 WHS units.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Persons conducting hazard identification and ***risk assessments*** may include:	• health and safety representatives • internal or external consultants and WHS specialists • PCBUs or their officers • WHS entry permit holders • WHS inspectors • workers • workplace assessors with experience in language or disability issues.

Risk control options may include:	• actions taken to eliminate risks entirely
	• actions taken to minimise risks by:
	  • eliminating the hazard
	  • substituting the hazard with something safer
	  • isolating the hazard
	  • reducing the risk through engineering controls
	  • reducing the level of harm by improving administrative controls, such as changing policies, procedures and processes or providing training
	• using personal protective equipment (PPE), such as:
	  • clothing and footwear
	  • face and eye protection
	  • hand protection
	  • head protection
	  • hearing protection
	  • respiratory protection.

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Duty holders may include:	• as specified in WHS Acts:
	  • PCBUs or their officers
	  • workers
	  • other persons at a workplace.

Appropriate criteria may include:	• relevant sections of WHS Acts, regulations, and codes of practice • other sources of information and guidelines • workplace policies and procedures • workplace conditions.
Factors impeding may include:	• access to technology or information • cultural differences arising from ethnic diversity • geographic dispersal of workers • lack of a systematic approach to managing WHS in the workplace • lack of support from key management personnel • language, literacy and numeracy levels of the workforce • shift work and rostering arrangements • unrealistic timeframes • unsupportive workplace culture • workplace organisational structures.
Implementation and evaluation plan may include:	• how controls will be implemented and how factors impeding successful implementation will be addressed • identifying who has the responsibility for implementing the components of the plan and evaluating risk controls • timetable for implementing and evaluating risk controls.
Individuals and parties may include:	• contractors and subcontractors • external people and organisations • health and safety committees • health and safety representatives • managers and supervisors • PCBUs or their officers • self • unions • WHS entry permit holders • WHS inspectors • WHS regulators • workers.
Appropriate ways to participate	• briefings

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may include:	• communicating with workplace parties • education and training • obtaining and communicating feedback on controls • trialling new processes and/or equipment.

Unit Sector(s)

Regulation, Licensing and Risk – Work Health and Safety

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BSBWHS501A Ensure a safe workplace

Modification History

Release	Comments
Release 1	This Unit first released with *BSB07 Business Training Package version 7.0*. Replaces and is equivalent to BSBOHS509A Ensure a safe workplace.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to establish, maintain and evaluate the organisation's work health and safety (WHS) policies, procedures and programs in the relevant work area according to WHS legislative requirements.

Application of the Unit

This unit applies to managers working in a range of contexts. It takes a systems approach and addresses compliance with relevant legislative requirements.

Those who have or are likely to have responsibility for WHS as part of their broader management role should undertake this unit.

The unit is relevant for people with obligations under WHS legislation, for example persons conducting a business or undertaking (PCBUs) or their officers (as defined by relevant legislation).

NOTE: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

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Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Establish and maintain a WHS management system	1.1 Locate, adapt, adopt and communicate WHS policies that clearly define the organisation's commitment to complying with ***WHS legislation***
	1.2 Identify ***duty holders*** and define WHS responsibilities for all workplace personnel according to WHS legislation, policies, procedures and programs
	1.3 Identify and approve financial and human resources required by the WHS management system (WHSMS)
2. Establish and maintain effective and compliant participation arrangements for managing WHS	2.1 Work with workers and their representatives to set up and maintain participation arrangements according to relevant WHS legislation
	2.2 Appropriately resolve issues raised through participation and consultation arrangements according to relevant WHS legislation
	2.3 Promptly provide information about the outcomes of participation and consultation to workers and ensure it is easy for them to access and understand
3. Establish and maintain procedures for effectively identifying	3.1 Develop procedures for ongoing hazard identification, and assessment and ***control of associated risks***
	3.2 Include hazard identification at the planning, design and

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hazards, and assessing and controlling risks	evaluation stages of any change in the workplace to ensure that new hazards are not created by the proposed changes and existing hazards are controlled 3.3 Develop and maintain procedures for selecting and implementing risk controls according to the hierarchy of control and WHS legislative requirements 3.4 Identify inadequacies in existing risk controls according to the hierarchy of control and WHS legislative requirements, and promptly provide resources to enable implementation of new measures 3.5 Identify requirements for expert WHS advice, and request this advice as required
4. Evaluate and maintain a WHS management system	4.1 Develop and provide a WHS induction and training program for all workers as part of the organisation's training program 4.2 Use a system for ***WHS recordkeeping*** to allow identification of patterns of occupational injury and disease in the organisation, and to maintain a record of WHS decisions made, including reasons for the decision 4.3 Measure and evaluate the WHSMS in line with the organisation's quality systems framework 4.4 Develop and implement improvements to the WHSMS to achieve organisational WHS objectives 4.5 Ensure compliance with the WHS legislative framework so that, as a minimum, WHS legal requirements are achieved

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical and problem solving skills to examine relevant workplace information and data to identify hazards, and to assess and control risks
- communication skills to consult with staff and to promote a safe workplace
- information technology skills to store and retrieve relevant workplace information and data
- literacy skills to adapt and communicate WHS policies that reflect WHS legislative requirements
- problem-solving skills to deal with complex and non-routine difficulties.

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Required knowledge

- hazard identification and risk-management processes
- hierarchy of risk control
- in-house and WHS legislative reporting requirements
- relevant WHS Acts, regulations and codes of practice that apply to the business operation.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • detailed knowledge and application of all relevant WHS Acts, regulations and codes of practice • establishing and maintaining arrangements for managing WHS within the organisation's business systems and practices • identifying requirements for expert WHS advice.
Context of and specific resources for assessment	Assessment must ensure access to: • appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • assessment of written reports • demonstration of techniques • direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance by the candidate • review of WHS policies, information provided on the WHSMS, and information about the outcomes

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	of participation and consultation provided to workers • oral or written questioning to assess knowledge of WHS and WHS legislation • evaluation of WHS induction and training • review of WHS recordkeeping system.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

WHS legislation may include:	• applicable commonwealth and state or territory WHS Acts, regulations and codes of practice
	• common law duties to meet general duty of care requirements
	• WHS legislative and regulatory requirements for:
	  • effectively managing hazards
	  • establishing consultation arrangements, including those for health and safety representatives and health and safety committees
	  • providing information and training, including training in safe operating procedures; procedures for workplace hazards; hazard identification, risk assessment and risk control; and emergency and evacuation procedures
	• WHS legislative, regulatory and other requirements for the maintenance and confidentiality of records of occupational injury and disease.

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Duty holders may include:	• as specified in WHS Acts:
	  • officers
	  • PCBUs or their officers
	  • workers
	  • other persons at a workplace.

Control of associated risks may include:	• administrative • as specified in WHS Acts, regulations and codes of practice • counselling/disciplinary processes, such as those associated with alcohol and other drugs • education about alcohol and other drugs work-related issues • engineering • hazard elimination • housekeeping and storage • issue resolution • personal protective equipment • purchasing of supplies and equipment • workplace inspections, including plant and equipment.

WHS recordkeeping may relate to:	• audit and inspection reports
	• consultation, such as:
	  • meetings of health and safety committees
	  • work team meeting agendas, including WHS items and actions
	• first aid/medical post records
	• hazardous chemicals registers
	• induction, instruction and training
	• manufacturer and supplier information, including dangerous goods storage lists
	• plant and equipment maintenance and testing reports
	• workers' compensation and rehabilitation records
	• workplace environmental monitoring records.

Unit Sector(s)

Regulation, Licensing and Risk – Work Health and Safety

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BSBWHS601A Apply legislative frameworks for WHS

Modification History

Release	Comments
Release 1	This Unit first released with *BSB07 Business Training Package version 7.0*.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to assist with providing advice about the legislative duties, rights and obligations of individuals and parties prescribed in work health and safety (WHS) laws and other laws relevant to WHS.

Application of the Unit

This unit applies to individuals who assist with providing advice about the legislative duties, rights and obligations of individuals and parties prescribed in WHS laws and other laws relevant to WHS.

NOTE: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Assist with providing appropriate advice about legal frameworks relevant to WHS	1.1 Ensure assistance provided is appropriate to own job responsibilities and functions 1.2 Understand own limits of skills, knowledge and competence when providing assistance 1.3 Identify situations where it is necessary to seek advice from or refer matters to ***legal advisors and others*** and seek or refer accordingly
2. Assist with determining legal frameworks relevant to WHS	2.1 Monitor current ***WHS legislation and other legislation, related documentation and other sources*** relevant to the organisation and its operations 2.2 Identify changes, amendments and emerging issues in legislation relevant to the organisation 2.3 Assist with determining current and future legal requirements relevant to WHS in the workplace 2.4 Assist with identifying, confirming, reviewing and updating the duties, rights and obligations of individuals and parties as specified in legislation 2.5 Communicate changes, amendments and emerging issues in legislation to individuals and parties 2.6 Seek advice from legal advisors and other sources where necessary
3. Assist with providing advice on compliance with legal frameworks relevant to WHS	3.1 Assist with providing advice to individuals and parties about their compliance with legal duties, rights and obligations under WHS legislation and other legislation relevant to WHS 3.2 Assist with providing advice to individuals and parties about the functions and powers of WHS and other relevant regulators, and how they are exercised

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4. Assist with evaluating and implementing measures to comply with legal frameworks relevant to WHS	4.1 Assist with assessing how the workplace complies with WHS and other relevant legislation 4.2 Assist with identifying the training needs of individuals and parties about duties, rights and obligations 4.3 Assist with developing, delivering and evaluating training to meet identified training needs and any legal requirements for training 4.4 Assist with developing, implementing and evaluating changes to ***workplace procedures, activities, processes, policies and systems*** that will achieve compliance

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to:
  - read and understand WHS-related legislation and information
  - identify, analyse and address training needs
- communication skills to:
  - communicate with and advise people from a range of backgrounds and with a range of abilities
  - work with legal advisors and others
- literacy skills to prepare reports for a range of target groups, including health and safety committees, health and safety representatives, managers, supervisors, and persons conducting businesses or undertakings (PCBUs) or their officers.

Required knowledge

- duties, rights and obligations of individuals and parties as specified in relevant WHS legislation and where this information is located in WHS legislation
- effective consultation and participation processes
- existing work health and safety information system (WHSIS) or other workplace information systems
- functions and powers of WHS regulator, and how they are exercised
- limits of own skills, knowledge and competence when providing assistance
- objectives and principles underpinning WHS legislation and related legislation

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- relationship between the WHS Act, regulations, codes of practice, standards and guidance material, and other legislation relevant to WHS
- relevant sections of commonwealth and state or territory WHS Acts, regulations, codes of practice, standards, guidance material and other instruments
- sources of information about WHS legislation and related legislation
- systematic approaches to managing and complying with WHS legislation
- workplace policies, procedures, activities, processes and systems that will achieve compliance with WHS legislation and related legislation.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • assisting with determining current and future legal frameworks relevant to WHS in the workplace • assisting with providing advice about legal and regulatory frameworks for WHS legislation • providing advice on WHS-related legal compliance issues, including training needs analyses, talks, briefings, training sessions, and paper-based or electronic materials • seeking timely and relevant advice from legal advisors and others • using this advice to ensure legislative compliance.
Context of and specific resources for assessment	Assessment must ensure access to: • relevant Acts, regulations, codes of practice, standards and guidance material • other appropriate workplace documentation • reports from other parties consulted in ensuring compliance with WHS-related legislation.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

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	• direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance by the candidate • demonstration of activities used to assist with compliance with WHS legislation and related legislation • oral or written questioning to assess knowledge of how advice was provided in the workplace, interpreting and applying legislation, and reporting requirements of legislation • review of WHS action plans, documented WHS training needs and associated documents, and recording processes undertaken to ensure WHS-related compliance • simulated project-based activities, scenarios, case studies, role plays or actual activities associated with applying legislative frameworks for WHS.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBWHS602A Facilitate WHS activities • BSBWHS603A Implement WHS risk management • BSBWHS604A Evaluate the WHS performance organisations.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Legal advisors and others may include:	• lawyers • WHS inspectors • WHS regulators • other regulators • WHS specialists.
WHS legislation and other	• common law relevant to WHS

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legislation, related documentation and other sources may include:	• consumer protection
	• current applicable commonwealth and state or territory WHS Acts, regulations and codes of practice
	• current applicable commonwealth and state or territory:
	  • workers' compensation legislation
	  • equal opportunity legislation
	  • food safety legislation
	  • health legislation
	  • privacy legislation
	  • trade practices legislation
	• other documents, such as policies, standards, guidance material and publications, alerts and prosecutions information issued by regulators
	• regulator websites.

Individuals and parties may include:	• contractors and subcontractors
	• customers
	• duty holders as specified in WHS Acts:
	  • PCBUs or their officers
	  • workers
	  • other persons at a workplace
	• suppliers
	• health and safety committees
	• health and safety representatives
	• unions
	• WHS entry permit holders
	• WHS inspectors
	• WHS regulators
	• Workers.

Workplace procedures, activities, processes, policies and systems may include:	• human resources and other management systems
	• risk-management systems and processes
	• WHS management systems and processes
	• WHS-related planning and design activities and processes, such as:
	  • information technology systems
	  • jobs and tasks
	  • maintenance processes and procedures
	  • physical and psychosocial work environments
	  • plant, equipment and tools, including their specification and acquisition

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	• shift work and general work rosters • specification and acquisition of services • work and workplace systems • work processes, policies, structures and procedures • workplace communications systems and processes • workstations and work areas • work processes and activities • workers' compensation, claims management and return-to-work systems and processes • WHSIS and processes.

Unit Sector(s)

Regulation, Licensing and Risk – Work Health and Safety

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BSBWHS602A Facilitate WHS activities

Modification History

Release	Comments
Release 1	This Unit first released with *BSB07 Business Training Package version 7.0*.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to identify, engage, communicate and work effectively with key work health and safety (WHS) personnel and stakeholders; and to work with WHS and other professionals.

It involves identifying and engaging with key WHS personnel and stakeholders, selecting communication strategies to provide them with information and tools for managing WHS, and gaining feedback to evaluate the effectiveness of facilitation processes.

Application of the Unit

This unit applies to individuals who are required to coordinate and facilitate WHS activities. Working with WHS and other professionals is also an important component of facilitation.

NOTE: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	**Performance Criteria**
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Identify and engage with key WHS personnel and stakeholders	1.1 Apply knowledge of workplace and organisation to identify ***key WHS personnel and stakeholders*** 1.2 Liaise and negotiate with key WHS personnel and stakeholders individually and in groups, both formally and informally 1.3 Review effectiveness of working relationships with key WHS personnel and stakeholders, and make changes to achieve any required improvements 1.4 Apply professional practice and ethics in working with others
2. Communicate effectively with key WHS personnel and stakeholders	2.1 Identify WHS information and communication needs and requirements of key WHS personnel and stakeholders 2.2 Identify and implement communication strategies using appropriate tools and methods 2.3 Review effectiveness of communication strategies and make changes to achieve any required improvements
3. Work effectively with key WHS personnel and stakeholders	3.1 Determine WHS roles, functions and responsibilities of self and key WHS personnel and stakeholders 3.2 Collaborate with key WHS personnel and stakeholders to gain agreement on roles, functions and responsibilities 3.3 Fulfil own WHS roles, functions and responsibilities and support others to fulfil their WHS roles, functions and responsibilities 3.4 Review own effectiveness and that of others and work with

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	others to achieve required improvements
4. Work with WHS and other professionals	4.1 Recognise scope of WHS competencies of self and others 4.2 Identify ***particular WHS issues*** beyond own role, responsibilities and competencies requiring WHS and other professional expertise 4.3 Identify appropriate types and sources of expertise required to address particular WHS issues 4.4 Collaborate with WHS and other professionals to develop and agree on scope of work to be undertaken, types of services required and how these professionals will work with self and others 4.5 Facilitate and support the work to be undertaken 4.6 Evaluate if the work undertaken was that required and, if necessary, respond to ensure it is

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to analyse relevant workplace information and data
- facilitation, communication and negotiation skills to:
  - apply listening techniques
  - conduct formal and informal meetings
  - contribute structure and process to interactions so groups are able to function effectively and make high-quality decisions
  - employ consultation and negotiation skills to develop plans and to support, implement and monitor designated actions
  - enable groups to work effectively, to collaborate and achieve synergy
  - expand and confine conversations as required to meet objectives
  - gain commitment
  - prepare reports and communications for a range of target groups, including WHS committee, WHS representatives, managers, supervisors and other stakeholders
  - recognise emotional states in self and others, and work with key WHS personnel and/or WHS and other professionals to respond effectively
  - relate effectively to personnel at all levels of the organisation, WHS and other professionals

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    - support everyone to do their best thinking and practice
    - use language appropriate to the work team and the task
    - work with objections and other difficult situations
- information technology skills to:
    - access and download internal and external information and data on WHS
    - prepare reports, and analyse and evaluate a range of information and data formats, including graphs, maps, matrices and technical reports
    - use a range of communication media
    - use electronic information and data systems to enter workplace information and data, and produce graphical representation
- organisational skills to manage own tasks within a timeframe
- project-management skills to:
    - achieve continuous improvement and change in WHS matters
    - contribute to strategic WHS performance of the organisation
- research skills to obtain internal and external WHS information and data.

Required knowledge

- benefits, limitations and use of a range of communication strategies and tools appropriate to the workplace
- ethics related to professional practice
- formal and informal communication and consultation processes, and key personnel related to communication
- key WHS personnel and stakeholders
- language, literacy and cultural profile of the work team
- legal liability in relation to providing advice
- nature of workplace processes (work flow, planning and control) and hazards relevant to the workplace
- organisational behaviour and culture as they impact on WHS and on change
- organisational culture as it impacts on the work team
- organisational WHS policies, procedures, processes and systems
- particular WHS issues requiring WHS and other professional expertise to be addressed
- principles of effective meetings, including agendas, action planning, chair and secretarial duties, minutes and action items
- roles and responsibilities in relation to communication and consultation for health and safety committees, health and safety representatives, line management, workers and inspectors
- roles, functions, skills and knowledge of WHS and other professionals
- workplace policies, procedures, processes, systems, activities, actions and arrangements that support and enable effective consultation on, and participation in, effective WHS management.

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Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • understanding of own communication, facilitation and negotiation skills and knowledge • acknowledging WHS issues that are beyond own skills, knowledge, role and responsibilities and that require WHS and other professional involvement • developing a comprehensive brief or case to engage a WHS or other professional to address a particular WHS issue.
Context of and specific resources for assessment	Assessment must ensure access to: • a workplace, including key WHS personnel and stakeholders • organisational documentation, information and data.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • direct questioning combined with review of portfolios of evidence and third-party reports of on-the-job performance by the candidate • demonstration of techniques used to facilitate, negotiate and communicate • observation of performance in role plays • observation of presentations • oral or written questioning to assess knowledge of communication, facilitation and negotiation skills and knowledge • evaluation and documentation of performance outcomes.

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Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBWHS601A Apply legislative frameworks for WHS • BSBWHS603A Implement WHS risk management • BSBWHS606A Conduct a WHS audit.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Key WHS personnel and stakeholders may include:	• contractors and subcontractors
	• customers
	• duty holders as specified in WHS Acts:
	  • persons conducting businesses or undertakings (PCBUs) or their officers
	  • workers
	  • other persons at a workplace
	• health and safety committees
	• health and safety representatives
	• suppliers
	• unions
	• WHS and other professionals
	• WHS entry permit holders
	• WHS inspectors
	• WHS regulators
	• Workers.

Particular WHS issues may include:	• WHS issues that arise:
	  • before changes to work practices and systems of work are introduced
	  • during periodic WHS reviews of the business operations
	  • prior to major shut-down, decommissioning or

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	demolition of premises or plant • when a hazardous exposure or incident, injury, illness or adverse result of environmental or health monitoring indicates that risk controls are inadequate • when developing and implementing systems for the long-term management of WHS • when establishing new operations or projects • when establishing workplace WHS consultative and issue-resolution structures • when managing complex issues related to psychological health, such as bullying and stress • when planning to modify the work premises, plant, substances or materials for use at work • when new WHS information and data become available from an authoritative source.

Unit Sector(s)

Regulation, Licensing and Risk – Work Health and Safety

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BSBWHS603A Implement WHS risk management

Modification History

Release	Comments
Release 1	This Unit first released with *BSB07 Business Training Package version 7.0*. Replaces but is not equivalent to BSBOHS603B Analyse and evaluate OHS risk.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to implement work health and safety (WHS) risk management.

The unit addresses the processes and techniques necessary for the implementation of WHS risk management.

Application of the Unit

This unit applies to people who apply advanced practical knowledge to coordinate, facilitate and maintain the WHS program within an organisation.

NOTE: The terms Occupational Health and Safety (OHS) and Work Health and Safety (WHS) are equivalent and generally either can be used in the workplace. In jurisdictions where the National Model WHS Legislation has not been implemented RTOs are advised to contextualise the unit of competency by referring to the existing State/Territory OHS legislative requirements.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Manage effective WHS risk-management consultation and participation processes	1.1 Identify ***individuals and parties*** who need to participate in, contribute to, and be consulted during all stages of WHS risk management 1.2 Apply knowledge of effective WHS consultation and participation processes to review existing consultation and participation processes 1.3 Modify existing consultation and participation processes and/or implement new processes to ensure effective consultation and participation during all stages of WHS risk management 1.4 Use consultation and participation processes to ensure WHS risk-management processes are appropriate to the organisation and the WHS risks
2. Arrange for necessary resources during WHS risk management	2.1 Identify necessary ***resources*** required for all stages of WHS risk management 2.2 Budget for necessary resources 2.3 Procure resources and ensure availability as required
3. Review existing WHS risk-management processes	3.1 Access existing workplace WHS information and data 3.2 Identify existing WHS risk-management processes 3.3 Consult with individuals and parties on WHS risk-management processes 3.4 Review processes with regard to effectiveness of current risk controls, lessons learnt from ***events***, changes in the internal and external contexts, emerging risks and performance against

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	indicators 3.5 Use results of review to develop and implement effective WHS risk management
4. Establish the WHS risk-management framework	4.1 Identify ***sources of information and data*** 4.2 Obtain information and data to determine the purposes, objectives, principles and framework of a systematic approach to WHS risk management
5. Establish the context for WHS risk management	5.1 Apply knowledge of ***WHS legislation***, to identify ***duty holders*** and legislative requirements for WHS risk management 5.2 Identify individuals and parties impacting on WHS risk management 5.3 Identify factors that will impact on WHS risk management 5.4 Establish ***context*** of the WHS risk-management process 5.5 Define ***risk criteria***
6. Assess risk	6.1 Apply knowledge of WHS hazards and risks to undertake ***hazard identification*** 6.2 Apply knowledge of WHS legislation, WHS risk assessment and workplace WHS information and data to undertake ***risk analysis and evaluation***
7. Treat risk	7.1 Apply knowledge of outcomes of risk assessment, WHS hazards and risk controls, and WHS legislation to select ***risk treatment options*** 7.2 Prepare and implement risk treatment
8. Monitor, review and record the WHS risk-management process	8.1 Apply knowledge of the organisation's WHS management system (WHSMS) to monitor and review WHS risk management 8.2 Apply knowledge of the organisation's WHS information system (WHSIS) to record the WHS risk-management process

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to analyse relevant workplace information and data

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- communication skills to:
  - conduct effective formal and informal meetings and communicate effectively with personnel at all levels of the organisation, and with external parties and individuals
  - use language appropriate to the work team and the task
  - write policies, procedures and plans
- consultation and negotiation skills to:
  - develop plans
  - implement and monitor designated actions
- information technology skills to:
  - access and enter internal and external information and data on WHS
  - use a range of communication media
- numeracy skills to:
  - analyse workplace information and data
  - carry out calculations
  - identify trends
- organisational skills to manage own tasks within a timeframe
- project-management skills to:
  - achieve continuous improvement
  - action processes about WHS matters
- research skills to:
  - access relevant WHS information and data
  - identify areas for improvement
  - interpret information and data.

Required knowledge

- any existing workplace WHSIS or other information systems
- any existing workplace WHSMS or other information systems
- different definitions of hazard and risk and how they are used by different individuals and parties
- internal and external sources of WHS information and data, and how to access them
- legislative requirements for WHS
- organisational WHS policies, procedures, processes and systems
- other functional areas that impact on the management of WHS
- principles and practices of a systematic approach to managing WHS
- principles of duty of care, including concepts of causation, foreseeability and preventability
- principles of incident causation and injury processes
- range of risk analysis and assessment techniques and tools, and their application and limitations

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- relevant and applicable Australian standards and publications, including:
  - AS/NZS ISO 31000–2009 Risk management – Principles and guidelines
  - Standards Australia publication HB 327:2010 Communicating and consulting about risk (Companion to AS/NZS ISO 31000:2009)
  - Standards Australia publication HB 158-2010 Delivering assurance based on ISO 31000:2009 – Risk management – Principles and guidelines
  - relevant commonwealth and state or territory WHS Acts, regulations, codes of practice, standards and guidance material, and other relevant publications (including the Safe Work Australia model Code of Practice: How to Manage Work Health and Safety Risks)
- risk as the effect of uncertainty on objectives
- risk management as a duty of persons conducting businesses or undertakings (PCBUs) or their officers under WHS legislation
- standard industry controls for a range of hazards
- techniques, tools and processes for identifying and controlling health and safety hazards and risks:
  - hazard and risk checklists
  - hazard hunts
  - job safety analyses
  - manifests and registers, including for dangerous goods, hazardous chemicals and plant
  - safe work method statements
  - surveys using questionnaires, interviews and other survey techniques
  - workplace inspections and walk throughs
- toxicology of hazardous chemicals and potential health effects in the workplace.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • documented risk-management plans • actions taken as part of the risk-management process • ensuring continuous improvement is part of the ongoing review process • knowledge of relevant sections of relevant Australian standards, WHS Acts, regulations and

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	codes of practice, including the Safe Work Australia model code of practice: How to Manage Work Health and Safety Risks.
Context of and specific resources for assessment	Assessment must ensure access to: • actual workplaces and stakeholder groups • office equipment and resources • relevant legislation, standards and guidelines • workplace documentation • reports from other parties consulted during the approach to WHS risk management.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • demonstration of techniques used to identify, analyse, evaluate, control and monitor risks • direct questioning combined with review of portfolios of evidence and third-party reports of on-the-job performance by the candidate • observation of performance in role plays • observation of presentations • oral or written questioning • review of information and data communicated to stakeholders about the WHS risk-management process • assessment of comparison of outcomes of WHS risk analysis with criteria • review of documentation of process and outcomes of analysis and evaluation of WHS risk of a task or process.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBWHS601A Apply legislative frameworks for WHS • BSBWHS602A Facilitate WHS activities.

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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Individuals and parties may include:	• contractors and suppliers • health and safety committees • health and safety representatives • industry associations • managers and supervisors • PCBUs or their officers • unions • WHS inspectors • WHS regulators • WHS specialists • workers • other specialists.
Resources may include:	• access to internal and external sources of information • equipment • external personnel, including WHS specialists and advisors • information technology resources for communication, planning, management, documentation and risk-management software • internal personnel • training and training resources.
Events may include:	• failures • near misses • successes • trends.
Sources of information and data may include:	• Australian Standard AS/NZS ISO 31000–2009 Risk management – Principles and guidelines • Standards Australia publication HB 327:2010 Communicating and consulting about risk (Companion to AS/NZS ISO 31000:2009) • Standards Australia publication HB 158-2010 Delivering assurance based on ISO 31000:2009 – Risk management – Principles and guidelines

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	• Safe Work Australia model Code of Practice: How to Manage Work Health and Safety Risks • industry associations • unions • WHS specialists.
WHS legislation may include:	• Acts • regulations • codes of practice.

Duty holders may include:	• as specified in WHS Acts:
	  • PCBUs or their officers
	  • workers
	  • other persons at a workplace.

Context may include:	• as specified in Australian Standard AS/NZS ISO 31000–2009 Risk management – Principles and guidelines • as specified in WHS Acts, regulations, codes of practice and standards, including the Safe Work Australia model Code of Practice: How to Manage Work Health and Safety Risks • organisational requirements, such as integration with work processes, and other organisational systems, for example environmental, information technology, human resources, quality and management.
Risk criteria may include:	• as specified in Australian Standard AS/NZS ISO 31000–2009 Risk management – Principles and guidelines • as specified in WHS Acts, regulations, codes of practice and standards, including the Safe Work Australia model Code of Practice: How to Manage Work Health and Safety Risks.
Hazard identification may include:	• analysing existing WHS information – ‘desktop identification’ • as specified in Australian Standard AS/NZS ISO 31000–2009 Risk management – Principles and guidelines • incident investigations • using hazard registers • workplace inspections.
Risk analysis and evaluation may include:	• as specified in Australian Standard AS/NZS ISO 31000–2009 Risk management – Principles and guidelines • assessing who may be harmed and how many may

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	be harmed by a hazard • examining 'acceptability' of a risk • examining severity and likelihood of harm occurring • gathering information on hazards to see what harms they may cause • meeting requirements of (as specified in) WHS Acts, regulations, codes of practice and standards, including the Safe Work Australia model Code of Practice: How to Manage Work Health and Safety Risks • using risk level matrices to rate and prioritise risks
Risk treatment options may include:	• as specified in Australian Standard AS/NZS ISO 31000–2009 Risk management – Principles and guidelines • options based on the as low as reasonably practicable (ALARP) principle • options based on the hierarchy of control • options that meet the requirements of WHS Acts, regulations, codes of practice and standards, including the Safe Work Australia model Code of Practice: How to Manage Work Health and Safety Risks.

Unit Sector(s)

Regulation, Licensing and Risk – Work Health and Safety

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BSBWOR301B Organise personal work priorities and development

Modification History

Release	Comments
Release 1	This version first released with *BSB07 Business Training Package version 6.0* Revised unit. Performance criteria and required skills updated to focus on learning and development practices, KPIs and compliance with policy and procedures. Replaces BSBWOR301A Organise personal work priorities and development

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to organise own work schedules, to monitor and obtain feedback on work performance, and to maintain required levels of competence. Operators may exercise discretion and judgement using appropriate theoretical knowledge of work scheduling and performance improvement to provide technical advice and support to a team.

Application of the Unit

This unit applies to individuals who are skilled operators and apply a broad range of competencies in various work contexts.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

1. Organise and complete own work schedule	1.1 Ensure that ***work goals, objectives*** or ***KPIs*** are understood, negotiated and agreed in accordance with ***organisational requirements***
	1.2 Assess and prioritise workload to ensure tasks are completed within identified timeframes
	1.3 Identify ***factors affecting the achievement of work objectives*** and incorporate contingencies into work plans
	1.4 Use ***business technology*** efficiently and effectively to manage and monitor scheduling and completion of tasks
2. Monitor own work performance	2.1 Accurately monitor and adjust personal work performance through self-assessment to ensure achievement of tasks and compliance with legislation and work processes or KPIs
	2.2 Ensure that ***feedback on performance*** is actively sought and evaluated from colleagues and clients in the context of individual and group requirements
	2.3 Routinely identify and report on variations in the quality of and ***products and services*** according to organisational requirements
	2.4 Identify ***signs of stress*** and effects on ***personal wellbeing***
	2.5 Identify ***sources of stress*** and access appropriate ***supports and resolution strategies***
3. Coordinate personal skill development and learning	3.1 Identify personal learning and professional development needs and skill gaps using self-assessment and advice from colleagues and clients in relation to role and organisational requirements
	3.2 Identify, prioritise and plan opportunities for undertaking personal skill development activities in liaison with work groups and relevant personnel
	3.3 Access, complete and record ***professional development***

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	opportunities to facilitate continuous learning and career development 3.4 Incorporate formal and informal feedback into review of further learning needs

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to give and receive constructive feedback relating to development needs
- literacy skills to read and understand the organisation's procedures
- planning skills to organise work priorities according to work goals and objectives
- problem-solving skills to solve routine problems
- self-management skills to:
  - comply with policies and procedures
  - consistently evaluate and monitor own performance
  - seek learning opportunities.

Required knowledge

- key provisions of relevant legislation from all levels of government that may affect aspects of business operations, such as:
  - anti-discrimination legislation
  - ethical principles
  - codes of practice
  - privacy laws
  - occupational health and safety (OHS)
- organisational policies, plans and procedures
- methods to elicit, analyse and interpret feedback
- principles and techniques of goal setting, measuring performance, time management and personal assessment
- competency standards and how to interpret them in relation to self
- methods to identify and prioritise personal learning needs.

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Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • preparing work plans • scheduling and prioritising work objectives and tasks • knowledge of the principles and techniques of goal setting, measuring performance, time management and personal assessment.
Context of and specific resources for assessment	Assessment must ensure: • access to an actual workplace or simulated environment • access to office equipment and resources • examples of work schedules and performance improvement plans.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • review of self-assessment documentation outlining learning and development needs • analysis of responses to case studies and scenarios • demonstration of techniques • oral or written questioning to assess knowledge of methods to identify and prioritise personal learning needs • evaluation of planning for personal skill development activities and professional development opportunities.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Work goals and objectives may include:	• budgetary targets • production targets • reporting deadlines • sales targets • team and individual learning goals • team participation.
KPIs may include:	• key performance indicators on customer satisfaction • key performance indicators on customer effort • monitoring time taken to answer calls • operating within reporting protocols • score tools such as net promoter • understanding metrics.
Organisational requirements may include:	• access and equity principles and practice • business and performance plans • defined resource parameters • ethical standards • goals, objectives, plans, systems and processes • legal and organisational policies, guidelines and requirements • OHS policies, procedures and programs • quality and continuous improvement processes and standards • quality assurance and/or procedures manuals.
Factors affecting the achievement of work objectives may include:	• budget constraints • competing work demands • environmental factors such as time, weather • resource and materials availability • technology/equipment breakdowns • unforeseen incidents • workplace hazards, risks and controls.
Business technology may include:	• computer applications • computers • email

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	• facsimile machines • internet/extranet/intranet • modems • personal schedulers • photocopiers • printers • scanners.
Feedback on performance may include:	• formal/informal performance appraisals • obtaining feedback from clients • obtaining feedback from supervisors and colleagues • personal, reflective behaviour strategies • routine organisational methods for monitoring service delivery.
Products and services may include:	• either products or services • goods • ideas • infrastructure • private or public sets of benefits.
Signs of stress may include:	• absence from work • alcohol or other substance abuse • conflict • poor work performance.
Personal wellbeing may include:	• cultural • emotional • social • spiritual.
Sources of stress may include:	• complex tasks • cultural issues • work and family conflict • workloads.
Supports and resolution strategies may include:	• awareness raising • counselling • employee assistance programs (EAP) • family support • group activities • job design • mediation • sharing load • time off • training.
Professional development	• career planning/development

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opportunities may include:	• coaching, mentoring and/or supervision • formal/informal learning programs • internal/external training provision • performance appraisals • personal study • quality assurance assessments and recommendations • recognition of current competence/skills recognition • work experience/exchange/opportunities • workplace skills assessment.

Unit Sector(s)

Industry Capability – Workplace Effectiveness

Custom Content Section

Not applicable.

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BSBWOR401A Establish effective workplace relationships

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to collect, analyse and communicate information and to use that information to develop and maintain effective working relationships and networks, with particular regard to communication and representation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers play an important role in developing and maintaining positive relationships in internal and external environments so that customers, suppliers and the organisation achieve planned outputs and outcomes. They play a prominent part in motivating, mentoring, coaching and developing team cohesion through providing leadership for the team and forming the bridge between the management of the organisation and team members. At this level, work will normally be carried out within routine and non routine methods and procedures, which require planning and evaluation, and leadership and guidance of others.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Collect, analyse and communicate information and ideas	1.1. Collect relevant ***information*** from appropriate sources and analyse and share with the work team to improve work performance 1.2. Communicate ideas and information in a manner which is appropriate and sensitive to the cultural and social diversity of the audience and any specific needs 1.3. Implement ***consultation processes*** to encourage employees to contribute to issues related to their work, and promptly relay feedback to the work team in regard to outcomes 1.4. Seek and value contributions from internal and external sources in developing and refining new ideas and approaches

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ELEMENT	PERFORMANCE CRITERIA
	1.5. Implement ***processes*** to ensure that issues raised are resolved promptly or referred to ***relevant personnel*** as required
2. Develop trust and confidence	2.1. Treat all internal and external contacts with integrity, respect and empathy 2.2. Use the ***organisation's social***, ***ethical and business standards*** to develop and maintain effective relationships 2.3. Gain and maintain the trust and confidence of ***colleagues***, ***customers and suppliers*** through competent performance 2.4. Adjust interpersonal styles and methods to meet organisation's social and cultural environment 2.5. Encourage other members of the work team to follow examples set, according to ***organisation's policies and procedures***
3. Develop and maintain networks and relationships	3.1. Use ***networks*** to identify and build relationships 3.2. Use networks and other work relationships to provide identifiable benefits for the team and organisation
4. Manage difficulties into positive outcomes	4.1. Identify and analyse difficulties, and take action to rectify the situation within the requirements of the organisation and relevant legislation 4.2. Guide and support colleagues to resolve work difficulties 4.3. Regularly review and improve ***workplace outcomes*** in consultation with relevant personnel 4.4. Manage ***poor work performance*** within the organisation's processes 4.5. Manage conflict constructively within the organisation's processes

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• coaching and mentoring skills to provide support to colleagues

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REQUIRED SKILLS AND KNOWLEDGE

• literacy skills to research, analyse, interpret and report information
• relationship management and communication skills to:
  • deal with people openly and fairly
  • forge effective relationships with internal and/or external people, and to develop and maintain these networks
  • gain the trust and confidence of colleagues
  • respond to unexpected demands from a range of people
  • use supportive and consultative processes effectively.

Required knowledge

• relevant legislation from all levels of government that affects business operation, especially in regard to occupational health and safety (OHS), and environmental issues, equal opportunity, industrial relations and anti-discrimination
• theory associated with managing work relationships to achieve planned outcomes:
  • developing trust and confidence
  • maintaining consistent behaviour in work relationships
  • understanding the cultural and social environment
  • identifying and assessing interpersonal styles
  • establishing, building and maintaining networks
  • identifying and resolving problems
  • resolving conflict
  • managing poor work performance
  • monitoring, analysing and introducing ways to improve work relationships.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • range of methods and techniques for communicating information and ideas to a range of stakeholders • range of methods and techniques for developing positive work relationships that build trust and

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EVIDENCE GUIDE	
	confidence in the team • accessing and analysing information to achieve planned outcomes • techniques for resolving problems and conflicts and dealing with poor performance • knowledge of the theory associated with managing work relationships to achieve planned outcomes.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • demonstration of techniques in managing poor performance and communicating effectively • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of performance in role plays • observation of presentations • oral or written questioning to assess knowledge of relevant legislation • review of consultation processesimplemented to encourage employees to contribute to issues related to their work • review of documentation outlining reviewing ofworkplace outcomes.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Certificate IV in Frontline Management.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised

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RANGE STATEMENT	
wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Information may include:	• data appropriate to work roles and organisational policies that is shared and retrieved in writing or verbally, electronically or manually such as: • archived, filed and historical background data • individual and team performance data • marketing and customer related data • planning and organisational documents including the outcomes of continuous improvement and quality assurance • policies and procedures
Consultation processes may include:	• feedback to the work team and relevant personnel in relation to outcomes of the consultation process • opportunities for all employees to contribute to ideas and information about organisational issues
Processes to ensure that issues raised are resolved promptly or referred may include:	• conducting informal meetings • coordinating surveys or questionnaires • distributing newsletters or reports • exchanging informal dialogue with relevant personnel • participating in planned organisational activities
Relevant personnel may include:	• managers • OHS committee and other people with specialist responsibilities • other employees • supervisors • union representatives/groups
Organisation's social, ***ethical and business standards*** may refer to:	• implied standards such as honesty and respect relative to the organisational culture and generally accepted within the wider community • rewards and recognition for high performing staff

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RANGE STATEMENT	

	• standards expressed in legislation and regulations such as anti-discrimination legislation
	• written standards such as those expressed in:
	  • code of workplace conduct/behaviour
	  • dress code
	  • policies
	  • statement of workplace values
	  • vision and mission statements

Colleagues, customers and suppliers may include:	• both internal and external contacts • employees at the same level and more senior managers • people from a wide variety of social, cultural and ethnic backgrounds • team members
Organisation's policies and procedures may refer to:	• Materials Safety Data Sheets • organisational tasks and activities undertaken to meet performance outcomes • sets of accepted actions approved by the organisation • Standard Operating Procedures
Networks may be:	• established structures or unstructured arrangements and may include business or professional associations • informal or formal and with individuals or groups • internal and/or external
Workplace outcomes may include:	• OHS processes and procedures • performance of the work team
Poor work performance may refer to:	• individual team members • organisation as a whole • self • whole work team

Unit Sector(s)

Unit sector	

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Competency field

Competency field	Industry Capability - Workplace Effectiveness

Co-requisite units

Co-requisite units		

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BSBWOR402A Promote team effectiveness

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to promote teamwork. It involves developing team plans to meet expected outcomes, leading the work team, and proactively working with the management of the organisation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	Frontline managers have an important leadership role in the development of efficient and effective work teams. They play a prominent part in team planning, supervising the performance of the team and developing team cohesion. They provide leadership for the team and bridge the gap between the management of the organisation and the team members. As such they must 'manage up' as well as manage their team/s.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Plan to achieve team outcomes	1.1. Identify, establish and document ***team purpose***, ***roles***, ***responsibilities***, ***goals***, ***plans and objectives*** in ***consultation*** with team members 1.2. Support team members in meeting expected outcomes
2. Develop team cohesion	2.1. Provide opportunities for input of team members into planning, decision making and operational aspects of work team 2.2. Encourage and support team members to take ***responsibility for own work*** and to assist each other in undertaking required roles and responsibilities 2.3. Provide ***feedback*** to team members to encourage, value and reward individual and team efforts and contributions 2.4. Recognise and address issues, concerns and problems identified by team members or refer to ***relevant persons*** as required

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ELEMENT	PERFORMANCE CRITERIA
3. Participate in and facilitate work team	3.1. Actively encourage team members to participate in and take responsibility for team activities and communication processes 3.2. Give the team support to identify and resolve problems which impede its performance 3.3. Ensure own contribution to work team serves as a role model for others and enhances the organisation's image within the work team, the organisation and with clients/customers
4. Liaise with management	4.1. Maintain open ***communication*** with ***line manager***/***management*** at all times 4.2. Communicate information from line manager/management to the team 4.3. Communicate unresolved issues, concerns and problems raised by the team/team members to line manager/management and ensure follow-up action is taken 4.4. Communicate unresolved issues, concerns and problems related to the team/team members raised by line managers/management to the team and ensure follow-up to action is taken

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
  - boost team morale
  - deal with team conflict
  - deliver messages from management
  - facilitate discussion
  - mentor and coach
- leadership skills
- planning and organising skills.

Required knowledge

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REQUIRED SKILLS AND KNOWLEDGE

• organisational goals, objectives and plans
• organisational policy and procedures framework
• organisational structure, including organisational chart
• principles and techniques associated with:
  • delegation and work allocation
  • goal setting
  • group dynamics and processes
  • individual behaviour and difference
  • leadership
  • motivation
  • negotiation
  • planning.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • teamwork plan with details of how it was generated and how it will be monitored so that team goals can be met • techniques in communicating information, dealing with team conflict and resolving issues • knowledge of organisational goals, objectives and plans.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios

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EVIDENCE GUIDE	
	• direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of demonstrated techniques in working with team dynamics • observation of performance in role plays • oral or written questioning to assess knowledge of principles and techniques associated with group dynamics and processes • evaluation of opportunities provided for input of team members into planning, decision making and operational aspects of work team • review of feedback provided to team members • review of teamwork plan.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Certificate IV in Frontline Management.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Team purpose, ***roles***, ***responsibilities***, ***goals***, ***plans and objectives*** may include:	• action plans, business plans and operational plans linked to strategic plans • expected outcomes and outputs • goals for individuals and the work team • individual and team performance plans and key performance indicators • occupational health and safety (OHS) responsibilities
Consultation may include:	• attending meetings, interviews, brainstorming sessions

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RANGE STATEMENT	
	• using email/intranet communications, newsletters or other processes and devices which ensure that all employees have the opportunity to contribute to team and individual effectiveness • using mechanisms to provide feedback to the work team in relation to consultation outcomes
Responsibility for own work may involve:	• individual and joint actions • individuals and teams
Feedback may refer to:	• formal/informal gatherings between team members where there is communication on work related matters • informal communication of ideas and thoughts on specific tasks, outcomes, decisions, issues or behaviours
Relevant persons may include:	• colleagues • direct superior or other management representatives • OHS committees and other people with specialist responsibilities
Communication may include:	• face-to-face • formal/informal interaction • verbal, written or electronic communication
Line manager*/*management may refer to:	• direct superior or other management representatives

Unit Sector(s)

Unit sector	

Competency field

Competency field	Management and Leadership - Management

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Co-requisite units

Co-requisite units		

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BSBWOR404B Develop work priorities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to plan one's own work schedules, to monitor and to obtain feedback on work performance and development. It also addresses the requirement to take responsibility for one's own career planning and professional development. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to individuals who are required to design their own work schedules and work plans, and to establish priorities for their work. They will typically hold some responsibilities for the work of others and have some autonomy in relation to their own role.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and complete own work schedule	1.1. Prepare ***Workgroup*** plans which reflect consideration of resources, client needs and workgroup targets 1.2. Analyse and incorporate ***Work objectives*** and priorities into personal schedules and responsibilities 1.3. Identify ***Factors affecting the achievement of work objectives*** and establish contingencies and incorporate them into work plans 1.4. Efficiently and effectively use ***Business technology*** to manage and monitor planning completion and scheduling of tasks
2. Monitor own work performance	2.1. Identify and analysed personal performance through self-assessment and feedback from others on the achievement of work objectives 2.2. Seek and evaluate ***Feedback on performance*** from colleagues and clients in the context of individual and group requirements 2.3. Routinely identify and report on variations in the quality of service and performance in accordance with organisational requirements
3. Coordinate	3.1. Assess personal knowledge and skills against

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ELEMENT	PERFORMANCE CRITERIA
professional development	organisational benchmarks to determine development needs and priorities 3.2. Research and identify sources and plan for opportunities for improvement in consultation with colleagues 3.3. Use ***Feedback*** to identify and develop ways to improve competence within available opportunities 3.4. Identify, access and complete ***professional development activities*** to assist career development 3.5. Store and maintain records and documents relating to achievements and assessments in accordance with organisational requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- learning skills to recognise and develop new and necessary skills and knowledge
- literacy skills to understand the organisation's policies, procedures and communications, to write personal work plans and professional development plans, and to request and receive feedback about performance
- organising skills to prioritise, manage time and meet deadlines
- problem solving skills to develop contingency plans

Required knowledge

- knowledge of relevant business technology applications to schedule tasks and plan work
- knowledge of techniques to prepare personal plans and establish priorities
- methods to identify and prioritise personal learning needs
- understanding of a range of professional development options
- understanding of methods to elicit, analyse and interpret feedback
- understanding of methods to evaluate own performance

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Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • preparing and communicating own work plan • scheduling work objectives and tasks to support the achievement of goals • seeking and acting on feedback from clients and colleagues • reviewing own work performance against achievements through self-assessment • accessing learning opportunities to extend own personal work competencies • using business technology to monitor self development.
Context of and specific resources for assessment	Assessment must ensure: • the learner and trainer should have access to appropriate documentation and resources normally used in the workplace
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of performance in role plays • observation of presentations • review of work and professional development plans.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • Other units from the Certificate IV in Frontline Management.

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Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Workgroup plans may include:	• budgetary plans • production plans • reporting plans • sales plans • team and individual learning goals • team participation • work schedules
Work objectives may include:	• budgetary targets • production targets • reporting deadlines • sales targets • team and individual learning goals • team participation
Factors affecting the achievement of work objectives may include:	• budget constraints • competing work demands • environmental factors such as time, weather, etc • personnel • resource and materials availability • technology/equipment breakdowns • unforeseen incidents
Business technology may include:	• computer applications • computers • email and internet/intranet/extranet • facsimile machines • modems • personal schedules • photocopiers • printers • scanners
Feedback on performance may include:	• formal/informal performance appraisals • obtaining comments from clients • obtaining comments from supervisors and

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RANGE STATEMENT	
	colleagues • personal, reflective behaviour strategies • routine organisational methods for monitoring service delivery
Professional development activities may include:	• career planning/development • coaching, mentoring and/or supervision • formal/informal learning programs • internal/external training provision • performance appraisals • personal study • Recognition of Prior Learning • work experience/exchange/opportunities • workplace skills assessment

Unit Sector(s)

Unit sector	

ELEMENT	PERFORMANCE CRITERIA

Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBWOR501B Manage personal work priorities and professional development

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to manage own performance and professional development. Particular emphasis is on setting and meeting priorities, analysing information and using a range of strategies to develop further competence. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to managers and focuses on the need for managers to be organised, focussed and skilled, in order to effectively manage the work of others. As such it is an important unit for most managers, particularly as managers serve as role models and have a significant influence on the work culture and patterns of behaviour.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Establish personal work goals	1.1. Serve as a positive role model in the workplace through personal work planning and organisation 1.2. Ensure personal work goals, plans and activities reflect the organisation's plans, and ***own responsibilities and accountabilities*** 1.3. Measure and maintain personal performance in varying work conditions, work contexts and contingencies
2. Set and meet own work priorities	2.1. Take initiative to prioritise and facilitate competing demands to achieve personal, team and organisational goals and objectives 2.2. Use ***technology*** efficiently and effectively to manage work priorities and commitments 2.3. Maintain appropriate work-life balance, and ensure stress is effectively managed and health is attended to
3. Develop and maintain professional competence	3.1. Assess personal knowledge and skills against ***competency standards*** to determine development needs, priorities and plans 3.2. Seek feedback from employees, ***clients and colleagues*** and use this feedback to identify and

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ELEMENT	PERFORMANCE CRITERIA
	develop ways to improve competence 3.3. Identify, evaluate, select and use ***development opportunities*** suitable to personal learning style/s to develop competence 3.4. Undertake participation in networks to enhance personal knowledge, skills and work relationships 3.5. Identify and develop new skills to achieve and maintain a competitive edge

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• communication skills to receive, analyse and report on feedback • literacy skills to interpret written and verbal information about workplace requirements • organisational skills to set and achieve priorities.
Required knowledge

• principles and techniques involved in the management and organisation of:
  • performance measurement
  • personal behaviour, self-awareness and personality traits identification
  • personal development plan
  • personal goal setting
  • time management
• management development opportunities and options for self
• organisation's policies, plans and procedures
• types of learning style/s and how they relate to the individual
• types of work methods and practices that can improve personal performance.

Evidence Guide

EVIDENCE GUIDE
The Evidence Guide provides advice on assessment and must be read in conjunction with the

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EVIDENCE GUIDE	
performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • systems and processes (electronic or paper-based) used to organise and prioritise tasks, which show how work is managed • personal development plan, with career objectives and an action plan
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of presentations • oral or written questioning to asses knowledge of work methods and practices that can improve personal performance • review of personal work goals, plans and activities • evaluation of work-life balance • review of documentation assessing personal knowledge and skills against competency standards.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Diploma of Management.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different

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RANGE STATEMENT	
work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Own responsibilities and accountabilities may include:	• expectations of workplace performance as expressed in a performance plan • outputs as expressed in position descriptions or duty statements • statement of conduct outlining an individual's responsibilities/actions/performance
Technology may include:	• computerised systems and software, databases, project management and word processing • electronic diary • personal digital assistant (PDA)
Competency standards may include:	• enterprise-specific units of competency consistent with work requirements • nationally endorsed units of competency consistent with work requirements
Clients and colleagues may be:	• colleagues at the same level and more senior managers • internal or external customers • people from a wide range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities • team members
Development opportunities may include:	• action learning • coaching • exchange/rotation • induction • mentoring • shadowing • structured training programs

Unit Sector(s)

Unit sector	

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Competency field

Competency field	Management and Leadership - Management

Co-requisite units

Co-requisite units		

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BSBWOR502B Ensure team effectiveness

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to facilitate all aspects of teamwork within the organisation. It involves taking a leadership role in the development of team plans, leading and facilitating teamwork and actively engaging with the management of the organisation. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.

Application of the Unit

Application of the unit	This unit applies to managers and addresses the need for managers to facilitate work teams and to build a positive culture within work teams. The unit takes a systematic and planned approach to developing teams. It includes the soft skills as well as more structured approaches to the management of teams. At this level, work will normally be carried out within complex and diverse methods and procedures which require the exercise of considerable discretion and judgement, using a range of problem solving and decision making strategies.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Establish team performance plan	1.1. ***Consult*** team members to establish a common understanding of team purpose, roles, responsibilities and ***accountabilities*** in accordance with organisational goals, plans and objectives 1.2. Develop ***performance plans*** to establish expected ***outcomes***, ***outputs***, ***key performance indicators*** and goals for work team 1.3. ***Support*** team members in meeting expected performance outcomes
2. Develop and facilitate team cohesion	2.1. Develop ***strategies*** to ensure team members have input into planning, decision making and operational aspects of work team 2.2. Develop ***policies and procedures*** to ensure team members take responsibility for own work and assist

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ELEMENT	PERFORMANCE CRITERIA
	others to undertake required roles and responsibilities 2.3. Provide feedback to team members to encourage, value and reward individual and team efforts and contributions 2.4. Develop ***processes*** to ensure that issues, concerns and problems identified by team members are recognised and addressed
3. Facilitate teamwork	3.1. Encourage team members and individuals to participate in and to take responsibility for team activities, including communication processes 3.2. Support the team in identifying and resolving work performance problems 3.3. Ensure own contribution to work team serves as a role model for others and enhances the organisation's image for all ***stakeholders***
4. Liaise with stakeholders	4.1. Establish and maintain open communication processes with all stakeholders 4.2. Communicate information from ***line manager***/***management*** to the team 4.3. Communicate unresolved issues, concerns and problems raised by team members and follow-up with line manager/management and other relevant stakeholders 4.4. Evaluate and take necessary corrective action regarding unresolved issues, concerns and problems raised by internal or external stakeholders

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• communication skills to explain team goals, to address team conflict and to build an environment of trust • planning and organisational skills to keep team on track and focussed on work outcomes.
Required knowledge

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REQUIRED SKILLS AND KNOWLEDGE
• group behaviour • strategies for mentoring and coaching to informally guide and instruct team members • issue resolution • strategies for gaining consensus.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the following is essential: • range of techniques that can be used to build work teams, strengthen communications in the team and resolve issues • methods for engaging with stakeholders and obtaining advice from outside the work team, to ensure team is focussed and on track • knowledge of group behaviour.
Context of and specific resources for assessment	Assessment must ensure: • access to appropriate documentation and resources normally used in the workplace.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • analysis of responses to case studies and scenarios • assessment of written reports • demonstration of team building techniques • direct questioning combined with review of portfolios of evidence and third party workplace reports of on-the-job performance by the candidate • observation of performance in role plays • review of performance plans developed for work team • review of policies and procedures developed to

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EVIDENCE GUIDE	
	ensure team members take responsibility for own work.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • other units from the Diploma of Management.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Consultation may refer to:	• conducting meetings, interviews, brainstorming sessions, email/intranet communications, newsletters or other processes and devices which ensure that all employees have the opportunity to contribute to team and individual performance plans • mechanisms used to provide feedback to the work team in relation to outcomes of consultation
Accountabilities may refer to:	• responsibilities as defined in position descriptions, codes of conduct/behaviour, duty statements or similar • statement of conduct outlining responsibilities/actions/performance
Performance plans may refer to:	• individual performance plans linked to team goals • team plans based on work assignments and responsibilities
Outcomes, ***outputs***, ***key performance indicators*** may refer to agreed:	• changes in work roles and responsibilities • improved individual and team, performance and participation • improvements to systems, operations • measures for monitoring and evaluating the

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RANGE STATEMENT	
	efficiency or effectiveness of systems or services • quality standards and expectations • targets for productivity improvements such as reduced downtime, higher production levels, decreases in absenteeism • targets for training and development
Support may include:	• Coaching • Mentoring • Training and development opportunities • Clarification of roles and expectations • Long term or short term plans • Meetings
Strategies may refer to:	• clarification of roles and expectations • electronic communication devices and processes, such as intranet and email communication systems, to facilitate input • long-term or short-term plans factoring in opportunities for team input • mentoring and 'buddy' systems to support team members in providing input • newsletters and briefings • training and development activities
Policies and procedures may refer to:	• organisational guidelines and systems that govern operational functions • procedures that detail the activities that must be carried out for the completion of actions and tasks • Standard Operating Procedures
Processes may refer to:	• brainstorming options with the team for addressing concerns • creating a matrix of issues and concerns and distributing for comment • discussions with individuals regarding their concerns • distributing drafts for comment with a range of options for resolution of concerns • training and development sessions
Stakeholders may include:	• Board members • business or government contacts • funding bodies

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RANGE STATEMENT	
	• union/employee groups and representatives • work team
Line manager*/*management may refer to:	• chief executive officer • direct superior • other management representatives

Unit Sector(s)

Unit sector	

Competency field

Competency field	Industry Capability - Workplace Effectiveness

Co-requisite units

Co-requisite units		

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CPCCLDG3001A Licence to perform dogging

Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit specifies the outcomes required to perform slinging techniques, including the selection and inspection of lifting gear and/or the directing of the crane operator in the movement of the load when the load is out of view of the crane/ operator for licensing purposes.

Application of the Unit

Application of the unit

This unit covers the scope of work to demonstrate competency in the application of slinging techniques, selection and inspection of lifting gear and/or the directing of the crane/ operator in the movement of the load.

This unit is based upon the National Standard for Licensing Persons Performing High Risk Work.

This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units Nil

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Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan job.	1.1. ***Site information*** is obtained and related to the task. 1.2. ***Hazard*** s and potential hazards associated with the slinging and directing of loads are identified. 1.3. ***Hazard control measures*** consistent with ***appropriate standards*** are identified to ensure the safety of personnel and equipment. 1.4. The weight, dimensions and centre of gravity of the load are identified and assessed. 1.5. Suitable lifting/slinging points on the load are identified. 1.6. Appropriate ***lifting equipment*** needs are assessed. 1.7. Appropriate ***communication methods*** are assessed with ***crane***/ operators and other ***appropriate personnel***. 1.8. Manufacturer's specifications/information is obtained for special loads where necessary.
2. Select and inspect equipment.	2.1. Lifting equipment appropriate to the task is selected. 2.2. Lifting equipment is inspected for serviceability. 2.3. Damaged or excessively worn lifting equipment is identified, labelled and rejected.

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ELEMENT	PERFORMANCE CRITERIA
	2.4. Appropriate communication methods for the crane/operator and appropriate personnel are selected.
	2.5. Appropriate ***communication equipment*** is selected and its serviceability is checked.
	2.6. Appropriate ***personal protective equipment*** (PPE) is selected and checked.
3. Prepare site and equipment.	3.1. Hazard prevention/control measures are applied consistent with appropriate standards to ensure the safety of personnel and equipment.
	3.2. Appropriate slinging method is selected.
	3.3. Lifting equipment is prepared and assembled where appropriate.
	3.4. Load destination is prepared.
4. Perform task.	4.1. Lifting equipment is attached and secured to the lifting hook using appropriate techniques.
	4.2. Lifting hook is positioned over the load centre of gravity.
	4.3. Lifting equipment is attached and secured to the load in an appropriate manner.
	4.4. Tag line is attached and secured where appropriate.
	4.5. Test lift is conducted to ensure security of load.
	4.6. Load is moved maintaining stability and control at all times.
	4.7. Appropriate communication methods and ***communication signals*** are applied to safely coordinate the load movement both within sight and out-of-sight of crane operator.
	4.8. The load is landed to ensure that it is stable and secure from movement.
	4.9. Lifting equipment is removed or disconnected from load and prepared for next task or storage.
5. Shut down job and clean up.	5.1. Unserviceable lifting equipment inspected and rejected.
	5.2. ***Defective equipment*** is isolated and tagged.
	5.3. Lifting equipment is stored in accordance with procedures and appropriate standards.
	5.4. Hazard prevention/control measures are removed where appropriate.
	5.5. Excess materials from the work area are removed (where applicable).

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ELEMENT	PERFORMANCE CRITERIA
	5.6. Defects are reported and recorded according to procedures and appropriate action is taken.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills for this unit are:

- communication techniques in the workplace including whistles, hand signals and use of fixed channel two-way radios
- communication skills at a level sufficient to communicate with other site personnel
- calculate rated capacity of lifting equipment
- apply different methods for making temporary connections to loads using fibre and synthetic ropes
- ability to interpret rated capacity and working load limit tags
- hazard identification and control
- slinging techniques
- selection and inspection of lifting equipment
- directing crane operators in the moving of loads in a safe manner, using a slewing crane
- inspection and care of a wide range of lifting equipment to appropriate Australian Standards and/or manufacturer's specifications.

Required knowledge

Required knowledge for this unit is:

- appropriate mathematical procedures for estimation and measurement of loads
- basic knowledge of types of cranes and their functions
- Commonwealth, state or territory OHS legislation, standards and codes of practice relevant to the full range of techniques for undertaking dogging activities
- load stability and safety factors in line with manufacturer's specifications
- types of lifting equipment and slinging techniques for use, and their limitations and performance in a wide range of conditions (including but not limited to slings, beams, accessories, clamps, work-boxes, bins and pallets)
- understanding of the hierarchy of control.

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Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	Successful assessment of this unit meets the competency requirement of the National Standard for licensing Persons Performing High Risk Work. State/Territory OHS regulators have mandated the use of Assessment Instruments and Instructions for Assessment of this unit which have been endorsed by the national body responsible for OHS matters.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • comply with Commonwealth, state or territory OHS legislation, standards relevant to safe dogging and crane operations. • communicate and work safely with others in the work area. • apply Hazard prevention and control measures consistent with appropriate standards. • apply to move loads in conjunction with cranes including, the reading of tags, slinging, loading, directing and landing loads with a slewing mobile crane with a telescopic boom and a winch, in and out of sight of the crane/ operator, moving four loads of varying shapes, sizes and weights. • use fibre and/or synthetic rope as tag lines, and connecting to loads using clove hitch, rolling hitch, bowline and single sheetbend. • conduct pre and post operational checks of the lifting equipment.
Context of and specific resources for assessment	• Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the national OHS endorsed Assessment Instrument • Assessment of performance must be

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	undertaken either in the workplace or in a realistically simulated workplace setting
	• Assessors must ensure that the assessment in the workplace is organised through a workplace supervisor to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace
	• Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints
	• Assessment is to comply with the requirements of any relevant Standards or operating procedures for dogging activities
	• Applicants must have access to:
	  • personal protective equipment (PPE) for the purpose of the performance assessment.
	  • four different loads as prescribed in the endorsed assessment instrument
	  • lifting and associated equipment
	  • suitable slewing crane
	  • communication equipment (eg. fixed channel, two-way radios) as applicable.

Method of assessment	Assessment must be conducted using the national OHS endorsed Assessment Instrument. This Instrument provides instruction on the application of the assessment. Assessment may be in conjunction with the assessment of other units of competency. The use of **'simulators'** in the assessment of this unit of competency is **not acceptable**. Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
Guidance information for assessment	Further information about endorsed Assessment Instruments may be obtained from state/territory OHS regulators.

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Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Site informationmay include but not be limited to	• local conditions such as access and egress • work method statements.
Hazards may include but not limited to:	• ground stability (eg. ground condition, recently filled trenches, slopes) • overhead hazards (e.g. power lines, service pipes, trees, buildings, etc) • insufficient lighting • traffic (e.g. pedestrians, vehicles, plant) • weather (e.g. wind, lightning, storms) • other specific hazards (e.g. trip hazards, heights, radio interference, etc).
Hazard prevention/control measures	The systematic process of eliminating or reducing the risk to personnel and property through the application of controls. It includes the application of the hierarchy of controls, including: 1. elimination. 2. substitution. 3. isolation. 4. engineered control measures. 5. safe work practices. 6. personal protective equipment.
Appropriate standard s may include:	• codes of practice • legislation • Australian Standards • manufacturer's specifications • industry standards.

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RANGE STATEMENT

Lifting Equipment may include but not limited to:	• fibre ropes • wire ropes • chain • wire and synthetic slings • shackles • eyebolts • beam clamps • plate clamps • spreader beams • lifting beams • pallet forks and cages • concrete kibbles • personnel boxes.
Communication Methods may include but are not limited to:	• written instructions • signage, • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol.
Cranes may include but not limited to:	• tower cranes (including self erecting) • portal boom cranes • vehicle loading cranes • slewing mobile cranes • non-slewing cranes • derrick cranes.
Appropriate personnel may include but are not limited to:	• supervisors • colleagues • managers who are authorised to take responsibility for the workplace or operations.
Communication Equipment may include but not limited to:	• fixed channel two-way radios • whistles • bells.
Personal protective equipment (PPE) may include but not limited to:	• hard hat • safety boots • gloves • high visibility clothing • reflective vest • relevant breathing, hearing, sight, skin and sun protection.
Load destination may include but	• ground

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not limited to:	• loading platforms • suspended floors • vehicles.
Communication signals may include but not limited to:	• stop - hand • stop - whistle • hoist up - hand • hoist up - whistle • hoist down - hand • hoist down - whistle • luff boom down - hand • luff boom down - whistle • luff boom up - hand • luff boom up - whistle • telescope out - hand • telescope out - whistle • telescope in - hand • telescope in - whistle • slew left - hand • slew left - whistle • slew right - hand • slew right - whistle.
Defective Equipment may include but not limited to:	• excessive wear • damage • stretched • broken wires • cut/damaged fibres.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

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Co-requisite units Nil

Functional area

Functional area

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CPCCLRG3001A Licence to perform rigging basic level

Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit specifies the outcomes required to perform basic rigging work associated with movement of plant and equipment, steel erections, hoists (including mast climbing hoists), placement of pre-cast concrete, safety nets and static lines, perimeter safety screens and shutters; and cantilever crane loading platforms for licensing purposes.

Application of the Unit

Application of the unit

This unit requires the applicant to be able plan the work, select and inspect equipment, set up task, erect structures and plant and dismantle structures and plant.

This unit is based upon the National Standard for Licensing Persons Performing High Risk Work.

This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

This unit has a pre-requisite requirement. This requirement may be met by either the successful completion of the unit *CPCCLDG3001A Licence to perform dogging* or holding a valid licence for dogging.

Licensing/Regulatory Information

Refer to Unit Descriptor

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Pre-Requisites

Prerequisite units

CPCCLDG3001A	Licence to perform dogging

Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan job.	1.1. Task to be undertaken is assessed. 1.2. Potential workplace ***hazards*** are identified. 1.3. ***Hazard control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment. 1.4. Site information is obtained. 1.5. All ***forces and loads*** associated with erecting and dismantling ***structures*** and ***associated plant*** are considered in consultation with ***appropriate personnel***. 1.6. ***Rigging equipment*** and ***associated equipment*** are identified in consultation with appropriate personnel according to ***procedures*** and site information.

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ELEMENT	PERFORMANCE CRITERIA
	1.7. *Safety equipment* is identified.
	1.8. Appropriate ***communication methods*** are identified with appropriate personnel.
2. Select and inspect equipment.	2.1. Rigging equipment and associated equipment are selected and inspected according to procedures and the appropriate standard.
	2.2. Safety equipment is selected and inspected according to procedures.
	2.3. All defective rigging equipment, associated equipment and safety equipment is isolated, reported and recorded according to procedures.
	2.4. ***Communication equipment*** is selected and inspected for serviceability (where applicable.
3. Set up task.	3.1. Appropriate ***hazard prevention***/***control measures*** are applied to the work area according to procedures.
	3.2. ***Ground suitability*** is inspected and checked (where appropriate).
	3.3. Site information is reviewed, interpreted and communicated to appropriate personnel and ***appropriate personnel***.
	3.4. All forces and loads associated with erecting and dismantling structures and associated plant are determined in consultation with appropriate personnel.
	3.5. Safety equipment is fitted and worn correctly (where appropriate).
	3.6. Rigging equipment and associated plant are positioned for work application and stability according to procedures.
	3.7. Methods of applying ***temporary connections*** using fibre rope are applied according to procedures and the appropriate standard.
4. Erect structures and plant.	4.1. Structures and associated plant are erected according to procedures and site information.
	4.2. Stability of structures and associated plant is maintained during erection according to procedures.
	4.3. Work is conducted safely at heights including safe and effective use of safety equipment.
	4.4. Appropriate communication methods and communication equipment, are used to co-ordinate the tasks.
	4.5. Associated plant and rigging equipment is used

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ELEMENT	PERFORMANCE CRITERIA
	according to procedures and the appropriate standard. 4.6. Temporary guys, ties, propping and shoring, including ***flexible steel wire rope***, and tubing, are connected where required. 4.7. Associated equipment is used in a safe and appropriate manner. 4.8. The completed task is inspected according to the appropriate standard. 4.9. Excess materials are removed from the work area (where applicable).
5. Dismantle structures and plant.	5.1. Structures and associated plant are dismantled according to procedures and the appropriate standard. 5.2. Work is conducted safely at heights including safe and effective use of safety equipment. 5.3. Stability of structures and associated plant is maintained during dismantling according to procedures. 5.4. Rigging equipment, associated equipment, safety equipment and associated plant are inspected for damage and defects. 5.5. All defective rigging equipment, associated equipment, associated plant and safety equipment are isolated reported and recorded according to procedures. 5.6. Rigging equipment and associated equipment are stored. according to procedures and the appropriate standard. 5.7. Hazard prevention/control measures are removed (where appropriate).

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

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REQUIRED SKILLS AND KNOWLEDGE

Required skills for this unit are:

- ability to calculate Safe Working Load (SWL) and Working Load Limit (WLL)
- ability to erect and dismantle, level, plumb and stabilise associated plant and structures
- ability to work safely at heights including the correct application of safety equipment.
- accurate interpretation of basic structural charts and structural plans (site information)
- applying methods for making temporary connections of ropes using fibre and synthetic types
- apply methods of splicing and whipping fibre and synthetic ropes
- correct application and use of all rigging and associated equipment
- risk assessment and hazard control strategies
- interpersonal and communication skills at a level sufficient to site/workplace requirements. This includes the relevant communication methods and equipment.
- verify problems and equipment faults and demonstrate appropriate response.

Required knowledge

Required knowledge for this unit is:

- appropriate mathematical procedures for estimation and measurement of loads
- ability to interpret manufacturer's specifications for all plant and equipment use in rigging operations
- knowledge of principles relating to all plant, equipment and structural stability
- knowledge of the types and functions of rigging, safety and associated equipment including an understanding of their limitations.
- organisational and workplace standards, requirements, policies and procedures for rigging
- understanding of the hierarchy of hazard identification and control
- relevant Commonwealth, state or territory and local government OHS legislation, standards and codes of practice for undertaking rigging activities
- understanding of inspection and maintenance requirements of a wide range of appropriate plant and equipment in line with Australian Standards or manufacturer's specifications
- estimation of ground bearing pressures of the full range of soil types and associated ground conditions for setting up plant and equipment.

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Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Successful assessment of this unit meets the competency requirement of the National Standard for licensing Persons Performing High Risk Work.

State/Territory OHS regulators have mandated the use of Assessment Instruments and Instructions for Assessment endorsed by the national body responsible for OHS matters for the assessment of this unit.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of the ability to:

- comply with OHS licensing legislation.
- effectively communicate and work safely with others in the work area.
- effectively conduct risk assessment and management procedures.
- effectively complete the following tasks:-
  - inspection of all plant and equipment, and
  - installation of a fall arrest system (Static line), and
  - use of a safety harness / fall arrest system, and
  - installation of crane loading platforms and
  - installation of a safety net, and
  - installation of a shutter and safety screen, and
  - demonstrated ability to work safely at heights, and
  - erection of structural steel, and
  - erection of precast panel, and
  - set up and operation of a winch for load movement, and
  - installation of a materials hoist, or
  - installation of a mast climber.
- effectively demonstrate the following knots,

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	bends and hitches:- • Sheet bend, • Becket hitch, • Running bowline, • Double bowline. • effectively demonstrate the following splices and whippings:- • Eye splice, • Back splice, • Short splice, • Sail makers whipping, • Common whipping, • West countryman's
Context of and specific resources for assessment	Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the National OHS endorsed Assessment Instrument. Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting. Assessors must ensure that the assessment in the workplace is organised to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace. Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints. Assessment is to comply with the requirements of any relevant Standards or operating procedures for basic rigging. Applicants must have access to: • personal protective equipment (PPE) for the purpose of the Performance Assessment. • appropriate safety equipment in safe condition • appropriate rigging equipment, associated equipment associated plant in safe condition as described in the endorsed assessment instrument • communication equipment (e.g. two-way

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	radios) where applicable • appropriate materials as required for safe erection of structures • appropriate materials for conducting fibre rope slicing, whipping, knots, bends and hitches.
Method of assessment	Assessment must be conducted using the national OHS endorsed Assessment Instruments. These Instruments provide advice on their application. The use of **'simulators'** in the assessment of this unit of competency is **not acceptable**. Assessment may be in conjunction with the assessment of other units of competency. Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
Guidance information for assessment	Further information about endorsed Assessment Instruments may be obtained from state/territory OHS regulators.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Hazards may include but are not limited to:	• ground stability (e.g. ground condition, recently filled trenches, slopes) • overhead hazards (e.g. power lines, service pipes) (**NB**: minimum clearance distance from powerlines or electrical equipment as determined by relevant state authority or

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RANGE STATEMENT

	electrical supply authority.) • traffic (e.g. pedestrians, vehicles, other plant) • insufficient lighting • environmental conditions (e.g. wind, lightning, storms) • other specific hazards (e.g. dangerous materials).
Hazard control measures:	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls. It includes the application of the hierarchy of control, the six-step preference of control measures to manage and control risk: • elimination • substitution • isolation • engineering control measures • using safe work practices • personal protective equipment.
Appropriate standards may include:	• codes of practice • legislation • Australian Standards • manufacturer's specifications • industry standards (where applicable).
Site Information may include, but not limited to:	• local conditions such as access and egress, • work method statements, • site specific job safety analyses and other site specific documentation as required. • task plans / Schedules and structural plans.
Forces and Loads may include, but not limited to:	• dead loads • live loads • static load • dynamic loads • wind loads.
Structures may include but are not limited to:	• structural steel • precast panels.
Associated plant may include but not limited to:	• static lines • safety nets • hoists

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RANGE STATEMENT

	• mast climbers • loading platforms.
Appropriate personnel may include:	• engineers • supervisors • colleagues • managers who are authorised to take responsibility for the workplace or operations.

Rigging Equipment may include but is not limited to:	• scaffolds
	• elevated work platforms
	• personnel box
	• cantilevered crane loading platforms
	• mast climbers.
	• safety screens and shutters
	• cranes including but not limited to:
	  • non-slewing cranes
	  • mobile slewing cranes
	  • vehicle loading cranes
	  • tower cranes
	  • self-erecting tower cranes
	  • portal boom cranes
	  • derrick cranes
	  • bridge and gantry cranes.

Associated equipment may include but is not limited to:	• all types of power and manually operated lifting gear • fibre ropes • flexible steel wire rope (FSWR) • chains • wire and synthetic slings • shackles • terminations • wedge sockets • eye bolts • beam clamps • plate clamps • rope grips • turnbuckles • rigging screws • chain blocks • lever blocks • lever-action winches

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RANGE STATEMENT

	• sheaves • spreader bars • lifting beams • jacks • levers • skates • wedges • rollers • girder trolley
Procedures may include but is not limited to:	• manufacturer's guidelines (instructions, specifications or checklists) • industry operating procedures, relevant codes of practice • workplace procedures (work instructions, operating procedures, checklists).
Safety Equipment may include but not limited to:	• safety harness • energy absorber • lanyard • inertia reel • static safety lines • safety nets.
Communication Methods may include but is not limited to:	• verbal and non-verbal language • written instructions • signage • hand signals • listening, • questioning to confirm understanding, and appropriate worksite protocol. **NB**: Mobile phones are not to be used for signalling purposes during the rigging process.
Communication equipment may include but is not limited to:	• fixed channel two-way radios
Hazard prevention/control measures may include but is not limited to:	• safety tags on electrical switches/isolators • powerlines are insulated • safety observer used inside exclusion zone • power disconnected • traffic barricades and control • pedestrian barricades • trench covers

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RANGE STATEMENT

	• movement of obstructions • personal protective equipment • adequate illumination • safety shutters and screens.
Ground suitability may include but is not limited to:	• rough uneven ground • backfilled ground • soft soils • hard compacted soil • rock • bitumen • concrete • suspended concrete floors • building roofs • landings • ground bearing pressure.
Appropriate personnel may include but not limited to	• other riggers • doggers • crane operators.
Temporary connections may include but not limited to:	• knots • bends • hitches • spicing • whipping.
Flexible Steel Wire Rope (***FSWR***) includes:	• identification, uses and connections. May include termination for: • static lines, • guys, • purchase systems, • lashing, • cranes, • hoist and winch ropes.

Unit Sector(s)

Unit sector Construction

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Co-requisite units

Co-requisite units Nil

Functional area

Functional area

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CPCCLRG3002A Licence to perform rigging intermediate level

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit specifies the outcomes required to perform rigging work at the intermediate level, which includes all the outcomes for rigging work at the basic level, and also includes rigging of cranes, rigging of conveyors, rigging of dredges and excavators, rigging associated with tilt slabs, rigging associated with demolition work, and dual lifts for licensing purposes.

Application of the Unit

Application of the unit

This unit requires the applicant to be able plan the work, select and inspect equipment, set up task, erect structures and plant and dismantle structures and plant.

This unit is based upon the National Standard for Licensing Persons Performing High Risk Work.

This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

This unit has a pre-requisite requirement. This requirement may be met by either the successful completion of the unit *CPCCLRG3001A Licence to perform rigging basic level* or holding a valid licence for basic rigging.

Licensing/Regulatory Information

Refer to Unit Descriptor

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Pre-Requisites

Prerequisite units

CPCCLRG3001A	Licence to perform rigging basic level

Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan job.	1.1. Task to be undertaken is assessed 1.2. Potential workplace ***hazards*** are identified 1.3. ***Hazard control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment 1.4. Site information is obtained 1.5. All ***forces and loads*** associated with erecting and dismantling ***structures*** and ***associated plant*** are considered in consultation with ***appropriate personnel***. 1.6. ***Rigging equipment*** and ***associated equipment*** are identified in consultation with appropriate personnel

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ELEMENT	PERFORMANCE CRITERIA
	according to ***procedures*** and site information.
	1.7. *Safety equipment* is identified.
	1.8. Appropriate ***communication methods*** are identified with appropriate personnel.
2. Select and inspect equipment.	2.1. Rigging equipment and associated equipment are selected and inspected according to procedures and the appropriate standard.
	2.2. Safety equipment is selected and inspected according to procedures.
	2.3. All defective rigging equipment, associated equipment and safety equipment is isolated, reported and recorded according to procedures.
	2.4. ***Communication equipment*** is selected and inspected for serviceability (where applicable)
3. Set up tasks.	3.1. Appropriate ***hazard prevention***/***control measures*** are applied to the work area according to procedures.
	3.2. ***Ground suitability*** is inspected and checked (where appropriate).
	3.3. Site information is reviewed, interpreted and communicated to appropriate personnel and ***appropriate personnel***.
	3.4. All forces and loads associated with erecting and dismantling structures and associated plant are determined in consultation with appropriate personnel.
	3.5. Safety equipment is fitted and worn correctly (where appropriate).
	3.6. Rigging equipment and associated plant are positioned for work application and stability according to procedures.
4. Erect structures and plant.	4.1. Structures and associated plant is erected according to procedures and site information.
	4.2. Stability of structures and associated plant is maintained during erection according to procedures.
	4.3. Work is conducted safely at heights including safe and effective use of safety equipment.
	4.4. Appropriate communication methods and communication equipment, are used to co-ordinate the tasks.
	4.5. Temporary guys, ties, propping and shoring, including ***flexible steel wire rope***, and tubing, are connected where required.

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ELEMENT	PERFORMANCE CRITERIA
	4.6. Associated plant and rigging equipment is used according to procedures and the appropriate standard. 4.7. Associated equipment is used in a safe and appropriate manner. 4.8. The completed task is inspected according to the appropriate standard. 4.9. Excess materials are removed from the work area (where applicable)
5. Dismantle structures and plant.	5.1. Structures and associated plant are dismantled according to procedures and the appropriate standard. 5.2. Work is conducted safely at heights including safe and effective use of safety equipment. 5.3. Stability of structures and associated plant is maintained during dismantling according to procedures. 5.4. Rigging equipment, associated equipment, safety equipment and associated plant are inspected for damage and defects 5.5. All defective rigging equipment, associated equipment, associated plant and safety equipment are isolated reported and recorded according to procedures. 5.6. Rigging equipment and associated equipment are stored according to procedures and the appropriate standard. 5.7. Hazard prevention/control measures are removed (where appropriate)

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills for this unit are:

- ability to calculate Safe Working Load (SWL) and Working Load Limit (WLL)

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REQUIRED SKILLS AND KNOWLEDGE

- ability to erect and dismantle, level, plumb and stabilise associated plant and structures
- ability to work safely at heights including the correct application of safety equipment.
- accurate interpretation of structural charts and structural plans (site information)
- correct application and use of all rigging and associated equipment
- risk assessment and hazard control strategies
- interpersonal and communication skills at a level sufficient to site/workplace requirements. This includes the relevant communication methods and equipment.
- verify problems and equipment faults and demonstrate appropriate response.

Required knowledge

Required knowledge for this unit is:

- appropriate mathematical procedures for estimation and measurement of loads
- ability to interpret manufacturer's specifications for all plant and equipment use in rigging operations
- knowledge of principles relating to all plant, equipment and structural stability
- knowledge of the types and functions of rigging, safety and associated equipment including an understanding of their limitations
- organisational and workplace standards, requirements, policies and procedures for rigging
- understanding of the hierarchy of hazard identification and control
- relevant Commonwealth, state or territory and local government OHS legislation, standards and codes of practice for undertaking rigging activities
- understanding of inspection and maintenance requirements of a wide range of appropriate plant and equipment in line with Australian Standards or manufacturer's specifications
- estimation of ground bearing pressures of the full range of soil types and associated ground conditions for setting up plant and equipment.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	Successful assessment of this unit meets the competency requirement of the National Standard

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EVIDENCE GUIDE

	for licensing Persons Performing High Risk Work. State/Territory OHS regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body responsible for OHS matters.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to:
	• comply with OHS licensing legislation.
	• effectively communicate and work safely with others in the work area.
	• effectively conduct risk assessment and management procedures.
	• effectively complete the following tasks:
	  • adding and removing a tower crane section, or
	  • adding and removing a crane lattice boom section, or
	  • erecting a non guyed tower (e.g. light tower, and
	  • perform a multiple crane lift, or
	  • a multiple winch lift, or
	  • a combination of a crane and winch lift, and
	  • lifting and installing a series of tilt-up panels, or
	  • lifting and installing a series of scenery panels (i.e. entertainment industry), and
	  • demolish/remove a series of tilt-up panel structures, or
	  • demolish/remove a series of scenery panel structures, and
	  • demolishing a concrete encased structural steel column and beam.
	• **NB**: All specifications for these performance tasks are detailed in the endorsed assessment instrument.
	• effectively conduct pre and post operational checks of intermediate rigging equipment.

Context of and specific resources for assessment	Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the

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EVIDENCE GUIDE

	endorsed Assessment Instrument. Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting. Assessors must ensure that the assessment in the workplace is organised to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace. Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints. Assessment is to comply with relevant appropriate standard requirements. Applicants must have access to: • personal protective equipment (PPE) for the purpose of the Performance Assessment • appropriate safety equipment is safe condition • appropriate rigging equipment, associated equipment associated plant in safe condition as described in the endorsed assessment instrument • communication equipment (e.g. radios) where applicable • appropriate materials as required for safe erection of structures.
Method of assessment	Assessment must be conducted using the endorsed Assessment Instruments. These Instruments provide advice on their application. The use of **'simulators'** in the assessment of this unit of competency is **not acceptable**. Assessment may be in conjunction with the assessment of other units of competency. Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.

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EVIDENCE GUIDE

Guidance information for assessment	Further information about endorsed Assessment Instruments may be obtained from state/territory OHS regulators.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Hazards may include but not limited to:	• ground stability (e.g. ground condition, recently filled trenches, slopes) • overhead hazards (e.g. power lines, service pipes) (**NB**: Minimum clearance distance from powerlines or electrical equipment as determined by relevant state authority or electrical supply authority) • traffic (e.g. pedestrians, vehicles, other plant) • insufficient lighting • environmental conditions (e.g. wind, lightning, storms) • other specific hazards (e.g. dangerous materials).
Hazard control measures:	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls. It includes the application of the hierarchy of control, the six-step preference of control measures to manage and control risk: • elimination • substitution • isolation • engineering control measures • using safe work practices • personal protective equipment.

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RANGE STATEMENT

Appropriate standards may include but are not limited to:	• codes of practice • legislation • Australian Standards • manufacturer's specifications • industry standards (where applicable).
Site Information may include but is not limited to:	• local conditions such as access and egress • work method statements • site-specific job safety analyses and other site specific documentation as required • task plans /schedules and structural plans.
Forces and Loads may include but are not limited to:	• dead loads • live loads • static load • dynamic loads • wind loads.
Structures may include but not limited to:	• concrete tilt-up panels • scenery panels (used in entertainment) • non guyed light towers.
Associated plant may include but is not limited to:	• all types of cranes • conveyors • dredges • excavators.
Appropriate personnel may include but not limited to:	• supervisors • engineers • colleagues • managers who are authorised to take responsibility for the workplace or operations.

Rigging Equipment may include but is not limited to:	• scaffolds
	• elevated work platforms
	• stages
	• personnel box
	• cantilevered crane loading platforms,
	• mast climbers
	• safety screens and shutters
	• cranes including but not limited to:
	  • non-slewing cranes
	  • mobile slewing cranes
	  • vehicle loading cranes
	  • tower cranes

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RANGE STATEMENT

	• self-erecting tower cranes • portal boom cranes • derrick cranes • bridge and gantry cranes.
Associated equipment may include but is not limited to:	• all associated equipment at the basic rigging level, and • lifting clutches (swift lifts) • chain motors.
Procedures may include but are not limited to:	• manufacturer's guidelines (instructions, specifications or checklists) • industry operating procedures, relevant codes of practice • workplace procedures (work instructions, operating procedures, checklists).
Safety Equipment may include but not limited to:	• safety harness • energy absorber • lanyard • inertia reel • safety nets • static lines.
Communication Methods may include but not limited to:	• verbal and non-verbal language • written instructions • signage • hand signals • listening, • questioning to confirm understanding, and appropriate worksite protocol. **NB**: Mobile phones are not to be used for signalling purposes during the rigging process.
Communication equipment may include but is not limited to:	• fixed channel two-way radios
Hazard prevention/control measures may include but is not limited to:	• safety tags on electrical switches/isolators • powerlines are insulated • safety observer used inside exclusion zone • power disconnected • traffic barricades and control • pedestrian barricades • trench covers • movement of obstructions

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RANGE STATEMENT

	• personal protective equipment • adequate illumination.
Ground suitability may include but is not limited to:	• rough uneven ground • backfilled ground • soft soils • hard compacted soil • rock • bitumen • concrete • suspended concrete floors • building roofs • landings • ground bearing pressure.
Appropriate personnel may include but not limited to:	• other riggers • doggers • crane operators.
Flexible Steel Wire Rope (***FSWR***) includes:	• identification, uses and connections. May include termination for: • static lines • guys • purchase systems • lashing • cranes • hoist and winch ropes.

Unit Sector(s)

Unit sector Construction

Co-requisite units

Co-requisite units Nil

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Functional area

Functional area

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CPCCOHS1001A Work safely in the construction industry

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency specifies the outcomes required to undertake Occupational Health and Safety (OHS) induction training within the construction industry.

It requires the ability to demonstrate personal awareness of OHS legislative requirements, and the basic principles of risk management and prevention of injury and illness in the construction industry.

Licensing requirements will apply to this unit of competency depending on the regulatory requirements of each jurisdiction.

Application of the Unit

Application of the unit

This unit of competency supports the attainment of the basic OHS knowledge required prior to undertaking designated work tasks within any of the sectors within the construction industry. The unit relates directly to the general induction training program specified by the *National Code of Practice for Induction for Construction Work* (ASCC 2007).

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

Nil

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Prerequisite units Nil

Employability Skills Information

Employability skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify OHS legislative requirements.	1.1. Applicable ***OHS legislative requirements*** relevant to own work, role and responsibilities are identified and explained. 1.2. Duty of care requirements are identified. 1.3. Own responsibilities to comply with ***safe work practices*** are identified and explained.
2. Identify construction hazards and control measures.	2.1. Basic principles of risk management are identified. 2.2. ***Common construction hazards*** are identified and discussed. 2.3. ***Measures for controlling*** hazards and risks are identified.
3. Identify OHS communication and reporting processes.	3.1. OHS communication processes, information and documentation are identified and discussed. 3.2. Role of ***designated OHS personnel*** is identified and explained.

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ELEMENT	PERFORMANCE CRITERIA
	3.3. ***Safety signs and symbols*** are identified and explained. 3.4. Procedures and ***relevant authorities*** for reporting hazards, ***incidents*** and injuries are identified.
4. Identify OHS incident response procedures.	4.1. ***General procedures*** for responding to incidents and ***emergencies*** are identified and explained. 4.2. Procedures for accessing first aid are identified. 4.3. Requirements for the selection and use of relevant ***personal protective equipment*** are identified and demonstrated. 4.4. ***Fire safety equipment*** is identified and discussed.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills for this unit are:

- communication skills to:
  - clarify OHS legislative requirements
  - verbally report construction hazards and risks
  - ask effective questions
  - relay information to others
  - discuss OHS issues and information
- comprehension skills to:
  - explain the basic OHS legislative requirements which will be applicable to own work
  - explain the meaning of safety signs and symbols
  - identify common construction hazards
  - discuss the basic principles of risk management.

Required knowledge

Required knowledge for this unit is:

- applicable Commonwealth, State or Territory OHS legislation, regulations, standards, codes of practice and industry standards/guidance notes relevant to own

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REQUIRED SKILLS AND KNOWLEDGE

work, role and responsibilities

- basic principles of risk management and assessment for construction work
- common construction hazards
- common construction safety signage and its meanings
- general construction emergency response and evacuation procedures
- general construction work activities that require licenses, tickets or certificates of competency
- general first aid response requirements
- general procedures for raising OHS issues
- general procedures for reporting OHS hazards, accidents, incidents, emergencies, injuries, near misses and dangerous occurrences
- general procedures for responding to hazards, incidents and injuries
- general workers' compensation and injury management requirements
- OHS hierarchy of controls
- OHS responsibilities and rights of duty holders, including:
  - persons in control of construction work/projects
  - employers and self-employed persons
  - supervisors
  - employees
  - designers
  - inspectors
  - manufacturers and suppliers
- own responsibilities to comply with safe work practices relating to:
  - housekeeping
  - identification of hazards
  - preventing bullying or harassment
  - smoking
  - use of amenities
  - use of drugs and alcohol
- role of OHS committees and representatives
- types of common personal protective equipment and fire safety equipment
- types of OHS information and documentation.

Evidence Guide

EVIDENCE GUIDE

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EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence must confirm personal awareness of the following: • applicable OHS legislative and safety requirements for construction work including duty of care • the range of common construction hazards and procedures for the assessment of risk and application of the hierarchy of control • OHS communication processes, information and documentation including the role of OHS committees and representatives, the meaning of common safety signs and symbols, and procedures for reporting hazards, incidents and injuries • general procedures for responding to incidents and emergencies including evacuation, first aid, fire safety equipment and PPE.
Context of and specific resources for assessment	• Resources must be available to support the program including participant materials and other information or equipment related to the skills and knowledge covered by the program. • It is recommended that the assessment tool designed specifically to support this unit of competency will provide consistency in assessment outcomes. • Where applicable, physical resources should include equipment modified for people with disabilities • Access must be provided to appropriate assessment support when required. • Assessment processes and techniques must be culturally appropriate, and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed • In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in such a

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EVIDENCE GUIDE

	manner as is appropriate to the oracy, language and literacy levels of the operator, any cultural issues that may affect responses to the questions, and reflecting the requirements of the competency and the work being performed.
Method of assessment	Assessment methods may include more than one of the following: • practical assessment • oral questioning • written test • work-based activities • simulated project based activity

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

OHS legislative requirements relate to:	• Australian standards • construction industry OHS standards and guidelines • duty of care • health and safety representatives, committees and supervisors • licences, tickets or certificates of competency • National Code of Practice for Induction Training for Construction Work • national safety standards • OHS and welfare Acts and regulations • safety codes of practice.
Duty of care requirements relate to:	• legal responsibility under duty of care to do everything reasonably practicable to protect others from harm

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RANGE STATEMENT

	• own responsibilities to comply with safe work practices, including activities that require licences, tickets or certificates of competency • relevant state OHS requirements, including employers and self-employed persons, persons in control of the work site, construction supervisors, designers, manufacturers and suppliers, construction workers, subcontractors and inspectors.
Safe work practices include:	• access to site amenities, such as drinking water and toilets • general requirements for safe use of plant and equipment • general requirements for use of personal protective equipment and clothing • housekeeping to ensure a clean, tidy and safer work area • no drugs and alcohol at work • preventing bullying and harassment • smoking in designated areas • storage and removal of debris.
Risk relates to:	• likelihood of a hazard causing injury or harm.
Principles of risk management include:	• assessing the risks involved • consulting and reporting ensuring the involvement of relevant workers • controlling the hazard • identifying hazards • reviewing to identify change or improvement.
Hazard relates to:	• any thing (including an intrinsic property of a thing) or situation with the potential to cause injury or harm.
Common construction hazards include:	• confined spaces • electrical safety • excavations, including trenches • falling objects • hazardous substances and dangerous goods • HIV and other infectious diseases • hot and cold working environments • manual handling • noise • plant and equipment

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RANGE STATEMENT

	• traffic and mobile plant • unplanned collapse • ultraviolet (UV) radiation • working at heights.
Measures for controlling risk to eliminate or minimise hazards in accordance with the hierarchy of control include:	• elimination • substitution • isolation • engineering control • administrative control • personal protective equipment.
OHS communication processes include:	• discussions with OHS representatives • OHS meetings • OHS notices, newsletters, bulletins and correspondence • OHS participative arrangements • processes for raising OHS issues • toolbox talks • workplace consultation relating to OHS issues and changes.
OHS information and documentation includes:	• accident and incident reports • Acts and regulations • Australian standards • codes of practice • construction documentation and plans • emergency information contact • evacuation plans • guidance notes • job safety analyses • labels • material safety data sheets (MSDS) • proformas for reporting hazards, incidents and injuries • reports of near misses and dangerous occurrences • risk assessments • safe work method statements • safety meeting minutes • site safety inspection reports.
Designated OHS personnel includes:	• first aid officers • OHS committee members

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RANGE STATEMENT

	• OHS representatives • supervisors.
Safety signs and symbols include:	• emergency information signs (e.g. exits, equipment and first aid) • fire signs (e.g. location of fire alarms and firefighting equipment) • hazard signs (e.g. danger and warning) • regulatory signs (e.g. prohibition, mandatory and limitation or restriction) • safety tags and lockout (e.g. danger tags, out of service tags).
Relevant authorities include:	• emergency services (e.g. police, ambulance, fire brigade and emergency rescue) • OHS regulatory authority • supervisor.
Incidents include:	• accidents resulting in personal injury or damage to property • near misses or dangerous occurrences which do not cause injury but may pose an immediate and significant risk to persons or property, and need to be reported so that action can be taken to prevent recurrence, for example: • breathing apparatus malfunctioning to the extent that the user's health is in danger • collapse of the floor, wall or ceiling of a building being used as a workplace • collapse or failure of an excavation more than 1.5 metres deep (including any shoring) • collapse or partial collapse of a building or structure • collapse, overturning or failure of the load bearing of any scaffolding, lift, crane, hoist or mine-winding equipment • damage to or malfunction of any other major plant • electric shock. • electrical short circuit, malfunction or explosion • uncontrolled explosion, fire or escape of gas, hazardous substance or steam • any other unintended or uncontrolled incident or event arising from operations carried on at a

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RANGE STATEMENT

	workplace.
General procedures for responding to incidents and emergencies include:	• basic emergency response (keep calm, raise alarm, obtain help) • evacuation • notification of designated OHS personnel and authorities • notification of emergency services (e.g. when and how) • referring to site emergency plans and documentation.
Emergencies include:	• chemical spill • fire • injury to personnel • structural collapse • toxic and/or flammable vapours emission • vehicle/mobile plant accident.
Personal protective equipment includes:	• aprons • arm guards • eye protection • gloves • hard hat • hearing protection • high visibility retro reflective vests • protective, well fitting clothing • respiratory protection • safety footwear • UV protective clothing and sunscreen.
Fire safety equipment includes:	• breathing apparatus • fire blankets • firefighting equipment.

Unit Sector(s)

Unit sector Construction

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Co-requisite units

Co-requisite units Nil

Functional area

Functional area

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CPCPCM4012A Estimate and cost work

Modification History

Changes to performance criteria, required skills and knowledge, range statement and critical aspects

Not equivalent to CPCPCM4002A

Unit Descriptor

This unit of competency specifies the outcomes required to estimate materials, labour and time requirements and to establish costs for provision of services or products.

The unit covers the gaining of information, the estimation of materials, labour and time, the calculation of costs and the associated documentation.

Application of the Unit

This unit of competency supports the development of estimating and costing skills relevant to minor plumbing jobs.

Licensing/Regulatory Information

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-Requisites

Nil

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills

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unit of competency.	and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Gather information.	1.1	Details of customer requirements are obtained through discussion with customer or from information supplied.
		1.2	Plans and specifications are accessed and site is inspected.
		1.3	Details of products and services to be provided are sourced.
		1.4	Delivery point and methods of transportation are determined where necessary.
		1.5	Details are recorded according to workplace procedures.
2	Estimate materials, labour and time.	2.1	Work, including preparatory tasks, is planned and sequenced.
		2.2	Types and quantities of materials required for product work are ***estimated***.
		2.3	Labour requirements to perform work are estimated.
		2.4	Time requirements to perform work are estimated.
		2.5	***Sustainability principles and concepts*** are observed when preparing for and undertaking work process.
3	Calculate costs.	3.1	Total materials, labour and overhead costs are calculated according to workplace procedures using appropriate ***equipment***.
		3.2	Total work cost is calculated, including overheads and mark-up percentages.
		3.3	Final cost for work is calculated.

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4	Document and verify details.	4.1	Details of costs and charges are documented according to workplace procedures.
		4.2	Costs, calculations and other details are verified according to workplace procedures.
		4.3	Customer quotation and tender are prepared.
		4.4	Details are documented for future reference according to workplace procedures and using relevant ***information***.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - identify customer requirements
  - use language and concepts appropriate to cultural differences
  - use and interpret non-verbal communication
- literacy skills to:
  - complete workplace documentation
  - prepare quotes and tenders
  - record details, including costs and charges
- numeracy skills to:
  - estimate materials and labour required for provision of services or products
  - determine costs for the provision of a quotation or tender in the plumbing and services industry
  - apply calculations

Required knowledge

- estimating and calculating processes
- impact of time on wages and other costs
- job safety analysis (JSA) and safe work method statements (SWMS)
- process for estimating and costing work
- processes for accessing information and for calculating material requirements
- relevant statutory requirements related to estimating and costing work

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- SI system of measurements
- relevant Australian standards applicable to the work to be undertaken
- tendering and contracting processes
- workplace and equipment safety requirements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

This unit of competency could be assessed in the workplace or a close simulation of the workplace environment providing that simulated or project-based assessment techniques fully replicate plumbing and services workplace conditions, materials, activities, responsibilities and procedures.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

A person who demonstrates competency in this unit must be able to provide evidence of:

- locating, interpreting and applying relevant information, standards and specifications to the estimation and costing of work
- applying safety requirements throughout the work sequence, including electrical safety requirements and the use of personal protective clothing and equipment
- estimating and costing three varied jobs in at least Class 1 buildings, including:
  - applying sustainability principles and concepts
  - estimating quantities of material required
  - determining types and amount of labour required to complete the work
  - estimating time required to complete the work
  - estimating overheads associated with the job
  - providing a written quotation and tender for each of the work requirements
  - communicating and working effectively and safely with others.

Context of and specific resources

This competency is to be assessed using standard and

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for assessment

authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the minimum task requirements
- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry-related systems information.

Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and

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the practical requirements of the workplace

- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Factors for ***estimating*** and costing must include:

- labour
- materials
- overheads.

Sustainability principles and concepts:

- cover the social, economic and environmental use of resources to meet current and future needs
- may include:
  - use of materials and resources to meet the current needs of society while preserving the environment for the future
  - efficient use and recycling of material

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- disposing of waste material to ensure minimal environmental impact
- energy efficiency
- water efficiency.

Equipment may include:

- calculators
- computers running appropriate software to estimate and calculate necessary details
- measuring equipment appropriate to work
- stationery.

Information may include:

- charts and hand drawings
- instructions issued by authorised organisational or external personnel
- job drawings
- manufacturer specifications and instructions
- material safety data sheets (MSDS)
- memos
- organisation work specifications and requirements
- regulatory and legislative requirements, particularly those pertaining to:
  - codes of practice
  - contracts
  - building codes
  - WHS and environmental requirements
  - plumbing regulations
- relevant Australian standards
- safe work procedures relating to estimating and costing work
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

Unit Sector(s)

Functional area

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Unit sector Plumbing and services

Custom Content Section

Not applicable.

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CPPFES2005A Demonstrate first attack firefighting equipment

Modification History

Revised unit

Unit updated and equivalent to PRMPFES05B Use portable fire fighting equipment

Unit Descriptor

This unit of competency specifies the outcomes required to demonstrate the use of portable fire extinguishers, fire hose reels and fire blankets.

Application of the Unit

This unit of competency supports fire protection equipment service technicians responsible for demonstrating to customers how to interpret and follow manufacturers' instructions on various first attack firefighting equipment in emergency situations.

Licensing/Regulatory Information

Work in this area must be completed according to relevant legislative, industry, customer and organisational requirements, including occupational health and safety (OHS) policies and procedures.

Different states and territories may have regulatory mechanisms that apply to this unit. Candidates are advised to check for regulatory limitations.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of

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performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Demonstrate correct use of portable fire extinguishers to extinguish simulated fires.	1.1	***Fire type*** and ***classification*** are determined.
		1.2	***Fire extinguishers*** are selected to attack different fires.
		1.3	Safe use of fire extinguishers is demonstrated according to manufacturers' instructions and relevant ***OHS and workplace policies and procedures***.
2	Demonstrate correct use of fire hose reels.	2.1	Safe use of ***hose reels*** is demonstrated according to manufacturers' instructions and relevant OHS and workplace policies and procedures.
		2.2	Water is turned off in the approved sequence and hose reel is checked for leaks.
		2.3	Hose reel is rewound correctly after use.
3	Demonstrate correct use of fire blanket.	3.1	Safe use of fire blankets is demonstrated according to manufacturers' instructions and relevant OHS and workplace policies and procedures.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- decision-making skills to select correct first attack firefighting equipment for different types of fires
- effective customer service
- language, literacy and numeracy skills to:
  - communicate with others in a clear and concise manner
  - read and comply with work instructions and specifications

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- interpersonal skills to relate to people from a range of social and cultural backgrounds
- skills to work safely when:
  - applying recommended manufacturers' techniques for operating equipment and fire fighting
  - using firefighting equipment

Required knowledge

- basic methods of locating a fire
- correct use of fire extinguishers and hose reels on different classes of fire and implications of incorrect use
- how fire can be spread by conduction, convection, radiation and direct burning
- how water pressure influences the discharge distance for hose reels
- key actions in a fire emergency, commonly known by the acronym RACE:
  - rescue
  - activate alarm
  - confine fire
  - evacuate or extinguish
- meaning of secondary damage
- reasons for cooking oil and fat fires requiring special attention
- theory of fire, including the triangle of combustion
- types and operation of fire protection equipment classified as first attack equipment

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	This unit of competency could be assessed by practical demonstration, using simulated fire situations. Due to safety and cost factors, methods of extinguishing class D, E and F fires are confined to oral explanations and role play or simulations only. All practical demonstrations involving the use of simulated fires must adhere to the safety and environmental regulations relevant to each state or territory.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the required skills and knowledge specified in this unit. In particular the person should demonstrate the ability to: • select correct portable firefighting equipment for a particular type of fire

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	• demonstrate the use of portable firefighting equipment • use portable firefighting equipment safely and correctly.
Context of and specific resources for assessment	Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements. Resource implications for assessment include: • actual or simulated work environment • portable firefighting equipment.
Method of assessment	Assessment methods must: • satisfy the endorsed Assessment Guidelines of the Property Services Training Package • include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application • reinforce the integration of employability skills with workplace tasks and job roles • confirm that competency is verified and able to be transferred to other circumstances and environments.
Guidance information for assessment	Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support. Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed. This unit could be assessed on its own or in combination with other units relevant to the job function, for example: • CPPFES2004A Identify types of installed fire safety equipment and systems • CPPFES2006A Prepare for installation and servicing operations.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

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Fire types may include:	• combustible metals • cooking oils and fats • energised electrical equipment • flammable and combustible liquids • flammable gases • ordinary combustibles.
Classifications of fires include:	• classes A, B, C, D, E and F.
Fire extinguishers may include:	• carbon dioxide • foam • powder • vaporising liquid • water • wet chemical.

OHS and workplace policies and procedures may be located in quality assurance and/or procedures manuals relating to:	• appropriate techniques to use in relation to emergency management of fires
	• assessing work site for hazards and risks prior to preparing the work site for the work procedure
	• displaying signs and using barriers in the work area
	• OHS policies, procedures and programs, including:
	  • risk and hazard recognition
	  • emergency procedures
	  • awareness of electrical hazards
	  • following confined spaces procedures
	  • first aid
	• personnel practices and guidelines outlining work roles, responsibilities and delegations
	• safety procedures, including those for working safely:
	  • around electrical wiring, cables and overhead powerlines
	  • around tools and equipment
	  • on ladders and raised platforms
	• using personal protective equipment, including:
	  • safety glasses or goggles
	  • safety boots or shoes
	  • hard hats
	  • earmuffs or plugs.

Hose reel types may be:	• swing-hinged • vehicle-mounted • wall-mounted.

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Unit Sector(s)

Fire protection equipment

Custom Content Section

Not applicable.

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HLTAID001 Provide cardiopulmonary resuscitation

Modification History

Release	Notes
Release 3	Updated mapping information. Equivalent outcome.
Release 2	Updated mapping information. Equivalent outcome.
Release 1	This version was released in *HLT Health Training Package release 1.0* and meets the requirements of the New Standards for Training Packages. Significant changes to elements and performance criteria Revised evidence requirements, including volume and frequency of assessment

Application

This unit of competency describes the skills and knowledge required to perform cardiopulmonary resuscitation (CPR) in line with the Australian Resuscitation Council (ARC) Guidelines.

This unit applies to all workers who may be required to provide CPR in a range of situations, include community and workplace settings.

Specific licensing requirements relating to this competency, including requirements for refresher training should be obtained from the relevant state/territory Work Health and Safety Regulatory Authority.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
1. Respond to an emergency	1.1 Recognise an emergency situation

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ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
situation	1.2 Identify, assess and minimise immediate hazards to health and safety of self and others 1.3 Assess the casualty and recognise the need for CPR 1.4 Seek assistance from emergency response services
2. Perform CPR procedures	2.1 Perform CPR 2.2 Display respectful behaviour towards casualty 2.3 Operate automated external defibrillator (AED) according to manufacturer's instructions
3. Communicate details of the incident	3.1 Accurately convey incident details to emergency response services 3.2 Report details of incident to workplace supervisor as appropriate 3.3 Maintain confidentiality of records and information in line with statutory and/or organisational policies

Foundation Skills

The Foundation Skills described those required skills (language, literacy and numeracy) that are essential to performance.

- *Oral communication* – in order to make an accurate verbal report to supervisor and emergency response services

The remaining foundation skills essential to performance are explicit in the performance criteria of this unit.

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Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705

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Assessment Requirements for HLTAID001 Provide cardiopulmonary resuscitation

Modification History

Release	Notes
Release 1	This version was released in *HLT Health Training Package release 1.0* and meets the requirements of the New Standards for Training Packages. Significant changes to elements and performance criteria. Revised evidence requirements, including volume and frequency of assessment

Performance Evidence

The candidate must show evidence of the ability to complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the job role.

There must be demonstrated evidence that the candidate has completed the following tasks at least once in line with state/territory regulations, first aid codes of practice, ARC guidelines and workplace procedures:

- conducted a hazard assessment and identified strategies to minimise risk
- demonstrated safe manual handling techniques
- assessed airway, breathing and responsiveness of casualty
- performed at least four minutes of uninterrupted CPR on both an adult and an infant resuscitation manikin placed on the floor, demonstrating the following techniques on each:
  - checking for response and normal breathing
  - recognising abnormal breathing
  - opening and clearing the airway
  - using correct hand location, compression depth rate in line with the ARC recommended ratio of compressions and ventilations
  - acting in the event of regurgitation or vomiting
  - following single rescuer procedure, including the demonstration of a rotation of operators with minimal interruptions to compressions
- followed the prompts of an Automated External Defibrillator (AED)
- provided an accurate verbal report of the incident
- responded to at least one simulated resuscitation scenario contextualised to the candidate's workplace/community setting.

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Knowledge Evidence

The candidate must be able to demonstrate essential knowledge required to effectively complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the work role. This includes knowledge of:

- state/territory regulations, first aid codes of practice and workplace procedures including:
  - ARC Guidelines relevant to the provision of CPR
  - safe work practices to minimise risks and potential hazards
  - infection control principles and procedures, including use of standard precautions
  - requirements for currency of skill and knowledge
- legal, workplace and community considerations, including:
  - need for stress-management techniques and available support following an emergency situation
  - duty of care requirements
  - respectful behaviour towards a casualty
  - own skills and limitations
  - consent
  - privacy and confidentiality requirements
  - importance of debriefing
- considerations when providing CPR, including:
  - airway obstruction due to body position
  - appropriate duration and cessation of CPR
  - appropriate use of an AED
  - chain of survival
  - standard precautions
- basic anatomy and physiology relating to:
  - absence of normal breathing
  - anatomy of the external chest
  - physiology relating to response/consciousness
  - upper airway anatomy and effect of positional change.

Assessment Conditions

Skills must be demonstrated working individually:

- in an environment that provides realistic in-depth, industry-validated scenarios and simulations to assess candidates' skills and knowledge.

In addition, assessment resources must include:

- adult and infant resuscitation manikins in line with ARC Guidelines for the purpose of assessment of CPR procedures
- equipment, including:

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- an Automated External Defibrillator (AED) training device.

Simulated assessment environments must simulate the real-life working environment where these skills and knowledge would be performed, with all the relevant equipment and resources of that working environment.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors. In addition, assessors must hold:

- a current advanced first aid certificate

OR

- at least three years' experience as a health professional, nurse or emergency services provider

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705

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HLTAID003 Provide first aid

Modification History

Release	Comments
Release 4.0	Updated mapping information. Equivalent outcome.
Release 3.0	Updated mapping information.
Release 2.0	Minor corrections to formatting to improve readability. Equivalent competency outcome.
Release 1.0	This version was released in *HLT Health Training Package release 1.0* and meets the requirements of the New Standards for Training Packages. Significant changes to elements and performance criteria, changes to scope of unit. New evidence requirements for assessment. Removal of prerequisite unit

Application

This unit of competency describes the skills and knowledge required to provide a first aid response to a casualty. The unit applies to all workers who may be required to provide a first aid response in a range of situations, include community and workplace settings.

Specific licensing requirements relating to this competency, including requirements for refresher training, should be obtained from the relevant state/territory Work Health and Safety Regulatory Authority.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
1. Respond in an emergency situation	1.1 Recognise an emergency situation 1.2 Identify, assess and manage immediate hazards to health and safety of self and others 1.3 Assess the casualty and recognise the need for first

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ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
	aid response
	1.4 Assess the situation and seek assistance from emergency response services where required
2. Apply appropriate first aid procedures	2.1 Perform cardiopulmonary resuscitation (CPR)
	2.2 Provide first aid in accordance with established first aid principles
	2.3 Display respectful behaviour towards casualty
	2.4 Obtain consent from casualty where possible
	2.5 Use available resources and equipment to make the casualty as comfortable as possible
	2.6 Operate first aid equipment according to manufacturer's instructions
	2.7 Monitor the casualty's condition and respond in accordance with first aid principles
3. Communicate details of the incident	3.1 Accurately convey incident details to emergency response services
	3.2 Report details of incident to workplace supervisor as appropriate
	3.3 Maintain confidentiality of records and information in line with statutory and/or organisational policies
4. Evaluate own performance	4.1 Recognise the possible psychological impacts on self and other rescuers involved in critical incidents
	4.2 Participate in debriefing to address individual needs

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Foundation Skills

The Foundation Skills described those required skills (language, literacy and numeracy) that are essential to performance.

- Oral communication – in order to make an accurate verbal report to emergency response services and workplace supervisor

The remaining foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705

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Assessment Requirements for HLTAID003 Provide first aid

Modification History

Release	Comments
Release 1.1	Minor corrections to formatting to improve readability. Equivalent competency outcome.
Release 1.0	This version was released in *HLT Health Training Package release 1.0* and meets the requirements of the New Standards for Training Packages. Significant changes to elements and performance criteria, changes to scope of unit. New evidence requirements for assessment. Removal of prerequisite unit

Performance Evidence

The candidate must show evidence of the ability to complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the job role.

There must be demonstrated evidence that the candidate has completed the following tasks at least once in line with state/territory regulations, first aid codes of practice, Australian Resuscitation Council (ARC) guidelines and workplace procedures:

- conducted a hazard assessment and identified strategies to minimise risk
- demonstrated safe manual handling techniques
- assessed airway, breathing and responsiveness of casualty
- performed at least four minutes of uninterrupted CPR on both an infant resuscitation manikin and an adult resuscitation manikin placed on the floor, demonstrating the following techniques on each:
  - checking for response and normal breathing
  - recognising abnormal breathing
  - opening and clearing the airway
  - using correct hand location, compression depth rate in line with the ARC recommended ratio of compressions and ventilations
  - acting in the event of regurgitation or vomiting
  - following single rescuer procedure, including the demonstration of a rotation of operators with minimal interruptions to compressions
- followed the prompts of an Automated External Defibrillator (AED)
- conducted a verbal secondary survey

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- applied first aid procedures for the following:
  - allergic reactions
  - anaphylaxis
  - asthma
  - basic wound care
  - severe bleeding
  - burns
  - cardiac arrest
  - choking and airway obstruction
  - convulsions
  - envenomation (using pressure immobilisation)
  - fractures, sprains and strains (using arm slings, roller bandages or other appropriate immobilisation techniques)
  - poisoning
  - respiratory distress
  - shock
- provided an accurate verbal report of the incident
- responded to at least two simulated emergency scenarios contextualised to the candidate's workplace/community setting.

Knowledge Evidence

The candidate must be able to demonstrate essential knowledge required to effectively complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the work role. This includes knowledge of:

- state/territory regulations, first aid codes of practice and workplace procedures including:
  - ARC Guidelines relevant to provision of CPR and first aid
  - safe work practices to minimise risks and potential hazards
  - infection control principles and procedures, including use of standard precautions
  - requirements for currency of skill and knowledge
- legal, workplace and community considerations including:
  - need for stress-management techniques and available support following an emergency situation
  - duty of care requirements
  - respectful behaviour towards a casualty
  - own skills and limitations
  - consent
  - privacy and confidentiality requirements
  - importance of debriefing
- considerations when providing first aid including:
  - airway obstruction due to body position

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  - appropriate duration and cessation of CPR
  - appropriate use of an AED
  - standard precautions and infection control
- principles and procedures for first aid management of the following scenarios:
  - abdominal injuries
  - allergic reactions
  - anaphylaxis
  - bleeding control
  - burns
  - cardiac conditions
  - choking and airway obstruction
  - cold and crush injuries
  - diabetes
  - dislocations
  - drowning
  - envenomation
  - environmental impact (including hypothermia, hyperthermia, dehydration and heat stroke)
  - epilepsy
  - eye and ear injuries
  - fractures
  - head, neck and spinal injuries
  - minor skin injuries
  - needle stick injuries
  - poisoning and toxic substances
  - respiratory distress, including asthma and other respiratory conditions
  - seizures
  - severe allergic and anaphylactic reactions
  - shock
  - soft tissue injuries
  - unconsciousness, abnormal breathing or not breathing
- basic anatomy and physiology relating to:
  - absence of normal breathing
  - anatomy of the external chest
  - physiology relating to response/consciousness
  - upper airway anatomy and effect of positional change
  - anatomy and physiology considerations in provision of first aid for specified conditions

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Assessment Conditions

Skills must be demonstrated working individually:

- in an environment that provides realistic in-depth, industry-validated scenarios and simulations to enable assessment of candidates' skills and knowledge.

Assessment resources must include:

- adult and infant resuscitation manikins in line with ARC Guidelines for the purpose of assessment of CPR procedures
- first aid equipment including
  - roller bandages
  - triangular bandages cloth
  - trauma dressings
  - placebo bronchodilator and spacer device
  - adrenalin auto-injector training device
  - an AED training device
  - emergency rescue blanket
  - workplace first aid kit.

Simulated assessment environments must simulate the real-life working environment where these skills and knowledge would be performed, with all the relevant equipment and resources of that working environment.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

In addition, assessors must hold:

- a current advanced first aid certificate

OR

- at least three years' experience as a health professional, nurse or emergency services provider.
-

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705

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HLTAID005 Provide first aid in remote situations

Modification History

Release	Comments
Release 3.0	Updated mapping information. Equivalent outcome.
Release 2.0	Minor changes to formatting to improve readability.
Release 1.0	This version was released in *HLT Health Training Package release 1.0* and meets the requirements of the New Standards for Training Packages. Significant changes to elements and performance criteria, changes to scope of unit. New evidence requirements for assessment, including use of contextualised remote scenarios.

Application

This unit of competency describes the skills and knowledge required to provide first aid response and emergency life support to a casualty in a remote and/or isolated situation.

The unit applies to workers who may be required to prepare for and provide a first aid response in locations beyond the reach of timely medical assistance.

Specific licensing requirements relating to this competency, including requirements for refresher training, should be obtained from the relevant state/territory Work Health and Safety Regulatory Authority.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
1. Respond to a remote emergency situation	1.1 Plan for isolated travel or work if required, accounting for expected contingencies

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ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
	1.2 Recognise an emergency situation
	1.3 Identify, assess and manage immediate hazards to health and safety of self and others
	1.4 Assess the casualty and recognise the need for first aid response
	1.5 Assess the situation and evaluate options for medical assistance
	1.6 Evaluate options for transporting casualty or waiting for medical assistance in relation to environmental issues, risks, transport availability and casualty condition
2. Apply appropriate first aid procedures	2.1 Perform cardiopulmonary resuscitation (CPR)
	2.2 Provide first aid in accordance with established first aid principles
	2.3 Display respectful behaviour towards casualty
	2.4 Obtain consent from casualty where possible
	2.5 Use available resources and equipment to make the casualty as comfortable as possible
	2.6 Operate first aid equipment according to manufacturer's instructions
	2.7 Monitor the casualty's condition and respond in accordance with first aid principles
3. Manage the incident	3.1 Seek assistance from others present to manage incident circumstances
	3.2 Establish communication links with emergency response services and convey incident details
	3.3 Report details of casualty condition, changes in condition, management and responses
	3.4 Assist in the evacuation of the casualty by following directions given by emergency response services as required
	3.5 Maintain confidentiality of records and

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ELEMENT	PERFORMANCE CRITERIA
Elements define the essential outcomes.	*Performance criteria specify the level of performance needed to demonstrate achievement of the element.*
	information in line with statutory and/or organisational policies
4. Evaluate own performance	4.1 Recognise the possible psychological impacts on self and other rescuers involved in critical incidents
	4.2 Participate in debriefing to address individual needs

Foundation Skills

The Foundation Skills described those required skills (language, literacy and numeracy) that are essential to performance.

- *Oral communication* – in order to make an accurate verbal report to emergency response services and workplace supervisor

The remaining foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

No equivalent unit

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705

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Assessment Requirements for HLTAID005 Provide first aid in remote situations

Modification History

Release	Comments
Release 1.1	Minor changes to formatting to improve readability.
Release 1.0	This version was released in *HLT Health Training Package release 1.0* and meets the requirements of the New Standards for Training Packages. Significant changes to elements and performance criteria, changes to scope of unit. New evidence requirements for assessment, including use of contextualised remote scenarios.

Performance Evidence

The candidate must show evidence of the ability to complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the job role.

There must be demonstrated evidence that the candidate has completed the following tasks at least once in line with state/territory regulations, first aid codes of practice, Australian Resuscitation Council (ARC) guidelines and workplace procedures:

- prepared a contingency plan in relation to providing a first aid response in a remote situation
- conducted a hazard assessment and identified strategies to minimise risk
- demonstrated safe manual handling techniques
- assessed airway, breathing and responsiveness of casualty
- performed at least four minutes of uninterrupted CPR on both an infant resuscitation manikin and an adult resuscitation manikin placed on the floor, demonstrating the following techniques on each:
  - checking for response and normal breathing
  - recognising abnormal breathing
  - opening and clearing the airway
  - using correct hand location, compression depth rate in line with the ARC recommended ratio of compressions and ventilations
  - acting in the event of regurgitation or vomiting

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    - following single rescuer procedure, including the demonstration of a rotation of operators with minimal interruptions to compressions
- activated and followed the prompts of an Automated External Defibrillator (AED)
- conducted a secondary survey, including checking pulse of at least one person and recording the rate
- applied first aid procedures for the following:
    - allergic reactions, including severe reactions
    - anaphylaxis
    - asthma
    - basic wound care
    - severe bleeding and haemorrhage
    - burns
    - cardiac arrest
    - choking and airway obstruction
    - convulsions
    - environmental impacts
    - envenomation (using pressure immobilisation)
    - fractures, sprains and strains (using arm slings, roller bandages or other appropriate immobilisation techniques)
    - poisoning
    - respiratory distress
    - shock
- provided an accurate verbal report of the incident
- responded to at least three simulated emergency scenarios contextualised to the candidate's remote and/or isolated situation

Knowledge Evidence

The candidate must be able to demonstrate essential knowledge required to effectively complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the work role. This includes knowledge of:

- state/territory regulations, first aid codes of practice and workplace procedures including:
    - ARC guidelines relevant to provision of CPR and first aid
    - safe work practices to minimise risks and potential hazards
    - infection control principles and procedures, including use of standard precautions
    - requirements for currency of skill and knowledge
- legal, workplace and community considerations including:
    - need for stress-management techniques and available support following an emergency situation
    - duty of care requirements
    - respectful behaviour towards a casualty

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  - own skills and limitations
  - consent
  - privacy and confidentiality requirements
  - importance of debriefing
- considerations when providing first aid, including:
  - airway obstruction due to body position
  - appropriate duration and cessation of CPR
  - appropriate use of an AED
  - standard precautions and infection control
- principles and procedures for first aid management of the following scenarios, contextualised to the candidate's remote and/or isolated situation:
  - abdominal injuries
  - allergic reactions
  - anaphylaxis
  - bleeding control
  - burns
  - cardiac conditions
  - choking and airway obstruction
  - cold and crush injuries
  - convulsions
  - diabetes
  - dislocations
  - drowning
  - envenomation
  - hypothermia
  - hyperthermia
  - dehydration
  - heat stroke
  - epilepsy
  - eye and ear injuries
  - fractures
  - head, neck and spinal injuries
  - minor skin injuries
  - needle stick injuries
  - poisoning and toxic substances
  - respiratory distress including asthma
  - seizures
  - shock
  - soft tissue injuries
  - unconsciousness, abnormal breathing or not breathing

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- remote considerations in the provision of first aid, including:
  - typical hazards and strategies for preparing supplies to address contingencies
  - management options relating to transporting casualty, including aero-medical evacuation
  - how to identify and prepare areas for safe evacuation, including aero-medical evacuation
  - how and when to access emergency response services
  - communication systems, equipment and methods available in remote situations
  - priorities of management in first aid when dealing with life-threatening conditions
  - specific considerations contextualised to alpine, desert, marine, rural/remote settings and tropical environments
- basic anatomy and physiology relating to:
  - absence of normal breathing
  - anatomy of the external chest
  - physiology relating to response/consciousness
  - upper airway anatomy and effect of positional change
  - anatomy and physiology considerations in provision of first aid for specified conditions, including specific considerations for remote settings

Assessment Conditions

Skills must be demonstrated working individually:

- in an environment that provides realistic in-depth, industry-validated scenarios and simulations to assess candidates' skills and knowledge.

In addition, assessment resources must include:

- adult and infant resuscitation manikins in line with ARC guidelines for the purpose of assessment of CPR procedures
- first aid equipment including:
  - roller bandages
  - triangular bandages cloth
  - trauma dressings
  - placebo bronchodilator and spacer device
  - adrenalin auto-injector training device
  - an AED training device
  - clinical thermometer
  - evacuation stretcher
  - emergency rescue blanket
  - workplace first aid kit.

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Simulated assessment environments must simulate the real-life working environment where these skills and knowledge would be performed, with all the relevant equipment and resources of that working environment.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors. In addition, assessors must hold:

- a current advanced first aid certificate

OR

- at least three years' experience as a health professional, nurse or emergency services provider

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705

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HLTHSE204D Follow safe manual handling practices

Modification History

HLT07 Version 4	HLT07 Version 5	Comments
HLTHSE204C Follow safe manual handling practices	HLTHSE204D Follow safe manual handling practices	ISC upgrade changes to remove references to old OHS legislation and replace with references to new WHS legislation. No change to competency outcome.

Unit Descriptor

Descriptor

This unit is concerned with the workers ability to carry out their work in a safe manner within the health care environment

Work will usually be performed within a prescribed range of functions involving known routines and procedures

Application of the Unit

Application

This unit is based on the *National Guidelines for Integrating Occupational Health and Safety Competencies into National Industry Competency Standards, National Code of Practice for Manual Handling 1990, An Employer's Guide to the Manual Tasks Advisory Standard 2000, National Standard for Manual Handling* (*1990*), the *Work Health and Safety Act (2011),* Safe Work Australia publications

Licensing/Regulatory Information

Not Applicable

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Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains Employability Skills

Elements and Performance Criteria Pre-Content

Elements define the essential outcomes of a unit of competency.

The Performance Criteria specify the level of performance required to demonstrate achievement of the Element. Terms in italics are elaborated in the Range Statement.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Follow organisation procedures, for a particular task, to minimise risk of injury	1.1 Use *appropriate posture and handling techniques* to reduce muscle load on exertion 1.2 Manage work tasks involving vibration in accordance with *workplace policies* and procedures 1.3 Use appropriate *manual handling* techniques and equipment to meet customer needs within own scope of responsibility 1.4 Package loads appropriately for easy handling 1.5 Follow lifting limitations prescribed within relevant guidelines 1.6 Use safe work practices in handling loads 1.7 Wear appropriate *personal protective equipment*
2. Utilise and implement strategies as directed to improve workplace organisation	2.1 Identify work health and safety (WHS) hazards, assess risk and report to *supervisor* 2.2 Contribute to workplace design and task analysis to ensure appropriate work areas are developed

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ELEMENT	PERFORMANCE CRITERIA
	2.3 Follow workplace policies and procedures in relation to pacing and scheduling of tasks
	2.4 Carry out equipment and environmental maintenance in accordance with a workplace preventative maintenance schedule
	2.5 Follow workplace procedures for reporting symptoms and injuries to self and or others
	2.6 Follow workplace procedures for any *return to work program*

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Essential knowledge:

The candidate must be able to demonstrate essential knowledge required to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes knowledge of:

- Legislative requirements and best practice approaches to WHS
- Location and use of safety equipment such as fire extinguishers and emergency units and alarms
- Potential hazards in the workplace and the risks/potential risks of certain behaviours, layouts/features
- Reporting mechanisms required for workplace injury and compensation claims
- Rights and obligations of employees and employers regarding WHS
- Significant hazards in the workplace both indoors and outdoors
- Workplace procedures that apply to fire, accidents and emergency situations

Essential skills:

It is critical that the candidate demonstrate the ability to:

- Work safely using safe manual handling techniques and equipment
- Comply with the organisation's WHS policies and procedures

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- Implement strategies designed to improve manual handling processes within the workplace

In addition, the candidate must be able to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes the ability to:

- Apply lifting, lowering and transfer techniques of manual handling
- Apply safe handling practices and other safety procedures
- Demonstrate correct use of equipment according to manufacturers' specifications
- Implement practices to prevent or minimise risk
- Take into account opportunities to address waste minimisation, environmental responsibility and sustainable practice issues
- Use reading and writing skills required to fulfil job roles in a safe manner and as specified by organisation/service, which may include the ability to:
  - understand symbols used in WHS signs
  - read workplace safety pamphlets or procedure manuals
  - read labels and handling chemicals such as cleaning fluids
  - understand that literacy support is available in the workplace and may range from having access to support or assistance from expert/mentor/supervisor, to having no communication supports available
  - literacy in English or a community language depending on the language used in pamphlets or workplace manuals
- Use oral communication skills required to fulfil job roles in a safe manner and as specified by the organisation/service, including skills in:
  - asking questions
  - providing clear information
  - listening to and understanding workplace instructions
  - clarifying workplace instructions when necessary
  - English or a community language, depending on client group

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Critical aspects for assessment

- The individual being assessed must provide evidence

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and evidence required to demonstrate this competency unit:	of specified essential knowledge as well as skills • This unit is most appropriately assessed in the workplace or in a simulated workplace and under the normal range of workplace conditions • This unit can be assessed independently however holistic assessment practice with other general health services units of competency is encouraged

Context and resources for assessment:	• Resource requirements may include access to:
	  • workplace health and safety policies and procedures
	  • infection control procedures
	  • other organisation policies and procedures
	  • duties statements and/or job descriptions
	  • manual handling equipment
	• Assessment may include:
	  • observation of performance
	  • written tasks
	  • interviewing and questioning
	  • formal appraisal systems
	  • staff/client feedback
	  • portfolio/CV
	  • supporting statement of supervisor(s)
	  • authenticated evidence of relevant work experience and/or formal/informal learning
	  • case studies and scenarios as a basis for discussion of issues and strategies to contribute to best practice in the work environment

Access and equity considerations:	• All workers in the health industry should be aware of access and equity issues in relation to their own area of work • All workers should develop their ability to work in a culturally and linguistically diverse (CALD) environment • In recognition of particular health issues facing Aboriginal and Torres Strait Islander communities, workers should be aware of cultural, historical and current issues impacting on health of Aboriginal and Torres Strait Islander people • Assessors and trainers must take into account relevant access and equity issues, in particular

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	relating to factors impacting on health of Aboriginal and/or Torres Strait Islander clients and communities

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Appropriate posture and handling techniques may include:	• Bending from the knees • Maintaining a straight back when lifting and carrying • Using two hands to lift or carry • Avoiding lifting objects above shoulder height • Adopting non repetitive movements • Positions not held for long periods of time • Correct use of mechanical aids
Workplace policies and procedures will include:	• Hazard identification policies and procedures • Emergency, fire and accident procedures • Procedures for the use of personnel clothing and equipment • Hazard identification and issue resolution procedures • Job procedures and work instructions • Waste management • Security procedures
Manual handling equipment may include:	• Lifting apparatus • Hoists • Trolleys • Belts • Pallet jacks
Personal protective equipment	• Plastic aprons

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may include:	• Gowns • Gloves including heavy duty • Overalls • Enclosed shoes • Eye protection
Hazards include:	• Manual handling • Client handling • Toxic or hazardous substances/radiation • RSI prevention mandatory
Supervisor may by:	• Nominated personnel • WHS representative
Workplace organisation may include:	• Grievance procedures • Appropriate induction of staff • Team meetings • Debriefing procedures following crisis • Management performance levels • Employee assistance with problems and introducing them to services available in the community
Return to work program may include:	• Persons returning from injury and/or stress • Persons returning after extended leave

Unit Sector(s)

Not Applicable

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MEM05004C Perform routine oxy acetylene welding

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers preparing materials and performing routine oxy acetylene welding.

Application of the Unit

Application of the unit	This unit applies in a maintenance or manufacturing environment where the welding is not required to meet an Australian standard or equivalent. Fillet and butt welds would typically be performed on low carbon/mild steels. Where welding is required to meet Australian Standard 1554 General Purpose or equivalent codes, OHS regulations and/or licensing requirements, Unit MEM05022C (Perform advanced welding using oxy acetylene process) should be selected. **Band**: **A** **Unit Weight**: **2**

Licensing/Regulatory Information

Refer to Application of the Unit

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Identify weld requirements	1.1. Weld requirements are identified from job instructions. 1.2. Location of welds is identified in accordance with standard operating procedures and job specifications.
2. Prepare materials for welding	2.1. Materials are cleaned and prepared ready for welding.
3. Prepare equipment for welding	3.1. Welding equipment is set up correctly. 3.2. Settings and consumables are selected.
4. Perform routine welding using *oxy acetylene*	4.1. Safe welding practices are applied. 4.2. Materials are welded to job requirements. 4.3. Welds are cleaned in accordance with standard operating procedures.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- preparing materials
- setting up welding equipment
- welding with oxy acetylene fuel gas
- reading and interpreting routine information on written job instructions, specifications and standard operating procedures
- following oral instructions
- using measurement skills for joint preparation and routine oxy acetylene welding

Required knowledge

Look for evidence that confirms knowledge of:

- preparatory requirements
- materials and consumables properties and characteristics
- equipment and equipment settings
- fuel gas properties and applications
- post welding treatments
- weld characteristics
- any applicable industry standards, NOHSC guides, State/Territory regulatory codes of practice/standards
- safe work practices and procedures
- safe welding practices
- use and application of personal protective equipment for routine oxy acetylene welding

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment

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EVIDENCE GUIDE	
Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to prepare materials and carry out routine oxy acetylene welding.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with performing routine oxy acetylene welding or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

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Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Materials	Mild and low carbon steel and cast iron
Prepared	Preheating, setting up jigs, fixtures, clamps, joint preparation
Equipment	Hoses, blowpipes, regulators
Consumables	Filler rods, fluxes
Oxy acetylene	The term 'oxy-acetylene' is used here to describe a range of fuel gases, including acetylene, LPG, hydrogen etc.
Cleaned	Fluxes

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units		

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Competency field

Competency field	Fabrication

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MEM05012C Perform routine manual metal arc welding

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers preparing the materials and carrying out routine manual metal arc welding (MMAW).

Application of the Unit

Application of the unit	This unit applies in a maintenance or manufacturing environment where the welding is not required to meet an Australian standard or equivalent. Fillet and butt welds would typically be performed on low carbon/mild steels. Where welding is required to AS 1554 General Purpose or equivalent codes, occupational health and safety regulations and/or licensing requirements, Unit MEM05015D (Weld using manual metal arc welding process) should be selected. **Band**: **A** **Unit Weight**: **2**

Licensing/Regulatory Information

Refer to Application of the Unit

Pre-Requisites

Prerequisite units		

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Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
1. Identify weld requirements	1.1. Weld requirements are identified from job instructions. 1.2. Location of welds is identified in accordance with standard operating procedures and job specifications.
2. Prepare materials for welding	2.1. Materials are cleaned and prepared ready for welding.
3. Prepare equipment for welding	3.1. Welding equipment is set up correctly. 3.2. Correct electrodes are selected to suit application and settings.
4. Perform routine welding using MMAW	4.1. Safe welding practices are applied. 4.2. Materials are welded to job requirements. 4.3. Welds are cleaned in accordance with standard operating procedures.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • preparing materials and electrodes • setting up welding equipment • welding with MMAW • reading and interpreting routine information on written job instructions, specifications and standard operating procedures • performing measurements for joint preparation and routine MMAW
Required knowledge
Look for evidence that confirms knowledge of: • material and equipment preparation • properties and characteristics of materials and consumables • weld characteristics • equipment set-up and settings • MMAW processes and properties • post-welding treatments • safe welding practices • use and application of personal protective equipment

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to prepare materials and carry out routine manual metal arc welding (MMAW).

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EVIDENCE GUIDE	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, i.e. the candidate is not in productive work, then appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with performing routine manual metal arc welding or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning should not require language, literacy and numeracy skills beyond those required in this unit. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT

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RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Materials	Low and mild carbon steel or similar
Prepared	Cleaning, setting up jigs, fixtures, clamps, joint preparation
Welding equipment	Welding leads, welding machines, electrode holder etc.
Cleaned	Slag and spatter, cleaning, using files and grinders

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units		

Competency field

Competency field	Fabrication

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MEM05015D Weld using manual metal arc welding process

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit of competency covers the preparation, positioning, fixing, and manual welding techniques associated with general trade level welding using manual metal arc welding (MMAW) equipment including the selection and set up of the equipment appropriate to both the material and the weld to be performed, carrying out the MMAW to prescribed standards, and examining for and correcting defects, in a range of welded fabrications.

Application of the Unit

Application of the unit	This unit of competency applies to welds associated with heavy or light metal fabrications. Welds are fillet and butt welds in all positions on a range of ferrous and non-ferrous materials that may include carbon steel or stainless steel. Weld quality would conform to Australian Standard 1554 General Purpose, American Bureau of Shipping (ABS) or equivalent. This unit has been primarily developed for Engineering Tradesperson - Fabrication apprenticeship training and the recognition of trade level skills in MMAW. It may also apply to other trade occupations requiring higher level MMAW welding skills. Where manual thermal processes associated with preparation, pre-heat and/or post-heat are required, MEM05007C Perform manual heating and thermal cutting and/or MEM05008C Perform advanced manual thermal cutting, gouging and shaping should be considered for selection. **Band**: **A** **Unit Weight**: **4**

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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM05012C	Perform routine manual metal arc welding
	MEM05051A	Select welding processes
	MEM05052A	Apply safe welding practices
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare materials for manual metal arc welding (MMAW)	1.1. Weld requirements are identified from specifications and/or drawings 1.2. Materials are correctly prepared 1.3. Materials are assembled/aligned to specification, where required
2. Select welding equipment and consumables	2.1. Welding equipment and electrodes appropriate to the material and the weld are identified and selected
3. Assemble and set up welding equipment	3.1. Welding equipment is assembled and set up
4. Minimise and rectify distortion	4.1. Appropriate distortion prevention measures are selected and applied 4.2. Distortion is rectified
5. Weld to job specification using MMAW	5.1. Weld deposit is to specification 5.2. Joints are cleaned to specifications
6. Ensure weld conformance	6.1. Defects are rectified with minimum loss of sound metal using correct techniques and tools 6.2. Weld joints are visually inspected for conformance to specifications
7. Where required, maintain weld records	7.1. Where required, weld records are completed correctly

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- identifying and interpreting welding specifications including appropriate standards e.g. Australian Standard 1554 General Purpose, American Bureau of Shipping (ABS) or equivalent
- selecting and using appropriate tools and equipment

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REQUIRED SKILLS AND KNOWLEDGE
• using a variety of welding machines and electrodes • identifying and rectifying weld defects • applying techniques for distortion prevention and rectification • cleaning welds • reading and interpreting information on sketches, written job instructions, specifications, standard operating procedures and engineering drawings • recording routine information including routine weld records related to MMAW onto proformas and standard workplace forms • following oral instructions • measurement skills relating to joint preparation and MMAW
Required knowledge
Required knowledge includes: • material preparation • joint preparations • electrode classification • causes of distortion for materials within the scope of this unit • causes of defects and methods of rectification • the relationships between amperage, electrode and material • safe welding practices • use and application of personal protective equipment for MMAW

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to prepare materials, select and set up the welding equipment, carry out MMAW and examine for and correct defects, in a range of welding activities associated with MMAW. Competency in this unit cannot be awarded until all prerequisites have been satisfied.
Critical aspects for assessment and evidence required to demonstrate	Assessors must be satisfied that the candidate can competently and consistently apply the skills covered in

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EVIDENCE GUIDE	
competency in this unit	this unit of competency in new and different workplace situations and contexts. Critical aspects of assessment and evidence include: • following all safety procedures to protect self, other workers and members of the public • identifying and interpreting specifications for MMA welding including Australian Standard 1554 General Purpose • interpreting welding specifications including standard welding symbols used to show weld procedure • selecting appropriate weld preparation methods for material and position of welds. • preparing materials, setting up of jigs, fixtures, clamps,etc. and joint preparation including bevelling • consistently welding different ferrous and non-ferrous materials to AS 1554 General Purpose or equivalent • identifying defects as described in the range statement across a range of welded materials • rectifying defects.
Context of and specific resources for assessment	Welding to AS 1554 General Purpose or equivalent requires both theoretical knowledge and high level practical skills. The assessment process must be designed to identify consistent performance to the standard and the specifications across a range of materials and positions. The assessment must also identify a level of workplace performance in terms of defect rates and weld failure rates. It is recommended that assessment involve demonstrations of competency under both workshop and site conditions. This means that the ideal assessment environment is either on the job or a combination of both on and off the job. The competencies covered by this unit may be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.
Method of assessment	Typically an Engineering Tradesperson - Fabrication and other tradespersons engaged in welding are required to exercise MMAW skills and techniques across a range of jobs and specifications. A single assessment event is not appropriate. On the job assessment should be included as part of the assessment

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EVIDENCE GUIDE	
	process wherever possible. Where assessment occurs off the job, judgement must consider evidence of the candidate's performance in a productive work environment that includes a sufficient range of appropriate tasks and materials to cover the scope of application for this unit. Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with welding using MMAW process or other units requiring the exercise of the skills and knowledge covered by this unit. Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Range Statement

RANGE STATEMENT
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

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RANGE STATEMENT	
Welds	Welds include fillet and butt welds carried out in all positions
Materials	Materials may include ferrous materials including carbon or stainless steel, as well as non-ferrous metals and alloys suitable for MMA welding
Prepared	Preparation of materials may include: • pre-heating • setting up of jigs, fixtures and clamps • joint preparation (e.g. bevelling)
Equipment	Equipment may include AC or DC welding machines
Distortion prevention measures	Distortion prevention measures may include: • pre heating • setting up of jigs, fixtures and clamps
Rectified	Rectified refers to oxy acetylene, air arc equipment and grinding devices
Defects	Defects may include: • porosity • slag inclusions • discontinuities • lack of penetration • undercut

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units	

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Co-requisite units		

Competency field

Competency field	Fabrication

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MEM05045B Perform pipe welds to code standards using manual metal arc welding process

Modification History

Release 3 - equivalent. Australian Standard code corrected to AS4041.

Unit Descriptor

Unit descriptor	This unit covers preparing and producing pipe welds to code standards using manual metal arc welding (MMAW).

Application of the Unit

Application of the unit	This unit applies to MMAW to code standard carried out using a range of materials. Welds in this unit are associated with high quality fabrications. Butt welds in pipe with the axis horizontal, vertical and/or askew would be applied to meet Australian Standards 1210, AS 4041, ASME IX or equivalent. The unit, together with Unit MEM05026C (Apply welding principles), may satisfy the requirements of AS 1796 Certificates 2 and 4. Where advanced manual thermal cutting, gouging and shaping is carried out, Unit MEM05008C (Perform advanced manual thermal cutting, gouging and shaping) should also be selected. **Band**: This unit has dual status and is to be regarded as both a Specialisation band A unit and Specialisation band B unit for progression to C7 (AQF level IV). **Unit Weight**: **6**

Licensing/Regulatory Information

Not Applicable

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Pre-Requisites

Prerequisite units		
Path 1	MEM05007C	Perform manual heating and thermal cutting
	MEM05012C	Perform routine manual metal arc welding
	MEM05015D	Weld using manual metal arc welding process
	MEM05016C	Perform advanced welding using manual metal arc welding process
	MEM05026C	Apply welding principles
	MEM05051A	Select welding processes
	MEM05052A	Apply safe welding practices
	MEM09002B	Interpret technical drawing
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range

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	statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Maintain welding equipment	1.1. Routine maintenance is performed on welding equipment.
2. Prepare welding materials and equipment for MMAW pipe welding to code standards	2.1. Weld requirements for MMAW welding to code standards are determined. 2.2. Welding equipment is set up correctly. 2.3. Materials are prepared to produce pipe weld to code standard.
3. Weld pipe using MMAW to procedure specifications	3.1. Materials are welded as per weld procedure specification.
4. Ensure weld quality	4.1. Discontinuities are rectified to ensure conformance to code requirements. 4.2. Weld records are maintained in accordance with standard operating procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Look for evidence that confirms skills in: • depositing welds to procedure requirements. • determining weld outcomes, consumables and settings from welding procedure specification • interpreting technical drawings and weld specifications for welding to code standards using MMAW • using hand and power tools to prepare and weld materials to code standard • using measurement and numeracy skills for welding to code standards

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REQUIRED SKILLS AND KNOWLEDGE
• using language and literacy skills to enable completion of weld records
Required knowledge
Look for evidence that confirms knowledge of: • requirements to produce welds to quality of AS 1210, AS 4041, ASME IX or equivalent • safe welding practices • use and application of personal protective equipment for MMAW • knowledge of appropriate standards or codes • methods for preparing pipe for code standard welding • pre-welding and post-welding heating methods and requirements for pipe welding to code standard • requirements for maintaining weld records to code standard • hazards and control measures associated with welding, including housekeeping

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	A person who demonstrates competency in this unit must be able to perform pipe welds to code standards using MMAW process. Competency in this unit cannot be claimed until all prerequisites have been satisfied.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.
Context of and specific resources for assessment	This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, i.e. the candidate is not in productive work, appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be

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EVIDENCE GUIDE	
	demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with the preparation and production of welds or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
Guidance information for assessment	

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Routine maintenance	Ensuring leads, hand pieces etc. are in serviceable condition, and correct current carrying capacity
Prepare welding materials	Preheating, setting up of jigs, fixtures, clamps, etc.

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RANGE STATEMENT	
Prepared	Flame cut and ground or machined
Materials	Carbon/manganese steel, stainless steel and low alloy steel materials, etc.

Unit Sector(s)

Unit sector	

Co-requisite units

Co-requisite units		

Competency field

Competency field	Fabrication

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MSAPMOHS110A Follow emergency response procedures

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit relates to the appropriate response to emergency situations for any new workers at the workplace, possibly delivered as part of an induction program.

Application of the Unit

Application of this unit

This competency applies to operators who are required to know the signals when an emergency situation takes place as well as the proper procedures to follow in order to save oneself from possible injury and/or death.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Know when emergency happens.	1.1 Locate emergency signals and controls on machines and/or at the worksite. 1.2 Interpret the signals to take appropriate action. 1.3 Identify emergency where there is no mechanical/ electronic signal.
2. Follow emergency procedures.	2.1 Report emergency according to procedures. 2.2 Identify emergency leader. 2.3 Follow workplace procedures and work instructions for dealing with a range of emergencies, under direct supervision of emergency leader. 2.4 Describe the potential consequences of failing to follow these procedures and instructions. 2.5 Describe what to do if the emergency leader cannot be located when emergency occurs.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit. Knowledge and understanding of the emergency response procedures sufficient to recognise emergency situations and then determine the appropriate action.

Knowledge of the relevant OHS and environmental requirements, and organisation standard operating procedures, is required along with an ability to implement them in a manner that is relevant to emergency response practices.

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Competence includes the ability to:

- identify location of emergency signals on machines and/or at the worksite
- identify emergency situations in which there is no mechanical/electronic signal
- report identified emergency signals/situations to the designated person
- identify the emergency leader
- follow emergency procedures.

Evidence of knowledge of all relevant workplace procedures will include:

- emergency, fire and accident procedures
- chemical spill procedures
- procedures for the use of personal protective clothing and equipment
- organisation standard operating procedures (SOPs)
- hazard policies and procedures
- safety procedures
- personal protective clothing relevant to the required response to the emergency situation.

Language, **literacy and numeracy requirements**

This unit requires the ability to recognise and respond to emergency signals or other communication of an emergency.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

Assessment will occur over a range of situations that will include disruptions to normal, smooth operation.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- recognise potential emergency situations
- take the appropriate action.

Emphasis should be on the ability to follow proper procedures in order to save oneself from possible injury and/or death.

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Consistent performance should be demonstrated. For example, look to see that:

- emergency situations are recognised and communicated promptly
- emergency procedures are understood and followed.

These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems that may have been generated from the past incident history of the workplace and incidents on similar operations around the world.

Assessment method and context

Assessment for this unit will be on a processing plant or in a manufacturing environment.

Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual work environment and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays. Emergency drills are a common and appropriate simulation.

This unit of competency requires a body of knowledge which will be assessed through questioning and the use of 'what if' scenarios both in the workplace (during demonstration of normal operations and walk throughs of abnormal operations) and off the job.

Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

It is expected that this competency may be applicable in combination with other industry, occupation or workplace-specific competencies. In all cases it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Specific resources for assessment

Assessment will require access to an operating plant or work environment over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios, case studies and 'what ifs' will be required as will a bank of questions that will be used to probe the reasoning behind the observable actions.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

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This unit of competency describes emergency situation requirements applicable to all workers. It involves the use of workplace policies and procedures to maintain a safe work environment for oneself and others.

All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This unit of competency includes use of equipment and tools such as PPE required for emergency response.

Hazards

Typical hazards include:

- handling chemicals and hazardous materials
- chemical and or hazardous materials spillage
- gases and liquids under pressure
- moving machinery
- materials handling
- working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours
- fire and explosion.

Personnel

Appropriate personnel for reporting of emergency may include:

- employer
- supervisor
- employees elected as emergency team leader
- other personnel with emergency team leader responsibilities.

Emergency issues

Emergency issues that may need to be raised by workers with designated personnel/ responded to may include:

- observation of injury or incident in the workplace
- fires
- chemical or oil spills
- gas leak or vapour emission
- utilities failure

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- bomb scares
- failure or malfunction of plant/machinery.

Emergency signals

Emergency signals include:

- visual - flashing lights
- auditory - alarms.
-

Unit Sector(s)

Not applicable.

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MSAPMOHS205A Control minor incidents

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit covers control of minor incidents. The competency would be possessed generally by most/all operations personnel and some non-operations personnel. It would require training in addition to that which might typically be part of an induction program, but does not require specialist training such as is given to members of an incident response team. The general purpose of this initial response is to prevent any incident from escalating. In the event of an incident this person may be expected to respond to an incident team member in line with procedures.

This unit does NOT apply to major incidents (see *MSAOHS210A Control non-fire incidents* and *MSAOHS212A Control fire incidents*).

Application of the Unit

Application of this unit

This competency applies to operators who may be called upon to control small incidents in the workplace.

It includes:

- fires of the A,B,C,D,E and F classes
- fuel and other spills
- process overheating
- equipment failure.

The person would:

- safely use first response equipment and coordinate with other actions
- operate incident equipment
- report the use of incident equipment
- mark or position incident equipment to indicate that it has been used and requires servicing.

Generally the person would be part of a team during an incident response. However, he/she may be required to take independent action. At all times they would be liaising and cooperating with other members of the team.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	**PERFORMANCE CRITERIA**
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Evaluate the incident	1.1 Recognise an incident has occurred or is about to occur. 1.2 Assess the incident for type of response and the likely effectiveness of first response action. 1.3 Identify the hazards arising from the incident.

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	1.4 Raise the alarm and seek assistance as required. 1.5 Select appropriate response to control incident. 1.6 Determine hazard control measures to be employed. 1.7 Recommend evacuation if appropriate.
2. Control the incident.	2.1 Maintain personal safety at all times. 2.2 Confine the incident to the area of origin where possible. 2.3 Select appropriate equipment to control incident. 2.4 Use equipment in accordance with procedures. 2.5 Clear and secure the incident area. 2.6 Monitor the incident and surrounding conditions and modify response as appropriate. 2.7 Handover to specialist incident response personnel as appropriate.
3. Conclude the incident control.	3.1 Report the use of equipment according to procedures. 3.2 Mark or position incident control equipment after use to indicate it requires servicing or replacing. 3.3 Participate in incident debrief and reporting in accordance with procedures.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

The knowledge referred to in the Evidence Guide for this unit includes:

- classification of fires and incidents
- limitations of first response equipment
- situations that must not be responded to because of the risk to life
- the hazards involved with first response action
- understanding relevant workplace procedures
- selecting appropriate first response equipment
- understanding the theory of fire and other relevant incidents.

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Competence also includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by:

- damage to first response equipment
- exceeding the limitations of use of incident control equipment or facilities
- inappropriate actions when first response action is undertaken
- inadequacies in facilities that may be used to confine emergencies
- inappropriately identifying the type of incident
- the incorrect use of equipment.

Language, literacy and numeracy requirements

This unit requires the ability to recognise and respond to the signs of an incident and communicate to relevant people as part of the response.

Writing is required to the level of completing required workplace forms and reports.

Numeracy is required to respond to relevant incident data.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Assessment will occur using a simulation and will be undertaken in a work-like environment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- correctly respond to incident situations
- implement appropriate action.

Emphasis should be on the ability to stay ahead of the problem rather than to have to take drastic action in order to recover the situation.

Consistent performance should be demonstrated. For example, look to see that:

- the incident is evaluated appropriately
- an appropriate response to the incident, and appropriate response equipment, is selected
- the safety of persons is given the highest priority
- actions taken are effective and do not cause escalation or other incidents
- all reporting is completed in accordance with procedures.

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These assessment activities should cover a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.

Assessment method and context

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Competence in this unit may be assessed:

- in an appropriate, industrial scenario
- in a situation allowing the generation of evidence of the ability to respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

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This unit applies to all sectors of the industry.

This unit will assist individuals to meet some of their obligations under the relevant State/Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)].

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

All operations to which this unit applies are subject to stringent Health, Safety and Environment (HSE) requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Tools and equipment

This competency includes use of equipment and tools such as:

- fire doors
- fire sprinkler systems
- fire alarm systems
- First Aid kits
- fire extinguishers
- hose reels
- smoke vents
- spill control kits.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'. Typical process and product problems may include:

- determining the nature and size of the incident
- predicting the incident's likely development
- lack of support in an incident
- inappropriate or lack of a means of escape
- lack of availability of control equipment or facilities.
-

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Unit Sector(s)

Not applicable.

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MSAPMOHS216A Operate breathing apparatus

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit covers competence associated with the operation and maintenance of breathing apparatus equipment in an irrespirable atmosphere.

Application of the Unit

Application of this unit

This competency applies to operators who are required to wear breathing apparatus for part of their job - because they are working in a confined space, with hazardous gases/vapours, in an anoxic atmosphere or for other applications requiring the wearing of breathing apparatus. They may also be required to wear it in emergency situations, however this is not the prime focus of this unit, and so makes this unit different from *PUAFIR207A Operate breathing apparatus open circuit*, as it has no prerequisite and is much broader in its application.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Conduct pre-donning checks and tests on breathing apparatus.	1.1 Inspect breathing apparatus for immediate use in accordance with procedures. 1.2 Report/record faulty or damaged equipment in accordance with procedures.
2. Operate breathing apparatus.	2.1 Identify, monitor and control hazards in accordance with the procedures. 2.2 Establish and maintain communication with appropriate personnel throughout the activity. 2.3 Demonstrate effective application of breathing apparatus, undertaking activities as a member of a team, in accordance with procedures. 2.4 Implement entrapment procedures in accordance with procedures. 2.5 Maintain personal safety at all times.
3. Conclude operations.	3.1 Close down breathing apparatus set in accordance with procedures. 3.2 Remove breathing apparatus set in accordance with procedures. 3.3 Undertake after-use cleaning and maintenance of breathing apparatus in accordance with procedures. 3.4 Make equipment ready for operational use in accordance with procedures.

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Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Underpinning knowledge:

- respiratory system, effects of irrespirable atmospheres on the body, protective equipment
- characteristics, component parts, operation of compressed air breathing apparatus
- operational testing, standard operating procedures and safe work practices when wearing breathing apparatus
- operating breathing apparatus
- use of procedures, personal lines and tallies
- pre-use tests and checks, including serviceability of components, integrity of components, cylinder pressure, integrity of air flow system, ancillary equipment.
- breathing apparatus control, including principles of BA Control, organisation procedures, Stage 1 (one entry point), Stage 2 (multiple entry points), entry/exit control point, entry/exit control officer, timing device
- entrapment procedures, including cease all strenuous activity, activate the distress signal unit, remain calm, relocate to safest available place, call for assistance
- communications, including distress signal unit, portable radio, communications sets, signal lines, hand signals.

Underpinning skills:

- Inspecting, donning, operating in, removal, cleaning, maintaining and returning to operational status of breathing apparatus.

Language, **literacy and numeracy requirements**

This unit requires the ability to interpret any permits or other documentation associated with the wearing of breathing apparatus for the job.

Writing is required to the level of completing required workplace reports.

Numeracy is required to enable the determination of the available working time from a breathing apparatus set and similar activities.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment. Assessors must be satisfied that the person can consistently perform the competency as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

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Assessment will occur using industrial breathing apparatus and will be undertaken in a work-like environment.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

In accordance with AS/NZ 17151716, it is essential that competence is demonstrated in the ability to:

- appropriately conduct pre-donning tests
- correctly don breathing apparatus
- operate breathing apparatus
- move in conditions of reduced visibility
- use breathing apparatus in emergency procedures
- follow organisation procedures
- correctly remove breathing apparatus
- return breathing apparatus to operational status.

Assessment method and context

Competence in this unit may be assessed:

- by using an appropriate, industrial breathing apparatus and scenarios
- in a situation allowing the generation of evidence of the ability to respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to breathing apparatus and associated equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

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The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This competency applies to anyone required to wear breathing apparatus as part of their job.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This competency includes use of breathing apparatus, including:

- open circuit
- airline equipment.

Hazards

Typical hazards include:

- fire
- failure to maintain a face seal
- exhaustion of air supply
- malfunction of equipment
- disorientation in smoke/darkness or confinement
- structural hazards and/or hazardous materials
- entrapment.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'.

Variables

Key variables to be monitored for an irrespirable atmospheres include

- heated atmospheres
- asphyxiating atmosphere (oxygen deficient)
- (non-skin absorption) toxic or poisonous atmosphere
- smoke or suspended particles/fibres in atmosphere.
-

Unit Sector(s)

Not applicable.

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MSAPMOHS217A Gas test atmospheres

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit is about testing the working atmosphere to determine if it is safe for the proposed work. Testing involves the use of electronic test apparatus.

Application of the Unit

Application of this unit

In a typical scenario an individual may be required to carry out gas testing of an atmosphere prior to entering a specific area or workspace. The competency requires the person to interpret readings and take actions based on the interpretation.

This unit is modelled on the Public Safety unit PUAFIR307A Monitor hazardous atmospheres, but does not have the prerequisites, which are not required in the industrial context. The unit is more focused on the needs of that sector and has some wording changes.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Prepare for gas testing.	1.1 Determine type of gas/atmosphere to be tested. 1.2 Select and calibrate equipment in accordance with procedures. 1.3 Determine gas testing regime/sampling pattern required. 1.4 Identify hazards from possible atmosphere contaminants. 1.5 Implement hazard control measures, including use of appropriate personal protective equipment.
2. Test gas.	2.1 Use gas testing equipment to test gas as required. 2.2 Interpret and report readings. 2.3 Monitor gas on an ongoing basis as required. 2.4 Take required action(s) if readings are unacceptable.
3. Maintain equipment.	3.1 Clean and maintain gas testing equipment in accordance with procedures. 3.2 Inspect and fault find monitoring equipment in accordance with procedures. 3.3 Return gas testing equipment to required location and in required condition. 3.4 Maintain records of tests and results in accordance with procedures.

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Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

As may be relevant to the plant/site/process, knowledge of the following may be required:

- common chemical asphyxiants, including hydrocarbons, carbon dioxide, carbon monoxide, hydrogen cyanide, and hydrogen sulphide
- common irritants and corrosives, including chlorine, ammonia and acid bases
- common flammable gases, including acetylene, petroleum, methane, ethane, propane and butane
- narcotics
- (explosive range, upper and lower explosive limits)
- exposure standards (time weighted average, short term exposure limits, peak limitation values, examination of toxic effect at the level of a range of flammable gases)
- conditions under which atmospheres become hazardous
- units of measurement used to express concentration of atmospheric contaminants (mg/cubic m. ppm, % v/v).

Underpinning skills could include interpretation and communication of results of sampling.

Language, **literacy and numeracy requirements**

This unit requires the ability to read and interpret a meter and then communicate the conclusions.

Writing is required to the level of completing required workplace reports/forms.

Numeracy read the instrument and interpret the results as being safe/not safe and so determine the required actions.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

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- apply personal safety principles
- interpret atmospheric conditions using atmospheric monitoring equipment
- recommend appropriate action
- maintain monitoring equipment.

Consistent performance should be demonstrated. For example, look to see that:

- gathered evidence covers a range of variables, all using different types of monitoring equipment.

Assessment method and context

Assessment will occur using industrial test equipment on an industrial site/plant and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- through written assignments
- by a demonstration activity using workplaces/atmospheres with detectable but safe levels of contaminants should be used
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

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Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

Working environment may be hazardous, unpredictable, subject to time pressure, chaotic and expose responders to risk, on land or water, by day or night.

Safety information and procedures must include relevant legislation, Australian Standards, codes of practice, manufacturer instructions and organisational procedures.

Situations include

- confined spaces
- enclosed and partially enclosed spaces
- storage tanks, silos, pits, pipes, shafts, ducts, transport vehicles and ships
- testing as part of issuing a work permit
- monitoring as part of working under a work permit
- open areas
- holding the gas tester by hand
- lowering the gas tester into a space, eg on a line.

Workplace atmospheres may

- include visible and invisible hazards
- include hazardous surfaces
- range from safe to unsafe.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

All operations to which this unit applies are subject to stringent Health, Safety and Environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Tools and equipment

This competency includes use of equipment and tools such as:

- portable instruments
- radiation detectors
- sampling tubes and pumps
- oxygen level meter
- carbon monoxide detector
- combustible gas detectors.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'.

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Unit Sector(s)

Not applicable.

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MSAPMOPS400A Optimise process/plant area

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the ability to optimise the process performance of a complete plant area. It includes ensuring that production systems comply with Health, Safety and Environment (HSE) requirements, that process, plant and equipment utilisation is planned and carried out, and that problems are solved to fully meet operational needs and ensure that production of finished goods meets customer requirements.

Application of the Unit

Application of this unit

This competency requires the application of detailed operational and process knowledge, including the principles of operation of equipment, and the chemistry and/or physics and/or biology/biochemistry of changes to materials occurring during processing. It embodies a significant breadth and depth of technical knowledge and process understanding.

Assessment of this competency should ensure that the applicant can apply this knowledge to a process, and should typically rely on the applicant undertaking, or leading, a significant process improvement project.

This competency is typically performed by a senior operator, team leader or frontline manager.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit **has** prerequisites of

- MSAPMSUP390A Use structured problem solving tools
-

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Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
1. Analyse and evaluate current plant, equipment and processes.	1.1 Compare actual process, plant and equipment performance with requirements and/or historical data/records and/or design performance. 1.2 Identify abnormal or sub-optimal process, plant and equipment performance. 1.3 Identify hazards associated with the plant and equipment. 1.4 Collect and evaluate product, materials and/or process records to determine possible causes for sub-optimal performance. 1.5 Use appropriate techniques to rank possible causes from most to least probable cause.
2. Develop plan for corrective and/or optimisation action.	2.1 Analyse cause(s) to determine appropriate corrective action. 2.2 Predict the impact of a change in one unit/area on other related plant units/areas. 2.3 Predict the impact of a change on health, safety and environmental performance 2.4 Develop measurable objectives and evaluate alternatives.

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ELEMENT ELEMENT	**PERFORMANCE CRITERIA** Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
	2.5 Identify requirements to implement change. 2.6 Consult with stakeholders regarding planned changes and impacts. 2.7 Develop optimisation plan taking account of hazards identified and HSE implications and communicate to appropriate personnel. 2.8 Evaluate optimisation action to determine measures of effectiveness.
3. Coordinate corrective and/ or optimisation action plan	3.1 Coordinate all appropriate unit areas and operations in order to rectify problem causes in process, plant and equipment performance. 3.2 Initiate and/or implement all required corrective/ optimisation actions. 3.3 Communicate corrective/optimisation outcomes to all relevant personnel. 3.4 Implement procedures/systems to eliminate possible future causes. 3.5 Record and maintain log of all relevant information.
4. Develop continuous improvement strategies.	4.1 Review sources of information to identify possible factors causing sub-optimal performance. 4.2 Identify options for removing or controlling the risk of sub-optimal performance. 4.3 Assess the adequacy of existing control and quality methods and systems. 4.4 Identify opportunities to continuously improve performance. 4.5 Develop recommendations for continual improvement of process, plant and equipment effectiveness. 4.6 Consult with appropriate personnel and implement continuous improvement strategies. 4.7 Document implementation of continuous improvement strategies.

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Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Knowledge and understanding of the:

- equipment,
- processes
- systems

sufficient to

- identify hazards associated with the process
- recognise opportunities to improve and/or enhance the quality of performance of the plant.

This knowledge needs to include:

- the relevant technical theory of the plant area
- an in depth understanding across the entire plant area
- the organisation standard procedures and work instructions
- relevant regulatory requirements, including those related to OHS risk control as appropriate to process/plant area optimisation.

Competence includes the ability to:

- apply analytical skills which enable corrective or optimal conditions to prevail
- identify and control hazards by applying the hierarchy of control as part of the optimisation process
- interpret information and make appropriate process control decisions.

Competence includes the ability to distinguish between:

- optimum and marginal performance of the plant
- effective and marginal performance corrections and actions.

as is relevant to the practical operation of all major equipment/process/systems within the area.

Optimising process systems requires application of detailed operational and process knowledge to address issues such as:

- starting material quality
- yield maximisation
- throughput maximisation
- energy efficiency
- use of utilities
- labour utilisation
- overall cost
- efficient use of equipment
- reducing downtime
- minimisation of waste and rework
- improved workplace layout and workflow.

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Language, literacy and numeracy requirements

This unit requires the ability to communicate at all levels about what may be complex technical matters. It also requires the ability to evaluate complex information and sort often conflicting information into *useful* and *distracting* and to rank/prioritise information.

Writing is required to the level of reading and interpreting technical information, developing and modifying plans and procedures and interpreting relevant regulatory requirements.

Numeracy is required to the level of analysing product/process performance data, interpreting process condition information and deriving useful information from technical brochures, papers and similar. Calculation will be required to assist this and to determine priorities for optimisation plans (ie benefit/cost or other quantitative criteria)

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Competence must be demonstrated in the ability to analyse and evaluate current production performance, and develop and implement plans to optimise process systems.

While the technician is expected to take a lead technical role, and to demonstrate competence as defined above, optimisation is rarely undertaken by an individual alone and liaison with all relevant stakeholders is an expected part of this competency.

Where the assessee does not currently possess evidence of competency in *MSASUP390A Use structured problem solving tools*, it may be coassessed with this unit.

Criticalaspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the equipment/process/system be understood in depth and that the importance of critical material properties/settings/readings is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action.

Consistent performance should be demonstrated. For example, look to see that:

- non-routine problems are recognised and defined
- hazards are identified and controlled by applying the hierarchy of control

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- possible causes of complex problems are identified based on experience and the use of analytical techniques in solving the problem, including identifying variations and cause, separating single problems from multiple problems and the recognition of recurring problems
- fundamental cause of process or equipment faults is determined
- corrective/preventative actions are developed to avoid recurrence of the problem and optimise the condition of the process, plant and equipment
- product quality and uniformity are maintained.

Competence must be demonstrated in the operation of all ancillary equipment to the level required for this competency unit.

Competence also includes the ability to implement improvements within appropriate time constraints and in a manner relevant to the operation of the equipment, processes and systems.

Context of assessment

Competence in this unit may be assessed by:

- observation over time in a processing plant allowing for adequate assessment of operation under all normal and a range of abnormal conditions. Where this is not practical, additional assessment techniques must be used.
- using a suitable simulation and/or a range of case studies/scenarios
- undertaking a specific project based in the plant
- a combination of these techniques.

Method of assessment

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

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The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This unit describes the work conducted by senior operators, team leaders or front line managers who optimise process systems as part of their work function. It includes all items of equipment and unit operations which form part of the production process of a complete area.

Typical problems will require the application of detailed operational and process knowledge over the entire production/manufacturing area, including the principles of operation of the equipment and the chemistry, physics, biology and/or biochemistry of the changes to materials occurring within that area.

All operations are performed in accordance with organisation procedures, licensing requirements, legislative requirements and industrial awards and agreements.

Procedures

All operations are performed in accordance with procedures. Procedures means all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. These may include or have been prepared from/to comply with:

- industry codes of practice
- materials safety data sheets
- equipment manuals
- equipment start up, operation and shut down procedures
- calibration and maintenance schedules
- quality manuals and procedures
- organisation recording and reporting procedures
- production and laboratory schedules
- material, production and product specifications.

Data/records

Historical data/records may include:

- hazard logs
- incident reports
- maintenance records
- product non-conformance reports
- production records.

Implementing change

Requirements to implement change may include:

- changes to procedures

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- training of operators
- equipment modifications
- ensuring all HSE requirements are addressed.

Relevant/appropriate personnel

Relevant/appropriate personnel may include:

- managers
- OHS representatives and OHS committee.

Relevant information

Relevant information logged to include:

- modifications to plant or equipment
- modifications to procedures or practices.

Sources of information

Sources of information may include:

- hazard logs
- incident reports
- maintenance records
- work practices
- procedures
- industry journals
- equipment supplier information
- industry best practice information.

Health, **Safety and Environment** (**HSE**)

All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Not applicable.

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MSAPMPER200C Work in accordance with an issued permit

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor	This unit aims to ensure that people working under a permit to work understand the system, know the limitations of the permit under which they are working and comply with all the requirements of the permit. The people to whom this unit applies may be called 'permit recipients' or 'permit holders' by some organisations. Some organisations call 'permits' 'clearances' This unit covers the basic competency of working under a permit. Where entry to a confined space is required, then *MSAPMPER205B Enter confined space* is also required. The safety observer (standby person) competencies are covered by *MSAPMPER202A Observe permit work*. Atmospheric testing is covered by *MSAPMOHS217A Gas test atmospheres*. The issuing of permits is covered by *MSAPMPER300B Issue work permits*.

Application of the Unit

Application of the unit	This competency applies to persons who are required to conduct work activities under the authority of an issued permit to work and within the context and requirements of that permit. This typically applies to all work done by maintenance staff and contractors, and also to any other non-process work performed on the plant. It includes: • identifying the range and scope of work covered by the permit • checking that the right type of permit has been issued for the type of work • adequately preparing to undertake the work, including obtaining all necessary safety equipment and PPE • undertaking the work strictly in accordance with the provisions of the permit • maintaining correct housekeeping with permit activities • completing work in accordance with the permit requirements • querying or raising matters about the permit if the scope of work/nature of the tools to be used varies from that covered by the permit • handing back the permit in accordance with procedures and obtaining appropriate sign off as required.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Pre-requisite Units	

Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Apply for permit(s)	1.1. Confirm the scope and location of the work to be done 1.2. Identify the need for a work permit(s) for the work to be carried out. 1.3. Identify the type of work permit required. 1.4. Collate information required for the issue of the permit 1.5. Apply for the permit following the organisations requirements
2. Identify the scope of the permit.	2.1. Check that work to be done complies with the permit type. 2.2. Check that the scope and location of work comply with the

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ELEMENT	PERFORMANCE CRITERIA
	permit issued 2.3. Check that the hazard controls specified on the permit are consistent with the hazard analysis 2.4. Check that preparations specified on the permit have been completed 2.5. Sign onto/receive the permit.
3. Prepare for permitted work.	3.1. Maintain safe working conditions and environment by using available isolation procedures, safety equipment and emergency procedures. 3.2. Monitor plant conditions and hazards to ensure work under the permit remains safe. 3.3. Ensure that appropriate safety equipment and clothing are selected and worn as required by the permit and relevant procedures. 3.4. Inspect work area to ensure safety and compliance with permit requirements and procedures.
4. Work in accordance with an issued permit.	4.1. Use required hazard reduction/control measures. 4.2. Comply with requirements of the permit including safety observer if required. 4.3. Display issued permit on work site as required 4.4. Ensure compliance with scope, location and timeframe specified in the permit or seek re-authorisation as required 4.5. Suspend job and make work site safe before leaving job. 4.6. Formally seek and receive authorised extensions to the permit when required. 4.7. Give end of day status report to permit issuer.
5. Complete permit(s) to work.	5.1. Obtain new permit(s) or have existing permit(s) revalidated before work is recommenced. 5.2. Check the work conducted against the issued permit(s) to ensure that all the nominated work requirements have been satisfied. 5.3. Monitor general housekeeping to ensure that the site has been left in a clean and safe condition. 5.4. Ensure personal lockouts/tag outs/isolations are removed in accordance with procedures 5.5. Communicate status of the work conducted and the results of the permit to relevant personnel. 5.6. Complete documentation as required and have permit signed off when job is completed.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills:
Competence includes the ability to: • access and interpret information relevant to specific tasks (eg labels, MSDSs hazchem signs) • identify changes to conditions which may lead to the permit being revoked before the job is completed • describe and/or explain hazards associated with tasks covered by the permit, types of tests required for the issue of work permits - the types of tests to include, atmospheric/oxygen/breathability, flammability/explosivity, toxicity/TWA, temperature, humidity • the impact of the regulatory framework and organisation procedures under which the permit operates upon the particular job(s) requiring the permit. Language, literacy and numeracy requirements • This unit may require the ability to read and correctly interpret complex P&ID's; speak clearly and unambiguously in English; and to explain, describe and verify sometimes complex needs and issues. • Writing is required to the level of completing workplace forms. • Numeracy is required to the level of being able to correctly differentiate between high and low pressures and temperatures, voltages or masses.
Required knowledge:
Knowledge and understanding of the relevant OHS and environmental requirements, in particular those relating to various situations requiring work permits, with an ability to implement the requirements in a manner that is relevant to the job. Knowledge of the organisation's standard procedures and work instructions and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and in a manner relevant to the job. Sufficient knowledge of all types of permits is required to ensure work is not carried out without the correct permit. This includes recognizing hot work and confined spaces. Knowledge of regulatory frameworks should include: • licence requirements for the job, • company policy and procedures • permit control systems

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Evidence Guide

EVIDENCE GUIDE
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Overview of assessment	Assessment of this unit should demonstrate competence on actual plant and equipment in a work environment The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Simulation may be required to allow for assessment of parts of this unit. Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to distinguish between situations requiring the types of permit and to list the major requirements of each type of permit. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster. It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to: • provide reasons for a permit system • recognise the importance of different work permits • comply with permit conditions including the wearing of appropriate personal protective equipment (PPE) • take appropriate action to resolve faults or report faults to appropriate personnel • explain and implement incident response procedures. Consistent performance should be demonstrated, e.g. look to see that: • communications are timely and effective • deviations from permit conditions are recognised, reported, corrected and re-authorization arranged • actions specified in the permit/standard procedures are carried out • all safety procedures are followed.
Context of and specific resources	A holistic approach should be taken to the assessment.

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EVIDENCE GUIDE	
for assessment	Assessment will occur over a range of situations which may include disruptions to normal, smooth operation. Competence in this unit may be assessed: • on a plant/in the work place/a work situation • by using a suitable simulation based on the actual plant and including walk throughs of the relevant competency components and/or a range of case studies/scenarios and role plays • by questioning and using 'what if' scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant • through a combination of these techniques. These aspects may be best assessed using a range of simulations/scenarios/case studies and 'what ifs' as the stimulus with a walk through forming part of the response. These assessment activities should cover a range of problems, including new or unusual situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. While oral assessments may be appropriate there needs to be a written record for audit purposes. This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions which will be used to probe the reasoning behind the observable actions will also be required to the extent that they form part of the assessment method.

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EVIDENCE GUIDE	
	Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.
Method of assessment	Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed and the safety standard required.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version/version specified by the local regulatory authority must be used.
Context	This unit typically applies to all work done by maintenance staff and contractors, and also to any other non-process work performed on the plant. All work is to be conducted using the appropriate personal protective equipment. The types of work permits may include: • cold work/general permit to work • excavation • hot work • vehicle entry • minor repairs • working at heights • other special permits. Note that entry to a confined space is covered by *MSAPMPER205C Enter confined space*. The Australian Standard (*AS2865*) definition given for

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RANGE STATEMENT	
	confined space entry is used in this Training Package. All operations are performed in accordance with standard operating procedures (SOPs). Checks to ensure a workplace is safe may include: • process isolations complete • mechanical and electrical isolations in place • atmospheric testing complete and atmosphere safe. If it is not safe and cannot be made safe, then appropriate measures are implemented as per SOPs. • relevant personnel informed of work and agree that it is safe and appropriate to proceed.
Procedures	All operations are performed in accordance with procedures. Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. These may include: • legislation/codes • OHS legislation, codes of practice and guidance material • EPA • National and Australian standards • licence and certification requirements • internal permit control system. • process isolations complete • mechanical and electrical isolations in place • atmospheric testing complete and atmosphere safe. If it is not safe and cannot be made safe, then appropriate measures are implemented as per SOPs. • relevant personnel informed of work and agree that it is safe and appropriate to proceed.
Information required for permit	Information required for a permit includes: • work description • tools to be used • process/methods of work/SOPs • MSDSs • JHA/JSA/SWMSs
Tools and equipment	This competency includes use of safety equipment and tools such as: • eye protection (eg goggles) • ear protection • gloves

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RANGE STATEMENT	
	• clothing • respiratory protection • helmets • safety footwear.
Hazards	Typical hazards include: • heat, smoke, dust or other atmospheric hazards • sharp edges, protrusions or obstructions • limited head spaces or overhangs • equipment or product mass • slippery surfaces, spills or leaks • noise, rotational equipment or vibration.
Display issued permit	Display issued permit on work site means to have the permit on the worksite and displayed/ready to be shown as required by the site/job requirements and may include: • displaying it in a provided mounting • having it accessible in a folder which is on the work site • having it folded in overall pockets in a manner which allows it to be readily shown on request.
Problems	'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'. Typical problems may include: • provision of the wrong permit • incorrect information being supplied with the permit • errors being made in the understanding of permit data • failure to correctly correspond to the requirements of the permit • failure to seek clarification when anomalies occur.
Variables	Key variables to be monitored include: • sites under which permit activities must be applied • type of permit to be executed • types of tools and equipment to be employed • size of work team • scope and urgency of work.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

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Unit Sector(s)

Unit Sector	

Competency field

Competency Field	

Co-requisite units

Co-requisite Units		

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MSAPMPER201A Monitor and control work permits

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the monitoring of the operational conditions in which a permit to work has been issued, and the required activities and functions associated with the production/process of chemical, hydrocarbons, oil, and other process manufactured products. This role may be carried out by the standby person or other appropriately qualified persons.

While this competency carries with it high levels of responsibility the role is usually prescribed by the permit process and may be exercised by any competent operator.

Application of the Unit

Application of this unit

This competency applies to personnel who are required to monitor a work situation in which the activity is conducted under the auspices of a permit to work. During this activity the individual will monitor the work situation for conformance to the permit and will immediately intervene if the parameters of the permit are exceeded or work proceeds outside the boundaries set by the permit. It includes:

- identifying and understanding the requirements of the permit
- monitoring any changes in the conditions of work under the permit
- ensuring work sequences are followed as permitted by the permit
- constantly inspecting the site for changed work or site circumstances
- reporting any non-conformance with permit conditions
- withdrawing or causing work to cease outside permit conditions
- confirming conformance with permit conditions and reporting conclusion of activities.
-

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	**PERFORMANCE CRITERIA**
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	**PERFORMANCE CRITERIA**
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Identify and monitor permit conditions.	1.1 Identify permit requirements. 1.2 Monitor permit holder and conditions to ensure that the work being conducted conforms to the issued permit requirements. 1.3 Identify and communicate changes in the operating conditions or requirements of the permit to permit holders to ensure they are kept aware of any hazards.
2. Monitor work permit systems.	2.1 Control work activities to comply with the organisation or site work permit system and safety procedures. 2.2 Check and verify the permit holder's knowledge of the issued permit and its requirements before allowing any repair or maintenance work to be

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	undertaken on the production/process equipment. 2.3 Undertake site inspections to ensure that the work to be undertaken is in sequence and completed in a safe and coordinated manner. 2.4 Identify hazards, and confirm with those undertaking the permitted work that control measures, as defined in the permit are established.
3. Identify and action non-compliance.	3.1 Identify conditions of active permits. 3.2 Report and record incidents of non-compliance according to procedures. 3.3 Take corrective action upon incidences of non-compliance with permit conditions through the withdrawal or suspension of the issued permit.
4. Confirm compliance with permit.	4.1 Complete checklists in accordance with standard procedures. 4.2 Document and communicate findings to appropriate personnel.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Knowledge and understanding of permit requirements sufficient to distinguish between situations requiring permits and then implementing the appropriate corrective action where required.

Knowledge of the organisation standard procedures and work instructions and relevant regulatory requirements, along with the ability to implement them within appropriate time constraints and in a manner relevant to the job.

Competence includes the ability toapply and/or explain:

- an awareness of hazards associated with the permit
- Australian Standard AS2865 - Safe working in a confined space and relevant legislation
- identification of container and goods coding and HAZCHEM markings
- production workflow sequences and requirements for working in confined spaces
- focus of operation of work systems and equipment

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- application of relevant agreements, codes of practice and other legislative requirements
- hazards of the materials and process and appropriate hazard control procedures
- identification and correct use of equipment, processes and procedures
- planning own work including predicting consequences and identifying improvements; as is relevant to the practical completion of the job.

Demonstration of competence in this unit should include knowledge of the following as appropriate to the process:

- blank/blind lists and P&IDs
- tagging procedures
- isolation procedures
- incident response procedures, including evacuation
- gas types, toxicity and explosivity and limits of each
- oxygen levels
- area knowledge including plant and processes
- permit types and limitations
- product tolerances and specifications
- static electricity and cathodic protection
- environmental hazards
- hot work protective measures
- columns
- vessels
- fire fighting equipment
- blinds/blanks
- pumps
- compressors
- prime movers
- valves.

An understanding of alarm and communication systems is required.

The regulatory framework to include:

- OHS
- EPA
- OHS authorities and NOHSC
- licence and certification requirements
- company policy and permit control systems.

Language, **literacy and numeracy requirements**

This unit requires the ability to:

- read and correctly interpret complex P&IDs
- speak clearly and unambiguously in English
- explain, describe and verify sometimes complex needs and issues.

Writing is required to the level of completing workplace forms and producing reports.

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Numeracy is required to the level of being able to correctly differentiate between high and low pressures and temperatures, voltages or masses.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Assessment will occur using industrial equipment and will be undertaken in a work like environment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Competence must be demonstrated in the ability to distinguish between situations requiring the major types of permit and to list the major requirements of each type of permit. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- provide reasons for a permit system
- recognise the importance of different work permits
- comply with permit conditions including the wearing of appropriate personal protective equipment (PPE)
- take appropriate action to resolve faults or report faults to appropriate personnel
- explain and implement incident response procedures.

Consistent performance should be demonstrated. For example, look to see that:

- communications are timely and effective
- deviations from permit conditions are recognised, reported, corrected and re-authorisation arranged
- action specified in the permit/standard procedures is carried out
- all safety procedures are followed.

Assessment method and context

The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which may include disruptions to normal, smooth operation.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Competence in this unit may be assessed:

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- on an operating plant over an extended period
- by using a suitable simulation based on the actual plant and including walk throughs of the relevant competency components and/or a range of case studies/scenarios and role plays
- by questioning and using 'what if' scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant
- through a combination of these techniques.

These aspects may be best assessed using a range of simulations/scenarios/case studies and 'what ifs' as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new or unusual situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions which will be used to probe the reasoning behind the observable actions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

The application of this unit is defined by the level and area of responsibility.

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Legislative and site specific safety procedures and/or requirements, including in hazard identification, assessment and application of control measures, must be met.

Compliance is required with:

legislation/codes:

- OHS
- EPA
- OHS authorities and NOHSC
- licence and certification requirements
- other relevant standards
- workplace specific permit control system.

Monitor means continual personnel presence to observe conditions of the workplace and work practices to ensure compliance with permit conditions. This may include:

- supervision/monitoring of contractors
- verification of permits, licences, tests
- document control
- compliance with legislation/codes.

Corrective action may include:

- ceasing job
- leaving the job site safe if it is safe and practical to do so
- report reason for ceasing job and request new permit when safe.

Indicative functions include:

- supervision/monitoring of contractors
- verification of permits, licences, tests
- document control
- compliance with legislation/codes.

This unit may be applied to either an individual or team related context within the workplace.

Procedures

All operations are performed in accordance with procedures.

Procedures cover all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. These may include:

- legislation/codes
- OHS legislation, codes of practice and guidance material
- EPA
- National and Australian standards
- licence and certification requirements
- internal permit control system.
- process isolations complete
- mechanical and electrical isolations in place

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- atmospheric testing complete and atmosphere safe. If it is not safe and cannot be made safe, then appropriate measures are implemented as per SOPs
- relevant personnel informed of work and agree that it is safe and appropriate to proceed.

Tools and equipment

This competency includes use of equipment and tools such as:

- danger tags and lockouts
- out of service tags
- blinds/blanks
- blind/blank list
- gas testers and monitors
- lights
- ladders
- cathodic protection bonds
- barricades
- signage
- communications equipment
- process and equipment drawings.

The types of work permits may include:

- evacuation
- clearance
- hot work
- vehicle entry
- confined space
- minor repairs
- working at heights
- other special permits.

Safety equipment may include:

- eye protection (eg goggles)
- ear protection
- gloves
- clothing
- respirators and masks
- helmets.

Hazards

Typical hazards include:

- heat, smoke, dust or other atmospheric hazards
- sharp edges, protrusions or obstructions
- limited head spaces or overhangs
- equipment or product mass
- slippery surfaces, spills or leaks

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- noise, rotational equipment or vibration.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'. Typical process and product problems may include:

- provision of the wrong permit
- incorrect information being supplied with the permit
- errors being made in the understanding of permit data
- failure to correctly correspond to the requirements of the permit
- failure to seek clarification when anomalies occur.

Variables

Key variables to be monitored include:

- sites under which permit activities must be applied
- type of permit to be executed
- types of tools and equipment to be employed
- size of work team
- scope and urgency of work

Health, **Safety and Environment** (**HSE**)

All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Not applicable.

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MSAPMPER202A Observe permit work

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor	This competency covers the safety observer role for permits requiring a safety observer. It may be undertaken by a member of the work team or an operator may perform this role.

Application of the Unit

Application of the unit	This competency covers the knowledge and skills required for a safety observer (sometimes called a hole watcher or a fire watch). Safety observers can stop permit work, but do not have the authority to restart it. It includes: • understanding the permit system and the individual permit's requirements • observing work being performed • noting any change in conditions and taking required action.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Pre-requisite Units		

Employability Skills Information

Employability Skills	This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for the job	1.1. Check the permit(s) issues are appropriate and sufficient for the work to be done 1.2. Prepare a rescue/incident response plan in accordance with procedures 1.3. Check plan is workable within the approved job procedures and issued permit(s) 1.4. Request revision of job procedures and or permit(s) to ensure rescue/incident response plan is practical.
2. Control the permit site.	2.1. Interpret the hazard controls required by the permit(s) 2.2. Check all hazard controls are complied with all the time 2.3. Maintain constant communication with workers 2.4. Control entry to and exit from the work site in accordance with the requirements of the permit(s) 2.5. Monitor the environment of the work site and adjacent areas 2.6. Monitor scope and location of work as defined by the permit(s) 2.7. Withdraw permit(s) and shut down work site if conditions vary from those required by the permit.
3. Take appropriate action for potential incident.	3.1. Ensure all required first response equipment is in the location specified by the permit(s) and is in working condition 3.2. Ensure all required monitoring is carried out as required by permit(s) 3.3. Withdraw permit and shut down work site in the event of an alarm or monitoring failure 3.4. Raise the alarm in the event of an incident 3.5. Implement rescue/incident response plan as required by procedures.
4. Complete safety observer role.	4.1. Hand over to oncoming safety observer before leaving role 4.2. Complete all required documentation and reports

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills:
This competency includes the following skills: • observation • decision making • communication • leadership
Required knowledge:
Competence in this unit includes the following knowledge: • hazards associated with the job and the plant • hazard analysis and control • HSE legislative requirements related to plant • incident response procedures • permit principles and procedures.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should demonstrate competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may

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EVIDENCE GUIDE	
	also include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to specify the requirements and then select the best solution to meet the necessary and desirable requirements.
Context of and specific resources for assessment	Assessment will require access to a plant or workplace over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

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RANGE STATEMENT	
Context	This competency covers any work permits which requires a safety observer. Permits are called clearances by some organisations. Typical types of permit requiring a safety observer include: • excavation • hot work • confined space • other relevant permits. Requirements identified on the permit may include testing of atmospheric conditions, ventilation and control measures such as isolation, barriers, tag out/lockout signs, communications, incident response. A 'competent person' is a person who has, through a combination of training, education or experience, acquired knowledge and skills enabling that person to correctly perform a specified task. Safety structures and controls may include automatic plant shut down buttons, cords/lanyards, alarms, barriers, guards, earth leakage devices, tag out/lock out procedures, warning lights.
Incident response	The required incident response may include: • first response to fire • some initial rescues • first aid/CPR • other responses These responses are not included in this units of competency but are the subject of their own unit of competency.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit Sector	

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Competency field

Competency Field	

Co-requisite units

Co-requisite Units	*MSAPMPER200C*	*Work in accordance with an issued permit*

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MSAPMPER300C Issue work permits

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor	This competency unit addresses the need for personnel who issue work permits to understand the permit system, know the limitations of each permit and make decisions regarding the need for and correct use of each permit. This competency unit includes the issue of any and all permits. It applies to the issuing of permits covering a single plant or plant area such as might be an operators scope of responsibility.

Application of the Unit

Application of the unit	This competency applies to personnel who are required to issues appropriate permits to work to persons conducting a variety of activities in workplace environments in which hazards exist or specific procedures need to followed and monitored to protect the safety of personnel and the integrity of plant or process. It includes: • reviewing the conditions under which the work will be undertaken • examining the site to determining the hazards and safety requirements applicable to the site • ensuring the appropriate permit(s) is (are) selected depending on the organisations procedures • determining the appropriate conditions for the permit(s) • raising, authorising and issuing the necessary permit(s) • monitoring compliance with the permit conditions • reporting any indiscretions or violations of permit conditions and where necessary revoking permits • managing the permit process especially in shift hand overs or extensions to work activities • withdrawing and signing off work permits on completion of the work and verification that the requirements of the permit have been complied with.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Pre-requisite Units	*RIIRIS201A*	*Conduct local risk control*

Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify need for work permit	1.1. Understand work permit system. 1.2. Identify and confirm with appropriate personnel the need for work permit. 1.3. Identify the correct permit for each situation.
2. Prepare work site for authorised work	2.1. Undertake an inspection of the work site. 2.2. Identify OHS and environmental requirements. 2.3. Conduct hazard identification and risk assessment. 2.4. Ensure work site is prepared in accordance specified work permit conditions. 2.5. Check permit conditions and report to appropriate personnel. 2.6. Identify need for and carry out testing in accordance with

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ELEMENT	PERFORMANCE CRITERIA
	standard operating procedures.
3. Raise and issue work permits	3.1. Ensure conditions are documented on permit. 3.2. Ensure appropriate testing carried out and results documented on permit. 3.3. Determine an appropriate validity period 3.4. Check that permit conditions are met (ie validate permit). 3.5. Complete and authorise permit. 3.6. Ensure recipient(s) is advised of and agrees to abide by the requirements of the permit(s). 3.7. Ensure recipient(s) signs permit(s).
4. Monitor work for compliance	4.1. Undertake regular site inspections. 4.2. Monitor conditions and work progress and respond appropriately to changing conditions and circumstances. 4.3. Ensure permit currency and revalidate as required. 4.4. Ensure permit is displayed in prominent position. 4.5. Identify and, act on incidences of non-compliance and report promptly to relevant personnel. 4.6. Report any issues which arise with regard to work under the permit in accordance with procedures.
5. Receive end of day report	5.1. Receive end of day report from permit recipients 5.2. Confirm job progress and status. 5.3. Revalidate/arrange for revalidation of permit as required 5.4. Confirm work area has been left safe 5.5. Handover ongoing permits and status of suspended permits to oncoming shift.
6. Close work permit	6.1. Inspect job status. 6.2. Check that work undertaken satisfies permit conditions. 6.3. Ensure that work site is ready for a safe return to working conditions. 6.4. Check required returns to work status have been completed. 6.5. Sign off documentation and close permit in accordance with standard operating procedures. 6.6. Communicate work site and process status to relevant personnel.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills:

Competence includes the ability to select, apply and/or explain:
• appropriate PPE
• Australian Standard AS2865 -Confined Space
• Australian Standard AS1674.1 Safety in welding and allied processes (covers all hotn work)
• types of permits and what they cover
• hazards associated with each type of permit
• permit control system
• hazards of the area for which permit is being issued
• hazards that may be created by the interactions of the permit, the process and the plant area
• identification of container and goods coding and HAZCHEM markings
• production workflow sequences
• focus of operation of work systems and equipment
• application of relevant agreements, codes of practice and other legislative requirements
• methods of hazard analysis
• hazards of the materials and process and appropriate hazard control procedures, including hierarchy of control
• identification and correct use of equipment, processes and procedures
• selecting appropriate tests and knowing what the tests are for
• conducting and interpreting tests for contaminant gases and other hazards
• testing - types of testing may include:
  • atmospheric, including explosivity, O_2
  • flammability
  • toxicity
  • temperature
  • humidity
  • combustibles' oxygen, enriched or reduced
• estimating ventilation required for making vessels safe (eg for confined space entry, hot work)y including applying the formula for factors such as:
  • space turnover rate,
  • number of turnovers
• challenging/checking performance of monitoring and testing equipment against a standard sample
• supervision/monitoring of contractors.

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REQUIRED SKILLS AND KNOWLEDGE
Some sources of underpinning OHS knowledge include appropriate OHS and Dangerous Goods legislation, Australian Standards and Safework Australia, State or Territory codes such as: • NOHSC:1010 - National Standard for Plant • AS4024.1 Safeguarding of machinery - general principles • NOHSC: 1003 National exposure standards for atmospheric contaminants in the occupational environment. The regulatory framework to include: • OHS • EPA • OHS authorities and Safework Australia • licence and certification requirements • company policy and permit control systems • other relevant standards. This unit requires the ability to: • read and correctly interpret complex P&IDs • speak clearly and unambiguously in English • explain, describe and verify sometimes complex needs and issues.
Required knowledge:
Knowledge and understanding of the materials, equipment and process sufficient to recognise situations requiring different types of work permits and then implement the appropriate action. Knowledge of the organisation's standard procedures and work instructions and relevant regulatory requirements under which permit systems operate, along with the ability to implement them within appropriate time constraints and in a manner relevant to the job. Knowledge of the relevant requirements under AS2865. Writing is required to the level of completing workplace forms and producing reports. Numeracy is required to the level of being able to correctly differentiate between high and low pressures and temperatures, voltages or masses.

Evidence Guide

EVIDENCE GUIDE
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and

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EVIDENCE GUIDE	
Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should demonstrate competence on actual plant and equipment in a work environment.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to distinguish between situations requiring the major types of permits and to list the major requirements of each type of permit. It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to: • correctly identify situations requiring work permits • identify and apply legislative requirements, relevant standards and codes of practice (which may be incorporated in the organisation's procedures) to the issuing of work permits • list the requirements of each type of permit • plan own work process within workplace procedures and explain the reasons for the steps in the process. Consistent performance should be demonstrated. For example, look to see that: • correct permit issued • hazards are identified and controlled in the permit by applying the hierarchy of control • required personal protective equipment (PPE) is specified • problems are anticipated • problems are efficiently resolved. These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new or unusual situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources	Assessors must be satisfied that the person can

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EVIDENCE GUIDE	
for assessment	consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. A holistic approach should be taken to the assessment. Competence in this unit may be assessed: • by use of a suitable simulation and/or a range of case studies/scenarios. Simulations should be based on the actual plant and will include walk throughs of the relevant competency components • through questioning and the use of "what if" scenarios both on the plant and off the plant. • by a combination of these techniques. In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions. Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed. This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.
Method of assessment	Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the

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EVIDENCE GUIDE	
	work being performedand the safety standard required.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version/version specified by the local regulatory authority must be used.
Context	This competency covers the issue of any and all work permits. Permits are called clearances by some organisations. The types of permit include: • cold work • excavation • vehicle entry • minor repairs • working at heights • hot work • confined space • electrical • increased hazard • other relevant permits. Requirements identified on the permit may include testing of atmospheric conditions, ventilation and control measures such as isolation, barriers, tag out/lockout signs, communications, incident response. A 'competent person' is a person who has, through a combination of training, education or experience, acquired knowledge and skills enabling that person to correctly perform a specified task. Safety structures and controls may include automatic plant shut down buttons, cords/lanyards, alarms, barriers, guards, earth leakage devices, tag out/lock out procedures, warning lights.
The work permit system	The work permit system includes: • types of permits

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RANGE STATEMENT	
	• legislative/regulatory/standards framework • roles and responsibilities of parties under the permit system • equipment which can and cannot be used for types of permit • alternative ways of conducting a job
Confined space	The Australian standard (AS2865-2009) definition given for confined space is used in this Training Package, i.e.: 'An enclosed or partially enclosed space that is not intended or designed primarily for human occupancy, within which there is a risk of one or more of the following: (a) An oxygen concentration outside the safe oxygen range. (b) A concentration of airborne contaminant that may cause impairment, loss of consciousness or asphyxiation. (c) A concentration of flammable airborne contaminant that may cause injury from fire or explosion. (d) Engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning.'
Procedures	All operations are performed in accordance with procedures. Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards. These may include: • OHS • EPA • OHS authorities and AASCC • Australian Standards • licence requirements • company policy and permit control systems • other relevant standards.
Preparation	Preparation of work site includes: • mechanical, electrical and other energy sources, and process isolations • de-energising all sources of energy/pressure • purging of lines • lock out/tag out procedures • blinding/blanking lines.
Tools and equipment	This competency includes use of equipment and tools such as: • writing instruments • computers and printers • calculators

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RANGE STATEMENT	
	• testing equipment.
Hazards	Typical hazards include: • unsafe conditions developing through failure to conform with the provisions of the permit • injuries to personnel • equipment failures • releases of toxic or noxious substances.
Returns to work status	Returns to work status may include: • de-isolation • removal of lockouts/tag outs • removal of drain covers • etc.
Problems	Anticipate and solve problems means resolve a wide range of routine and non-routine problems, using product and process knowledge to develop solutions to problems which do not have a known solution/ a solution recorded in the procedures. Typical process and product problems may include: • selection of the wrong permit • incorrect information being supplied with the permit • errors being made in the completion of permit data • failure to correctly correspond to the requirements of the permit • failure to seek clarification when anomalies occur.
Variables	Key variables to be monitored include: • types of permits being issued • permit issuing procedures • permit protocols for extended work activities beyond the end of shift • permit hand-over procedures.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

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Unit Sector(s)

Unit Sector	

Competency field

Competency Field	

Co-requisite units

Co-requisite Units		

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MSAPMPER400A Coordinate permit process

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor	This competency covers the issuing and auditing of any and all permits across multiple plant areas or an entire site. It is typically undertaken by a senior process technician. This may be a routine job, a role in part of a job or a temporary role in a shut down or similar.

Application of the Unit

Application of the unit	This competency covers both the issuing of permits directly and also the coordination of permits issued by others. It focuses on potential conflicts between work being undertaken as well as checking that the permit system is being used correctly. It includes: • coordinating permits and the permit system • plant preparations and isolations and the preparation system • live auditing of permit issuers, permit recipients/holders • auditing of permit paper trails • overseeing and checking test regimes • quality checking of risk assessment • coordinating the issue of additional hazard control resources

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Pre-requisite Units	*MSAPMPER300C*	*Issue work permits*

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Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess planned work for conflicts.	1.1. Identify all planned work for a time period 1.2. Determine the scope and HSE impacts of each planned job 1.3. Confirm hazard analysis and controls for each planned job 1.4. Compare hazard profiles for each planned job 1.5. Identify conflicts between planned jobs 1.6. Negotiate a solution between conflicts 1.7. Communicate results of negotiations to relevant stakeholders.
2. Issue required permits.	2.1. List those jobs which will be allowed to proceed in the time period 2.2. Confirm hazard controls required for these jobs 2.3. Identify jobs which have impacts across plant areas 2.4. Ensure controls and communications are adequate 2.5. Issue/cause to be issued required permits 2.6. Report as required by procedures.
3. Audit live permits.	3.1. Audit plant preparations 3.2. Audit permit issuing process 3.3. Check appropriate controls have been specified 3.4. Audit handover/sign on process 3.5. Audit work in progress for conformance to permit conditions 3.6. Audit work completion and hand back/closing process 3.7. Audit deisolation and return to work preparations 3.8. Take immediate and appropriate action on any problems found 3.9. Report on audit as required by procedures.

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ELEMENT	PERFORMANCE CRITERIA
4. Audit past permits.	4.1. Obtain relevant paper work 4.2. Check for conformance to procedures 4.3. Check for appropriateness of specified hazard controls 4.4. Identify any non-conformance 4.5. Identify systemic non-conformances 4.6. Take any immediate action which is appropriate 4.7. Report on audit as required by procedures.
5. Analyse audit findings.	5.1. Identify improvements to the permit system 5.2. Identify improvements to the implementation of the permit system 5.3. Suggest improvements to the permit system as appropriate 5.4. Suggests improvements to hazard analysis processes 5.5. Suggest improvements to the plant preparation/return to operations processes 5.6. Suggest improvements to hazard controls 5.7. Suggest training required as appropriate

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills:
This competency includes the following skills: • analysis • decision making • communication • priortisation • leadership • negotiation • problem solving
Required knowledge:
Competence in this unit includes the following knowledge: • the operations of the plant and each major unit in it

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REQUIRED SKILLS AND KNOWLEDGE
• hazards associated with all plant materials, processes and process conditions • hazard analysis and control • HSE legislative requirements related to plant • plant preparation procedures • auditing principles

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should demonstrate competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to specify the requirements and then select the best solution to meet the necessary and desirable requirements.
Context of and specific resources for	Assessment will require access to an operating plant over an extended period of time, or a suitable method

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EVIDENCE GUIDE	
assessment	of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This competency covers the issue of any and all work permits. Permits are called clearances by some organisations. The types of permit include: • cold work • excavation • vehicle entry • minor repairs • working at heights • hot work • confined space • electrical • increased hazard • other relevant permits. Requirements identified on the permit may include testing of atmospheric conditions, ventilation and control measures such as isolation, barriers, tag

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RANGE STATEMENT	
	out/lockout signs, communications, incident response. A 'competent person' is a person who has, through a combination of training, education or experience, acquired knowledge and skills enabling that person to correctly perform a specified task. Safety structures and controls may include automatic plant shut down buttons, cords/lanyards, alarms, barriers, guards, earth leakage devices, tag out/lock out procedures, warning lights.
Live permits	Live permits applies to work currently being done
Past permits	Past permits applies to any permit which has been handed back/closed.
Audit permits	Auditing of permits includes all of: • selecting an individual permit and following it through • spot checking any aspect of permits • intensively checking one aspect of the process with all permits on issue
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit Sector	

Competency field

Competency Field	

Co-requisite units

Co-requisite Units		

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MSAPMSUP200A Achieve work outcomes

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

The competency covers the ability to identify and implement actions to achieve workplace targets and to suggest improvements. This unit applies to all employees who may work either individually or as part of a team.

This unit does not cover maximisation of process/equipment efficiencies undertaken as part of the normal work role, which is covered in the relevant unit of competency.

Application of the Unit

Application of this unit

This competency is typically performed by an operator, perhaps working as part of a team, in achieving required work outcomes of quality and productivity within the scope of their job. They would be liaising and cooperating with other members of the work place.

The operator will:

- understand the production process
- recognise production inefficiencies within their area
- participate in and implement ways of improving production efficiencies.
-

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit of competency has **no** prerequisites.

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Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Identify raw material components and their application in production.	1.1 Outline the properties of materials/components used in the production process. 1.2 Describe or construct a flow chart of the production process relevant to the area/plant. 1.3 Outline parts of the production process where extra care and attention are required. 1.4 Identify the safety and environmental requirements for relevant materials and processes.
2. Identify production targets in work area.	2.1 Identify production targets for work area and work roles taking account of OHS requirements. 2.2 Identify techniques used to measure production performance against workplace targets/standards.
3. Recognise key areas effecting production efficiencies.	3.1 Explain importance of reducing wastage of resources. 3.2 Identify potential sources of wastage/production inefficiencies. 3.3 Outline possible approaches to minimise wastage/ inefficiencies. 3.4 Demonstrate effective techniques to ensure wastage/

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	production minimisation within scope of job.
4. Implement actions to achieve production targets.	4.1 Identify the role of the individual and/or the team in achieving production targets. 4.2 Carry out required role to achieve production targets.
5. Participate in an improvement activity in accordance with organisation procedures.	5.1 Explain organisation procedures for identifying and suggesting improvements. 5.2 Explain the use of information in developing improvements related to work area. 5.3 Investigate a problem. 5.4 Suggest options for causes of problem. 5.5 Suggest options for improvement. 5.6 Discuss a proposed improvement with appropriate people.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Knowledge and understanding of the process, normal operating parameters and product quality to recognise non-standard situations. Knowledge of the relevant OHS and environmental requirements is required along with an ability to implement them in a manner which is relevant to determining the corrective action and provision of recommendations.

Thorough knowledge of organisation standard operating procedures is required. Some appreciation of business goals is required as a basis for decision-making and action.

Competence to include the ability toapply and explainsufficient for the identification and implementation of ways to maximise production efficiencies:

- relevant equipment and operational processes
- hazards associated with the process
- application of the hierarchy of control in controlling the hazards
- the safety implications of improving efficiencies
- organisation policies and procedures
- organisation goals, targets and measures
- organisation OHS, quality, and environmental requirements

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- individual and team roles and responsibilities in achieving safety, quality and environmental targets
- principles of decision making strategies and techniques
- organisation information systems and data collation
- industry codes and standards.

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret typical product specifications, job sheets and material labels as provided to operators.

Writing is required to the level of completing workplace forms.

Basic numeracy is also required, e.g. to interpret quality data and graphs.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Consistent performance should be demonstrated. Critical aspects of competency include:

- hazards are identified and controlled
- production targets and measures are identified
- wastage and production inefficiencies for the functional area are identified
- work is conducted in a manner to minimise wastage/inefficiencies
- organisation procedures for identifying and suggesting improvements are followed
- effective participation in process improvement teams/activities is demonstrated.

Assessment method and context

Assessment will occur on-the-job or in a simulated workplace.

Competence in this unit may be assessed:

- in a situation allowing the generation of evidence of the ability to respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

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In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version will be used.

Context

This competency applies to all work environments and sectors within the industries.

This competency unit applies to a wide range of processes and equipment. In large plants with multiple processes, it may apply to more than one process if those processes interact with each other. It applies to all operators across all functions.

Properties of materials/components

Properties of materials/components includes:

- physical and chemical properties relevant to the process and the product
- hazardous properties.

Production targets/performance

Production targets/performance may include a range of factors where relevant to the job such as:

- volume
- quality

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- cost.

Wastage

Wastage may include:

- overproduction.
- waiting
- transporting
- inappropriate processing
- unnecessary inventory
- unnecessary/excess motion
- defects (quality).

Sources of information

Sources of information may include:

- yearly, monthly, weekly and daily production targets
- business objectives and goals
- control charts, run charts and graphs
- organisation manuals and procedures
- equipment specifications.

Inefficiencies

Sources of process inefficiencies and wastage may include:

- equipment downtime
- spillages
- leaks
- contamination
- raw material quality
- utilities usage
- productivity issues
- incorrect work allocation/priorities/planning
- incorrect processes/procedures.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This unit of competency includes use of equipment and tools such as:

- workplace forms and logs
- communication equipment for gathering and exchanging information such as telephones, two way radios, fax machines.

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Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'.

Typical problems include:

- non-routine process and quality problems
- equipment selection, availability and failure
- teamwork and work allocation problems
- safety and emergency situations and incidents.
-

Unit Sector(s)

Not applicable.

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MSAPMSUP210A Process and record information

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit of competency covers the provision and processing of all relevant information by responding to the information requirements of the plant including the completion of all workplace documents and clearly and concisely providing relevant information to others.

Application of the Unit

Application of this unit

This competency applies to operators who are required to provide information, orally or in writing in a one on one situation or as part of a group discussion.

The operator would:

- complete appropriate workplace forms
- provide appropriate workplace and technical information within their area of expertise
- identify routine information requirements seeking clarification where necessary.
-

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Access information.	1.1 Identify the need for information. 1.2 Request appropriate information. 1.3 Access information in accordance with procedures. 1.4 Comply with security procedures in accessing appropriate information.
2. Provide appropriate information.	2.1 Deal with enquiries promptly and courteously. 2.2 Establish details of enquiry by questioning and summarising. 2.3 Provide appropriate information relevant to enquirer's request. 2.4 Organise information clearly, concisely and logically. 2.5 Provide information in a form that is readily understood by others. 2.6 Provide information in a timely manner. 2.7 Redirect enquiries to relevant personnel for resolution where outside the operator's area of responsibility.
3. Give and follow routine instructions.	3.1 Give accurate, clear and concise instructions that are consistent with the skills of the receiver. 3.2 Ensure that interaction with others is efficient, effective, responsive, courteous and supportive. 3.3 Confirm that instructions are understood.

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	3.4 Follow prescribed and routine work related sequences.
4. Provide reports.	4.1 Complete all workplace reports clearly and accurately in accordance with procedures. 4.2 Report all relevant information clearly and concisely.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Competence includes the ability to:

- describe importance of workplace documentation in relation to job role
- apply organization, operational, quality and safety policies and procedures
- apply workplace codes such as numbers, symbols, signs, colour and other codes.

Language, **literacy and numeracy requirements**

This unit requires the ability to read and interpret work instructions, procedures, operating manuals, job card and other documents provided to operators.

Writing is required to the level of completing workplace forms.

Basic numeracy is required to the extent required by work instructions and procedures.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

Assessment will occur on the job or in a simulated workplace. In all cases it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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Competence must be demonstrated in the ability to provide and assess all required information and that the information provided both verbally and in writing is completed in a clear and concise manner, that is easily understood by others and in accordance with workplace requirements

Consistent performance should be demonstrated. For example, look to see that:

- reports and records are completed accurately, concisely and in accordance with procedures
- all information is provided in an efficient, effective, courteous and timely manner
- completion of shift handover, log books and company production records conveys all relevant information
- information sharing demonstrates effective communication processes such as turn-taking, participating in discussions and tolerating views of others in a way that contributes to the overall discussion
- notes of discussion are prepared so that they can be clearly interpreted by the receiver
- communication distinguishes between relevant and peripheral issues.

Assessment method and context

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge. A holistic approach should be taken to the assessment.

Competence in this unit may be assessed:

- by observation and questioning to indicate understanding
- in a situation allowing the generation of evidence of the ability to respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- by a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Reasonable adjustment of assessment tasks will be undertaken as required.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

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Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This competency applies to all work environments and sectors within the industry.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This competency includes items of equipment such as:

- telephone
- two way radio
- computer equipment.

Information sources and plant documentation may include:

- operating procedures
- work instructions
- incident procedures
- operating manuals
- quality procedures
- training program contents/materials
- safety data sheets
- job cards
- maintenance logs
- non compliance reports
- incidence and accident reports
- permits
- schematics/process flows/engineering drawings.

Reports

Reports includes the following as appropriate to workplace requirements:

- oral

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- written
- electronic
- handovers (giving/receiving).

Problems

Respond to routine problems means 'apply known solutions to a limited range of predictable problems'. Typical process and product problems may include:

- difficulty in quickly locating information required
- missing forms, logbooks etc.
- conflicting work priorities
- delays in reporting of information
- information is inaccessible
- absence of approver/ other signatories
- breakdown of communication equipment.

Appropriate action for non-routine problems may be reported to designated person

or other action identified in the procedures.

Unit Sector(s)

Not applicable.

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MSAPMSUP240A Undertake minor maintenance

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit applies to operators who are involved in providing basic maintenance and the resolving of routine problems to procedures. It does not cover activities normally requiring traditional trade training.

Application of the Unit

Application of this unit

In a typical scenario a plant operator does minor maintenance activities on the plant and equipment being operated. For instance the pressure drop across a filter unit may be high, indicating the filter cartridge needs changing. The operator takes the filter unit out of operation, cleans the unit, uses the correct spanner to open the lid, installs a fresh cartridge, closes the unit using the spanner again, then cleans up the area and disposes of the spent cartridge. Typically this sort of maintenance will be done on the plant and will not require workshop type facilities.

The operator will:

- be aware of and contribute to a safe working environment
- identify and check equipment for faults
- perform basic maintenance to procedures
- complete logs and reports.
-

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

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Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Identify maintenance requirements.	1.1 Identify equipment variations/irregularities using observed data and plant records. 1.2 Assess the urgency/priority of the situation. 1.3 Identify appropriate corrective action. 1.4 Identify correct tools and materials. 1.5 Assess the impact of the maintenance activity and communicate to appropriate personnel. 1.6 Identify hazards and risk controls. 1.7 Identify work permit requirements.
2. Prepare for maintenance activity.	2.1 Ensure equipment is turned off and isolated as required. 2.2 Clear the area of obstructions and hazardous materials. 2.3 Obtain appropriate tools, parts, materials and procedures. 2.4 Obtain the appropriate work permits and adhere to the requirements. 2.5 Communicate the impending maintenance activity to the appropriate personnel.

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
3. Perform maintenance activity.	3.1 Access all relevant information. 3.2 Undertake maintenance activity according to procedures. 3.3 Use tools and maintenance techniques correctly. 3.4 Restore equipment to normal working condition. 3.5 Leave the work area in a clean and safe condition. 3.6 Ensure permits are signed off as appropriate.
4. Test equipment.	4.1 Test equipment according to procedures. 4.2 Return equipment to service. 4.3 Ensure equipment meets normal operating requirements.
5 Record maintenance activity.	5.1 Complete maintenance logs/plant history records. 5.2 Report maintenance activity to relevant personnel. 5.3 Identify and report outstanding maintenance requirements to relevant personnel.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Knowledge and understanding of equipment operation and maintenance practices sufficient to recognise fault and no-fault conditions in standard and non-standard situations and then determine appropriate action which is consistent with operational guidelines is required.

Knowledge of organisation procedures and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards.

Application of the knowledge of managing risks using the hierarchy of controls applied to the process. Application of approved hazard control, safety procedures, use of PPE in relation to handling materials, equipment operation and clean up.

Knowledge as a basis for solving maintenance problems, including:

- principles of operation of the equipment to be maintained
- function and troubleshooting of major internal components and their problems
- appropriate testing procedures and use of equipment for a range of equipment faults

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- typical causes of equipment failures and the service conditions which may increase maintenance
- types and nature of maintenance (preventative, predictive, corrective) uses, benefits and limitations
- urgency and timeliness factors in maintenance
- maintenance planning/scheduling/records systems
- identification of tools, materials and spare parts
- basic techniques for using and handling tools
- physical measurement, alignment and clearance principles.

Competence also includes the ability to:

- plan own work, including predicting consequences and identifying improvements
- identify factors which may affect product quality or production output and appropriate remedies
- identify when the operator is able to rectify faults and when assistance is required.

Language, **literacy and numeracy requirements**

This unit requires the ability to read and interpret typical equipment specifications schematics and diagrams.

Writing is required to the level of completing workplace forms and production reports.

Basic numeracy is required, to interpret plant data and maintenance schedules.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Where the completion of this unit requires working under a permit/clearance, then competency must also be established in *PMAPER200C Work in accordance with an issued permit*, or other appropriate unit.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- understand the procedures and know the importance of critical operational systems
- recognise potential situations requiring action and then implement appropriate action.

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Consistent performance should be demonstrated. For example, look to see that:

- early warning signs of equipment in need of attention/with potential problems are recognised
- appropriate equipment tests are undertaken and analysed appropriately
- proposals for equipment repair are based upon the most appropriate and cost effective method to return equipment to full performance in a timely manner
- maintenance activities are completed safely and to procedures.

Assessment method and context

Assessment will occur on industrial equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- on a processing plant, allowing for operation under all normal and a range of abnormal conditions
- in a situation allowing the generation of evidence of the ability to respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

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Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This competency applies to all work environments and sectors within the industry. It does not include maintenance that would require trade level skills. It is not intended that this competency would cover maintenance that is carried out in a workshop.

Procedures

All operations are performed in accordance with procedures.

Procedures mean all relevant workplace procedures, work instructions, temporary instructions, standard operating procedures, plant description manuals, manufacturer instructions, specifications, service manuals, machine circuit diagrams for hydraulic/pneumatic and electrical/electronic circuits and relevant industry and government codes and standards.

Maintenance activities

This competency unit includes minor maintenance such as the following:

- operational maintenance (eg connection-disconnection of hoses, greasing, lubrication and lubricant systems, adjusting sealing glands, cleaning and changing filters, 'nipping up' flanges)
- general cleaning
- removal and replacement (eg gland packing, changing blades or cutters, replacing gaskets, replacing /maintaining seals, changing filter elements, servicing strainers).

Tools and equipment

This competency includes use of equipment and tools such as:

- hand tools
- specialised tools
- measuring and aligning equipment.

Hazards

Typical hazards include:

- rotating and moving machinery
- process materials, solids, liquids and gases under pressure or flowing
- hot surfaces or materials
- temporary connections or by-passes
- electrical, hydraulic or pneumatic energy sources
- out of specification operation.

Problems

Respond to/rectify 'non-routine problems' means 'apply known solutions to a variety of predictable problems'. Typical process and product problems may include:

- out-of-specification product or variations
- response of equipment to materials variations

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- equipment in need of maintenance.

Variables

Key variables to be monitored include:

- equipment performance (eg speed, output, variations)
- equipment component performance
- sequences and timing of operations
- materials changes (desired and not desired).

Data and Records

Typical information sources, observed data and plant records may include:

- plant data
- log sheets
- operational and performance reports
- physical aspects such as noise, smell, feel and pressure condition monitoring information
- planned maintenance schedules
- procedures
- manufacturer specifications, instructions, service manuals and other information.
-

Unit Sector(s)

Not applicable.

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MSAPMSUP303A Identify equipment faults

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This unit requires the application of planning, technical knowledge and skills to check and isolate routine and non-routine equipment faults used in production and report on the status of equipment. It applies to all sectors of the industry.

This competency is typically performed by operators demonstrating some relevant theoretical knowledge and using a range of well developed skills requiring some discretion and judgement

Application of the Unit

Application of this unit

This competency applies to operators who are required to apply knowledge of materials, product purpose and processes to the identification and isolation of faults in equipment. The key factors are the planning, checking and identification of routine and non-routine faults, in order to return the equipment to production.

The operator will:

- identify and plan scope of equipment checks
- check settings, adjustments and performance of equipment
- check materials for conformity to job requirements
- identify and isolate faults in equipment
- propose solutions and carry out solutions within scope of authority
- complete logs and reports.
-

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

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This unit has **no** prerequisites.

Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Identify scope of operational check.	1.1 Identify and classify equipment components and operating systems. 1.2 Match appropriate tests and procedures to the equipment operating systems. 1.3 Identify special test procedures and parameters in manufacturer's specifications and procedures. 1.4 Explain the operating principles of hydraulic, pneumatic, mechanical and electrical/electronic systems as related to workplace equipment. 1.5 Implement measures to control identified hazards in line with procedures and duty of care. 1.6 Observe and undertake checks on the physical condition of equipment as per procedures. 1.7 Record preliminary observations. 1.8 Discuss test procedures with appropriate personnel and obtain necessary permission where required.

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
2. Plan operational checks.	2.1 Check specifications and notes from preliminary observations and identify areas to be clarified. 2.2 Plan testing sequence/s noting areas where results and observations should be recorded. 2.3 Identify safe area for testing. 2.4 Make arrangements for any additional resources (including other employees).
3. Check unit through full operational range.	3.1 Undertake testing, observing relevant safety and operational requirements. 3.2 Confirm results and findings.
4. Identify fault and/or formulate recommendations.	4.1 Identify impact of fault on work schedule. 4.2 Record proposals for equipment repair based on faults found, cost/time implications and workplace approval systems. 4.3 Explain report to relevant workplace personnel including any options and recommendations. 4.4 Undertake repairs where appropriate in accordance with procedures.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Knowledge and understanding of equipment operation and maintenance practices sufficient to recognise fault and no-fault conditions in standard and non-standard situations and then determine appropriate action which is consistent with operational guidelines is required.

Knowledge of organization procedures and relevant regulatory requirements along with the ability to implement them within appropriate time constraints and work standards.

Application of the knowledge of managing risks using the hierarchy of controls applied to the process. Application of approved hazard control, safety procedures, use of PPE in relation to handling materials, equipment operation and clean up.

Knowledge as a basis for solving processing and material problems, including:

- principles of the operation of the equipment to be maintained
- functions and troubleshooting of internal components and their problems

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- routine and non-routine causes of equipment failures and the service conditions which may increase maintenance
- maintenance techniques, (eg reactive maintenance, predictive and preventative operational maintenance)
- appropriate testing procedures and use of equipment for a range of equipment faults
- operating principles for mechanical, hydraulic, pneumatic, electrical/electronic systems
- urgency and timeliness factors in planning maintenance activities in relation to production requirements
- collection, analysis and reporting of data.

Competence also includes the ability to:

- identify and select testing methods based on cost and time effectiveness
- conduct inspections, checks and tests on equipment as appropriate
- read and interpret circuit diagrams for mechanical, hydraulic, pneumatic and electrical/electronic operating systems
- use technical information and manufacturer information to locate relevant data
- interpret technical specifications and manufacturer instructions
- ensure workplace is safe for testing and maintenance of equipment
- identify hazards of the materials and process
- implement appropriate procedures for hazard control
- use PPE, safely handle products and materials, read relevant safety information
- apply safety precautions appropriate to the task.

Language, **literacy and numeracy requirements**

This unit requires the ability to read and interpret typical equipment specifications schematics and diagrams.

Writing is required to the level of completing workplace forms and production reports.

Basic numeracy is required, to the level of calculating equipment throughputs and performance.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

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It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- understand the procedures and know the importance of critical operational systems
- recognise potential situations requiring action and then implement appropriate action.

Consistent performance should be demonstrated. For example, look to see that:

- early warning signs of equipment in need of attention/with potential problems are recognised
- appropriate tests are undertaken and tests are analysed appropriately
- proposals for equipment repair are based upon the most appropriate and cost effective method to return equipment to full performance in a timely manner
- items initiated are followed through until final resolution has occurred.

Assessment method and context

It is preferred that assessment takes place on industrial equipment in a work environment.

Competence in this unit may be assessed:

- on a processing plant, allowing for operation under all normal and a range of abnormal conditions
- in a situation allowing the generation of evidence of the ability to recognise, anticipate and solve problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

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The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This competency applies to all work environments and sectors within the industry. It does not include maintenance that would require trade level skills. It is not intended that this competency would cover maintenance that is carried on in a workshop.

Procedures

All operations are performed in accordance with procedures.

Procedures mean all relevant workplace procedures, work instructions, temporary instructions, standard operating procedures, plant description manuals, manufacturer's instructions, specifications, service manuals, machine circuit diagrams for hydraulic/pneumatic and electrical/electronic circuits and relevant industry and government codes and standards.

Tools and equipment

This competency includes use of equipment and tools such as:

- hand tools specific for the task
- product testing equipment (eg flowmeter, scales, tape measure, micrometer, caliper, ultrasonic thickness)
- machinery measuring equipment (eg vibration meter, tachometer, current tester, thermal imaging, temperature gauge)
- measuring and aligning equipment.

Hazards

Typical hazards include:

- rotating and moving machinery
- process materials, solids, fluids and gases under pressure or flowing
- temporary connections or by-passes
- electrical, hydraulic or pneumatic energy sources
- out-of-specification operation.

Problems

Respond to/rectify 'non-routine problems' means 'apply known solutions to a variety of predictable problems'. Typical process and product problems may include:

- out-of-specification product or variations
- response of equipment to materials variations
- new or changed materials
- changed equipment settings (eg higher speed or throughput)
- equipment in need of maintenance

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- procedures requiring update or modification.

Variables

Key variables to be monitored include:

- equipment performance (eg speed, output, variations)
- equipment component performance
- sequences and timing of operations
- materials changes (desired and not desired).

Data and Records

Typical information sources, observed data and plant records may include:

- plant data
- log sheets
- operational and performance reports
- physical aspects such as noise, smell, feel and pressure condition monitoring information
- planned maintenance schedules
- procedures.
-

Unit Sector(s)

Not applicable.

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MSAPMSUP390A Use structured problem solving tools

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the solving of process and other problems, beyond those associated directly with the process unit/equipment, using structured process improvement tools to identify improvements and/or solve problems.

Application of the Unit

Application of this unit

The competency is typically performed by an experienced operator, team leader or supervisor.

Generally the person would be part of a team during the solving of complex or systemic problems and would be expected to perform all parts of this unit and at all times would be liaising and cooperating with other members of the team. This includes:

- using a range of formal problem solving techniques
- identifying and clarifying the nature of the problem
- devising the best solution
- evaluating the solution
- developing an implementation plan to rectify the problem.

This unit does not cover the solving of problems undertaken as part of the operator's normal role which is covered in the relevant operation competency unit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

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Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
1. Identify the problem.	1.1 Identify variances from normal operating parameters and product quality. 1.2 Define the extent, cause and nature of the problem by observation and investigation. 1.3 State and specify the problem clearly.
2. Determine fundamental cause of problem.	2.1 Identify possible causes based on experience and the use of problem solving tools/analytical techniques. 2.2 Develop possible cause statements. 2.3 Identify fundamental cause.
3. Determine corrective action.	3.1 Consider all possible options for resolution of the problem. 3.2 Consider strengths and weaknesses of possible options. 3.3 Determine corrective action to remove the problem and possible future causes. 3.4 Develop implementation plans identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures. 3.5 Develop recommendations for ongoing monitoring

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance Criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the Evidence Guide.
	and testing.
4. Communicate recommendations.	4.1 Prepare report on recommendations. 4.2 Present recommendations to appropriate personnel. 4.3 Follow up recommendations if required.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognise non-standard situations.

This unit of competency includes use of analytical techniques in problem solving such as:

- brainstorming
- fishbone diagrams/cause and effect diagrams
- process logic/process requirements
- logic tree
- similarity/difference analysis
- Pareto analysis
- force field/SWOT analysis
- flow charts
- control charts, runcharts and graphs
- scattergrams.

Action plans to solve problems are prepared including:

- priority requirements
- measurable objectives
- resource requirements
- methods for reaching objectives
- timelines
- coordination and feedback requirements
- safety requirements
- risk assessment
- environmental requirements.

Language, **literacy and numeracy requirements**

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This unit requires the ability to read and interpret typical product specifications, job sheets and material labels as provided to operators.

Writing is required to the level of report writing and completing workplace forms.

Basic numeracy is also required, eg to interpret quality data and graphs.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required skills and knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to apply and explain:

- relevant equipment and operational processes
- enterprise policies and procedures
- enterprise goals, targets and measures
- enterprise quality, OHS and environmental requirements
- principles of decision-making strategies and techniques
- enterprise information systems and data collation
- industry codes and standards.

Consistent performance should be demonstrated. For example, look to see that:

- problems are recognised and clarified
- possible causes are identified, based on experience and use of analytical techniques in solving the problem, including:
  - identifying variations
  - identifying cause and effect
  - separating single problems from multiple problems
  - recognising recurring problems.
- fundamental cause of process or equipment faults is determined
- corrective/preventative implementation plans are developed to avoid recurrence of the problem
- implementation plan is presented to relevant personnel.

Assessment method and context

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Assessment will occur on the job or in a simulated workplace.

Competence in this unit may be assessed:

- in a situation allowing the generation of evidence of the ability to recognise and respond to problems
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

The competency unit applies to a wide range of processes and equipment. The process manufacturing technical units of competency include a problem solving element where problems specific to that competency unit are to be resolved. This competency unit is where structured problem solving techniques are to be applied more broadly, or with greater depth/rigour than is implied by the problem solving element of the technical units.

In large plants or manufacturing organisations with multiple processes, it may apply to more than one process if those processes interact with each other. It applies to all operators across all functions.

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Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Hazards

Typical hazards include leaks, spillages and equipment hazards that can occur during the walk-through of a plant.

Problems

'Anticipate and solve problems' means resolve a wide range of routine and non-routine problems, using product and process knowledge to develop solutions to problems which do not have a known solution/a solution recorded in the procedures.

Typical process and product problems may include:

- non- routine process and quality problems
- equipment selection, availability and failure
- teamwork and work allocation problems
- safety and emergency situations and incidents.
-

Unit Sector(s)

Not applicable.

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MSS402061A Use SCADA systems in operations

Modification History

New unit, superseding MSACMT261A Use SCADA systems in manufacturing - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required by an individual to interact with a System Control and Data Acquisition (SCADA) system as part of their job.

Application of the Unit

This unit applies to an individual in an organisation using a SCADA system and the individual must interface with that system. The individual will need to access this system as part of their routine and take actions based on the information they obtain from the SCADA system in accordance with procedures.

This unit requires the application of skills associated with using communication tools and technology for management of own work, planning and problem solving.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

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Elements and Performance Criteria

1	Use operator interface	1.1	Identify SCADA terminals relevant to own work station and functions
		1.2	Use keyboards, track ball, monitor and/or stand alone controllers to access/interrogate system
		1.3	Use correct level of access and find all relevant screens and information
		1.4	Access message section and acknowledge messages
		1.5	Input and output information correctly according to program and organisation requirements
2	Use information	2.1	Obtain data and information from SCADA, as required, including process, supply and product chain data
		2.2	Interpret data and information as required by own job
		2.3	Find and use relevant historical data and information
		2.4	Use manufacturer manuals or specifications, as required, to expand knowledge of SCADA system relevant to own work
		2.5	Determine and prioritise required actions
3	Make required changes in accordance with procedures	3.1	Adjust production/process in response to SCADA information
		3.2	Record adjustments and variations to specifications/schedules and report to appropriate personnel
		3.3	Seek feedback and information on adjustments to further improve procedures, where required

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Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- using SCADA terminals and other input devices
- reading and interpreting electronic and hard copy SCADA operating instructions and documents, including where used:
  - work instructions
  - standard operating procedures
  - temporary instructions
  - other provided operating instructions
- working within security and access control requirements of the SCADA system
- identifying modules, screens, and so on, of SCADA system relevant to own work
- accurately inputting and outputting data
- searching and retrieving data
- accessing SCADA system nominated assistance, when required

Required knowledge

Required knowledge includes:

- technical knowledge needed to operate own work processes
- hierarchy of SCADA system and operation
- information available from and controls exercised by/through the SCADA system

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • identify the scope and relevance of the SCADA system to their own work • access correct levels of the SCADA system • enter and retrieve data, including normal performance and variations

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	• use SCADA system to assist in own work.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented ,or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess responses to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as SCADA software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
SCADA	SCADA refers to: • a number of systems which automatically collect

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	critical process data, perform required mathematical manipulations on it and then make control decisions and/or give required information to personnel for action In some industry sectors, the SCADA system is sometimes integrated into other sophisticated computer control systems, such as Distributed Control System (DCS). These sectors may simply refer to their SCADA as the DCS or other similar term (such as the proprietary name of the computer system). SCADA systems may provide information from outside of the process, such as stock/material levels in a customer plant and/or available supply, supply rates and pricing from a supplier plant. This information may all be accessed by the SCADA system and the employee using it in order to make production rate and other control decisions (either automatically or human assisted) about their own operations and work processes
Supply and product chains	The supply chain Includes: • all suppliers in the chain from the initial raw material up to the current step in the operations process The product chain includes: • all steps after the current step up to the final customer Competitive systems and practices organisations encompass the entire production system, beginning with the customer, and includes: • the product sale • outlet • the final assembler • product design • raw material mining and processing • all tiers of the value stream (sometimes called the supply chain) Any truly 'competitive' system is highly dependent on the demands of its customers and the reliability of its suppliers. No implementation of competitive systems and practices can reach its full potential without including the entire 'organisation' in its planning
Procedures	Procedures may include: • work instructions • standard operating procedures

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	• formulas/recipes • batch sheets • temporary instructions and similar instructions provided for the smooth running of the plant • good operating practice as may be defined by industry codes of practice (e.g. good manufacturing practice (GMP) and responsible care) • government regulations Procedures may be: • written, verbal, computer-based or in some other format

Unit Sector(s)

Unit sector Competitive systems and practices

Custom Content Section

Not applicable.

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MSS402080A Undertake root cause analysis

Modification History

New unit, superseding MSACMT280A Undertake root cause analysis - Equivalent

Unit Descriptor

This unit of competency covers the skills and knowledge required to undertake root cause analysis (RCA) by any person. This will often be undertaken by people working in a team. This unit also covers the competencies needed by operators to contribute to an advanced maintenance strategy using RCA coupled with diagrams and charts.

Application of the Unit

This unit applies to individuals working in an organisation which is applying competitive systems and practices strategies. The unit applies to the formal problem solving to root cause that the individual must undertake in their own work area or where the individual contributes to problem solving to root cause as part of a team.

This unit requires an ability to seek and apply information from a variety of sources in order to inform RCAs. Initiative and enterprise is also required to identify quick fix and permanent solutions to problems.

Where training in a wider range of problem solving techniques and tools is required the unit MSAPMSUP390A Use structured problem solving tools should be selected.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the Performance criteria describe the performance needed to

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essential outcomes of a unit of competency.	demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Recognise problems	1.1	Identify features or occurrences indicative of a problem
		1.2	Use appropriate tools, techniques and charts to define the problem
2	Implement quick fix	2.1	Recommend a quick fix within the scope of competency and authority
		2.2	Use technology or processes relevant to the problem to implement quick fix
3	Determine root cause	3.1	Identify a range of possible causes
		3.2	Gather data and other information to eliminate or confirm possible causes
		3.3	Use available data and information to link causes and effects
		3.4	Seek assistance, as required
		3.5	Identify root cause
4	Develop permanent solution	4.1	Identify a range of methods to eliminate the root cause or break the cause tree
		4.2	Select the most appropriate solution
		4.3	Liaise with relevant people
		4.4	Recommend or implement solution within the limits of competency and authority

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4.5 Monitor impact of solution and make further recommendations, as required

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- cooperating and working with others on problem solving
- assessing and recording information from a variety of sources
- defining potential problems factually, including:
  - location and extent of problem or incident
  - sequence of events where relevant
  - extent of deviation from normal operation or performance
- analysing potential problems across a range of varied activities and knowledge applications
- reading and constructing simple charts, such as cause and effect diagrams

Required knowledge

Required knowledge includes:

- RCA methodology, including difference between quick fixes and root cause elimination or breaking of causal tree
- principles and normal operation of equipment, plant and processes in own work area sufficient to undertake a RCA and propose solutions
- common variances to normal performance that are indicators of a problem
- use of relevant analysis tools (e.g. cause/effect diagrams, Pareto charts and 5 Whys)
- operations in own work area

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and	A person who demonstrates competency in this unit must

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evidence required to demonstrate competency in this unit	be able to provide evidence of the ability to: • undertake problem identification • use appropriate processes to achieve root cause identification • prioritise solutions • recommend solutions and implementation procedures to problems within own area and range of technical skills and knowledge • evaluate implementation of solutions.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices. Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee • documentation and information in relation to production, waste, overheads and hazard control/management • reports from supervisors/managers • case studies and scenarios to assess response to contingencies.
Method of assessment	A holistic approach should be taken to the assessment. Competence in this unit may be assessed by using a combination of the following to generate evidence: • demonstration in the workplace • workplace projects • suitable simulation • case studies/scenarios (particularly for assessment of contingencies, improvement scenarios, and so on) • targeted questioning • reports from supervisors, peers and colleagues (third-party reports) • portfolio of evidence. In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and

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	disability.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Competitive systems and practices	Competitive systems and practices may include, but are not limited to: • lean operations • agile operations • preventative and predictive maintenance approaches • monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems • statistical process control systems, including six sigma and three sigma • Just in Time (JIT), kanban and other pull-related operations control systems • supply, value, and demand chain monitoring and analysis • 5S • continuous improvement (kaizen) • breakthrough improvement (kaizen blitz) • cause/effect diagrams • overall equipment effectiveness (OEE) • takt time • process mapping • problem solving • run charts • standard procedures • current reality tree

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	Competitive systems and practices should be interpreted so as to take into account: • the stage of implementation of competitive systems and practices • the size of the enterprise • the work organisation, culture, regulatory environment and the industry sector
Features or occurrences indicative of a problem	Examples of features or occurrences indicating problems include: • variation to normal plant or equipment operation • unplanned or non-conforming process or operations outcomes • out of specification products • excess scrap • accidents and emergencies • regulatory breaches • customer returns and complaints • reduction or loss of sales
Root cause	There are many possible causes of any problem. The root cause contrasts with other possible causes of a problem which when eliminated have no impact or only ameliorate the problem. Elimination of the root cause permanently eliminates the problem. There should only be one root cause for any problem and so the analysis should continue until this one cause is found.
Cause tree	The series of causes is referred to as the cause tree. Not all root causes are accessible and able to be eliminated. Breaking the cause tree is such a way that the problem cannot recur is an acceptable alternative. Not all situations can wait for the RCA and eventual elimination of the root cause as there may be serious current impacts. The quick fix will control these immediate impacts, but does not eliminate the root cause.
Quick fix	A quick fix is not a short cut or side step for a permanent solution to the root cause. It is a necessary step designed to control the immediate impacts of a problem, for example, to prevent ongoing errors or to ameliorate damage.
Appropriate techniques/charts	Appropriate techniques/charts may include: • control charts • Pareto charts

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	• run charts • flow charts • cause and effect diagrams • tree diagrams • 5 Whys analysis

Unit Sector(s)

Unit sector Competitive systems and practices

Custom Content Section

Not applicable.

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PMAOHS211B Prepare equipment for emergency response

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency unit covers the preparation and minor servicing of equipment used to respond to emergency situations.

Application of the Unit

Application of the unit	

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify emergency equipment.	1.1. Locate emergency equipment 1.2. Ensure access is provided to emergency equipment.
2. Inspect and assemble emergency equipment.	2.1. Inspect emergency equipment for faults or damage 2.2. Secure couplings/connections and operational condition 2.3. Assemble equipment in accordance with manufacturer specifications 2.4. Identify and report any missing or damaged components.
3. Carry out minor servicing of equipment.	3.1. Maintain and clean equipment according to specifications/procedures 3.2. Conduct servicing in accordance with specifications/procedures 3.3. Ensure equipment is 'made-ready' and stored in designated location 3.4. Ensure equipment functions in accordance with specifications.
4. Report and record equipment status.	4.1. Record and report equipment status 4.2. Raise maintenance requests as required 4.3. Undertake corrective actions as required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
• hand skills • follow procedures • observation • completing records • assembling and operating various pieces of emergency response equipment • servicing various pieces of emergency response equipment

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REQUIRED SKILLS AND KNOWLEDGE
• storing various pieces of emergency response equipment.
Required knowledge
Knowledge and understanding of the emergency response procedures and equipment, sufficient to recognise standard and non-standard situations with regards to the equipment used, and then determine the appropriate action which is consistent with operating guidelines. These include: • principles of operation of the emergency response equipment • hazards policies and procedures • emergency, fire and accident procedures. Knowledge of the relevant OHS and environmental requirements, and enterprise standard operating procedures (SOPs), along with an ability to implement them in a manner that is relevant to emergency response practices. These include procedures for the use of personal protective clothing and equipment.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays. This unit of competency requires a body of knowledge which will be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk- throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in

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EVIDENCE GUIDE	
required to demonstrate competency in this unit	implementing appropriate action. The emphasis should be on the ability to minimise the affect of an emergency situation. Consistent performance should be demonstrated. In particular look to see that: • early warning signs of equipment in need of servicing are recognised • equipment is always 'made ready' • equipment is always stored in the designated location at all times when not in use • access to equipment is available at all times when not in use. These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus, with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and extreme situations that may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg HAZOP) and similar sources.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork, OHS and communication units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the

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RANGE STATEMENT	
candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes all items of equipment that are required for emergency response.
Emergency response equipment	Emergency response equipment may include: • fire extinguishers • fire hoses • fire blankets • pumps • branches, fittings and nozzles • foam equipment/units • personal protective clothing • breathing apparatus • deluge/safety showers.
Functions	Required functions include: • inspections • visual • mechanical • servicing • lubrication • pressure checks • refilling • communication • maintenance • external authorities.
Hazards	Hazards may include: • chemicals and hazardous materials • gases and liquids under pressure • moving machinery • materials handling • working at heights, in restricted or confined spaces, or • environments subjected to heat, noise, dusts or vapours.
Emergency situations	Emergency situations may include: • accidents

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RANGE STATEMENT	
	• fires • chemical or oil spills • gas leak or vapour emission • utilities failure • bomb scares.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit sector	HSE

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOHS310B Investigate incidents

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency unit refers to the investigation of incidents that occurred at the workplace. These incidents can vary from large to small, completely internal or partially externally coordinated. They include, but are not limited to, all types of emergencies, fires, OHS and/or environmental incidents.

Application of the Unit

Application of the unit	In a typical scenario, minor incidents which are subject to internal investigation will be conducted by the plant operator/technician, and for a more major investigation, or one subject to external investigation, he/she will assist with the investigation and/or undertake identified parts of the investigation. The exact definition of the scope of responsibility will depend on company policy, as will the level of the person undertaking these investigations. These investigations will be in accordance with company procedures for such investigations which will be consistent with any relevant regulations.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Monitor and review emergency situation	1.1. Undertake site inspections of incident scene 1.2. Communicate with relevant personnel regarding specific aspects of the emergency situation 1.3. Monitor corrective action procedures 1.4. Communicate changes to the situation to appropriate personnel.
2. Record investigation process and results as appropriate	2.1. Establish and secure boundaries of the incident scene to prevent contamination of prospective evidence/exhibits 2.2. Identify and interview persons relevant to the incident 2.3. Identify and record evidence/exhibits at the scene prior to examination to ensure continuity 2.4. Assess relevant information, documentation and evidence/exhibits 2.5. Determine point of origin and most likely cause of incident of the emergency 2.6. Determine risk factors affecting the emergency 2.7. Identify and analyse a range of other possible causes 2.8. Identify and utilise support services to investigate the incident scene 2.9. Process, record and communicate information/evidence/ exhibits, forms and documents to appropriate personnel following enterprise policies and procedures.
3. Make suggestions to	3.1. Identify and assess tactical factors and resulting priorities

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ELEMENT	PERFORMANCE CRITERIA
improve handling of emergency situation	occurring during the emergency 3.2. Formulate appropriate suggestions to improve handling of similar emergency situation based upon information available 3.3. Identify obvious problems in related plant area and make an appropriate contribution to their solution.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.

Required skills

Competence includes the ability to apply and describe or explain:

- factors affecting fire behaviour
- characteristics of fire and fuel types
- security of an incident scene
- examination of an incident scene
- collection of physical evidence
- workplace documentation and recording systems
- use of personal protective equipment
- liaison techniques with third parties
- workplace procedures and work instructions
- company policies regarding health and safety and environment
- hazard identification, assessment and control of risk
- basic risk assessment of workplace jobs/tasks
- environmental impacts likely to arise from activities
- measures for eliminating and/or reducing impacts on the environment.

Required knowledge

Knowledge and underpinning skills are required in:

- communication (listening, questioning) and negotiation in questioning witnesses
- analytical and decision making skills
- problem solving skills in responding to a range of emergency situations
- exhibit handling and preserving continuity of evidence
- witness management, in particular demonstration of ethical behaviour and cultural awareness.

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REQUIRED SKILLS AND KNOWLEDGE
Knowledge and understanding of the investigation of incidents sufficient to recognise and assess causes of emergency situations and then to determine improvements to the actual response within the scope and level of the IR responsibilities and competencies. A demonstrated working knowledge and application of the company-specific work organisations and workflow would be highly regarded. An ability to coordinate own work and the work of other team members is also regarded as a component of this unit of competency.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action within the scope and level of their

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EVIDENCE GUIDE	
	responsibilities and competencies. Consistent performance should be demonstrated. In particular look to see that wherever possible: • the scene is secure and evidence is preserved • evidence is collected in accordance with legislative requirements • point of origin and most likely cause of incident is determined • a range of other possible causes can be identified and analysed • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution • emergency reporting procedures are understood and followed. These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk-through forming part of the response. These assessment activities should include a range of problems, including new, unusual and extreme situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (eg HAZOP) and similar sources.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

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Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	Job safety and environment analysis will be conducted in accordance with required company procedures and policies. This competency covers process manufacturing plants which may involve workplace hazards such as: • chemicals and hazardous materials • gases and liquids under pressure • moving machinery • materials handling • working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.
Incidents/emergencies	Incidents/emergencies may include, but are not limited to: • accidents • fire • chemical or oil spills • gas leak or vapour emission • utilities failure • bomb scares • OHS incidents • environmental incidents.
Enterprise policies and procedures	Enterprise policies and procedures include those which directly or indirectly cover emergency situations, such as: • emergency, fire and accident procedures • hazard policies and procedures • standard operating procedures (SOPs) • safety procedures • work instructions • personal protective clothing and equipment procedures.
Evidence gained	Evidence gained as a result of investigations may include: • video tapes

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RANGE STATEMENT	
	• audio tapes • drawings • photographs • plans • manifests • relevant documents • personal notes • physical evidence/materials • debris • soil.
Support services	Support services may include incident scene specialists: • pathologists • forensic investigators • coroner • government medical officers • interpreters • technical services • legal officers • undertakers • forensic accountants • information technology consultants • document examiners • handwriting experts • financial organisations • external law enforcement agencies.
Interview strategies	Interview strategies may vary but require consideration of: • location • timing • method (direct questioning, empathetic questioning) • strategies for developing rapport • who is being interviewed • exclusion of leading questions • avoidance of cross-examination.
Legal and policy requirements	Legal and policy requirements differ according to the status of the person being interviewed. Such requirements may include: • the presence of a solicitor, independent person, family member or interpreter • special consideration that applies disabled, child, parent, age, gender, ethnicity and race.

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RANGE STATEMENT	
Post investigation documentation	Post investigation documentation may include: • statements • proformas • photographs • tape recordings.

Designated personnel	Designated personnel for incident investigation referrals may include:
	• employer
	• personnel directly involved in responding to the incident, including:
	  • first response personnel
	  • emergency response team members
	  • emergency team leader(s)
	  • First Aid officers
	• other personnel with emergency team leader responsibilities.

Health, safety and environment (HSE)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

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Co-requisite units

Co-requisite units	

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PMAOHS311B Lead emergency teams

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency applies to an individual required to lead and coordinate an emergency team, including deployment of resources at the scene of an emergency.

Application of the Unit

Application of the unit	A person undertaking this unit of competency would be normally nominated to assume the responsibility of emergency team leader. Typically they would be leading an incident response or fire emergency response team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess the nature and extent of the emergency	1.1. Determine the nature and extent of the emergency in order to ascertain the level and degree of the emergency and what required actions and management strategies should be implemented 1.2. Communicate the nature and extent of the emergency in a timely and appropriate manner to other nominated emergency or facility personnel 1.3. Facilitate the rescue of personnel at risk, control/extinguish the emergency and to make the affected area safe through application of rescue and control strategies 1.4. Ensure all team members are adequately instructed, protected and equipped to function safely and effectively in the emergency situation through the application of personal protective equipment.
2. Effect rescue of personnel at risk.	2.1. Instruct rescue teams to effect the search for, and rescue of, personnel identified as being at risk 2.2. Allocate resources to potentially exposed or threatened personnel and assets, and minimise the likelihood of escalation of the risk.
3. Confine the spread of emergency	3.1. Initiate control/extinguishing responses promptly in order to eliminate the emergency 3.2. Render affected areas safe in order to prevent the likelihood of further re-occurrence, or threat to personnel or assets 3.3. Provide feedback to facility or other nominated personnel concerning the status of the emergency.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
A person undertaking this competency must be able to demonstrate: • leadership skills • organisation skills • planning skills • team management skills • hazard awareness and safety awareness skills • communication skills.
Required knowledge
Knowledge and understanding of the process sufficient to recognise emergency situations and then determine an action that is appropriate within operating guidelines and the scope of their responsibilities and competencies. It would be expected that a person would be able to communicate with team members the nature and extent of the emergency and provide the actions required. Demonstrated knowledge of: • characteristics of fires and fuel types • hazard identification, assessment and control of risk • principles and procedures of self contained breathing apparatus (SCBA) • search and rescue techniques (including self rescue techniques) • relevant facility fire management and safety systems • communication systems • emergency response plans • teamwork principles and techniques.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated

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EVIDENCE GUIDE	
	competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk-throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to minimise the effects of the critical situation. Consistent performance should be demonstrated. In particular look for: • ability to work effectively as a team and as a team leader • recognition of the behaviour of fire and other emergency situations • impact of emergency tactics • evidence that emergency operations are conducted in accordance with the organisation's safe work practices. These aspects may be best assessed using a range of scenarios/case studies/what ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and extreme situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities (e.g. HAZOP) and similar sources.

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EVIDENCE GUIDE	
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	The skills and knowledge contained within this unit of competency could be utilised as a normal part of a person's responsibilities and duties. In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. It would be expected that a person undertaking this competency would have completed or be able to demonstrate competence in the following unit of competency before undertaking this unit: • *MSAPMOHS212A Undertake first response to fire incidents* • *PMAOHS213B Undertake fire control and emergency rescue*.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

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RANGE STATEMENT	

Context	Those persons who normally operate or are based permanently or regularly assigned to an onshore or offshore installation or facility and lead an emergency response team would require this unit of competency.
	
	This unit could be applied to any of the following installations or facilities:
	
	• onshore/offshore rig/installation
	• island based facility
	• floating production vessel or platform
	• onshore production, processing and/or storage facilities
	• pipeline easements
	• maintenance bases.
	
	This competency covers process manufacturing plants which may involve workplace hazards such as:
	
	• chemicals and hazardous materials
	• gases and liquids under pressure
	• moving machinery
	• materials handling
	• working at heights, in restricted or confined spaces, or environments subjected to heat, noise, dusts or vapours.
	
	Emergency situations may include:
	
	• accidents
	• fires
	• chemical or oil spills
	• gas leak or vapour emission
	• utilities failure
	• bomb scares.
	
	Equipment may include:
	
	• fire extinguishing agents and water curtains
	• hoses
	• mobile extinguishers
	• stretchers
	• personal protective clothing and equipment such as:
	  • chemical protective clothing
	  • distress alarms
	  • structural fire protective clothing
	• self contained breathing apparatus (SCBA)
	• communication equipment.
	
	Emergency extinguishing media may include:
	
	• water

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RANGE STATEMENT	
	• foam • extinguishing powder • gaseous extinguishing agents • vapourising liquids • other fire extinguishing substances. On-scene hazards may include: • smoke, darkness and heat • electricity • gas • structural hazards • structural collapse • industrial - machinery, equipment, product • hazardous products and materials • unauthorised personnel. Emergency strategies and tactics may include: • direct attack • indirect attack • combination attack • exposure protection • internal/offensive attacks • confining the spread of incident • rescuing occupants • cooling the fuels • removal of fuels • interrupting the chemical chain reaction • exclusion of oxygen. Relevant facility fire management and safety systems include: • fire management systems • communication systems • relevant facility emergency management and contingency response plans. Relevant legislative and safety case management principles and agreements must be adhered to.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

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Unit Sector(s)

Unit sector	HSE

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOMIR210B Control evacuation to muster point

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competence applies to a person who is required to control the evacuation of personnel from the workplace to a muster point and includes moving mobility/sensory impaired people including persons with either temporary or permanent sensory impairment and casualties, or others who require assistance during an evacuation.

Application of the Unit

Application of the unit	Contributing circumstances might include: • fire or smoke spread • hazardous releases - loss of containment • earthquakes, severe storm damage, cyclones, floods and other nature and human-made disasters. The individual would: • control the evacuation • conduct head counts • instigate checks for missing persons • relocate evacuated persons to other areas Generally the person would be part of a team during the incident but may be required to act independently. At all times they would be liaising and cooperating with other members of the team. This unit incorporates features from 145/01 React safely in emergency situations (level one), 145/06 Safeguard endangered persons (level three), 145/11 Coordinate actions to safeguard endangered persons (level four).

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to evacuate	1.1. Recognise alarm or other signs of incident 1.2. Determine nature and location of incident, wind direction and other relevant information 1.3. Assess incident situation and instigate relevant procedure 1.4. Predict probable changes/escalation to incident 1.5. Prepare the area and personnel for evacuation 1.6. Facilitate incident roles and the operation of incident response stations according to procedures 1.7. Coordinate incident response actions according to procedures 1.8. Maintain communication channels with relevant personnel
2. Control evacuation	2.1. Identify hazards associated with evacuation 2.2. Identify and communicate most appropriate path for evacuation to the desired muster point 2.3. Implement relevant hazard control procedures 2.4. Initiate evacuation when appropriate 2.5. Ensure evacuation of mobility/sensory-impaired people

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ELEMENT	PERFORMANCE CRITERIA
	2.6. Control incident evacuation according to procedures 2.7. Undertake roll call of evacuated persons 2.8. Communicate required details of evacuation to relevant personnel.
3. Complete evacuation.	3.1. Arrange and coordinate the first aid, welfare and other needs of evacuated persons 3.2. Maintain control over evacuees 3.3. Arrange for/provide assistance to the incident controller as required 3.4. Maintain communication channels with relevant personnel 3.5. Move evacuees to a new location, or dismiss and return to work as appropriate 3.6. Debrief evacuees and seek possible improvements 3.7. Complete all required records and reporting 3.8. Arrange for suggested improvements to be incorporated into procedures as appropriate

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to isolate the causes of hazards within the incident response system and to be able to distinguish between causes of hazards indicated by: • misunderstandings concerning coordination and communication methods • failure to liaise with emergency services • lack of timeliness in reporting unsatisfactory outcomes • failure to carefully check evacuated areas • incident assessment, response and coordination • inability to apply incident procedures.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • incident response reports or signals • hazards and precautions to be taken during incidents • actions to take in response to developing situations

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REQUIRED SKILLS AND KNOWLEDGE
• accounting procedures and analysis of reports from evacuation areas • miscellaneous incident activities.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment for this unit of competency will be by way of simulation or under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances. Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include 'walk-throughs' of the relevant competency components and may include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what-if' scenarios both in the facility (during demonstration of normal operations and walk-throughs of abnormal operations) and off the site.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to correctly respond to incident situations and in implementing appropriate action. The emphasis should be on the ability to stay ahead of the problem rather than to have to take drastic action in order to recover the situation. In particular look to see that: • incident responses are in accordance with company procedures • correct incident response equipment (where required) is used appropriately

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EVIDENCE GUIDE	
	• the safety and/or successful recovery of the individual and others affected by the incident response is afforded priority in the actions taken • actions taken do not inhibit incident response effectiveness or further contribute to the incident • appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources for assessment	Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all workplace environments it may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may

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RANGE STATEMENT	
be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes all such items of equipment and workplace operations which form part of the incident response system which is relevant to evacuations. For your work environment this may include (select relevant items): • hard hats • armbands • torches • smoke hoods • lifejackets • incident communications equipment • check lists and floor plans. Typical hazards for your work environment may include: • spread of fire • threat to adjoining areas • danger of explosion • loss of communications • falling or shifting debris • obstruction of evacuation routes.
Health, safety and environment (HSE)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.
Relationship to Major Hazard Facility Legislation	Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)]. This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

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Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOMIR346B Assess and secure an incident site

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit applies to a person who would typically be an incident team leader and who, following an incident, undertakes the inspection of the site and makes an initial assessment as to the immediate safety of the area.

Application of the Unit

Application of the unit	The incident team leader typically responds to the incident coordinator, who may be stationed in the incident control centre. In a typical scenario, following the occurrence of an incident the person would take action to ensure the immediate incident site is safe and take steps to maintain facility safety, record details of the scene and preserve it from contamination. The person may also be required to manage the scene pending the arrival of appropriate authority or company representatives as required by company procedures, legislation or regulations. Incident scenes may be the consequences of: • explosions • loss of containment of hazardous materials • environmental incidents • hydrocarbons fires or releases of noxious or toxic gasses The person would: • ensure that the site is rendered safe and that access to the area is limited • take steps to ensure the site is preserved intact • ensure that site is isolated from ancillary processes to prevent secondary incidents • note or record all pertinent details • take statements or conduct interviews of witnesses Generally the person would be part of a team during an investigation however may be required to take independent action. At all times they would be liaising and cooperating with other members of the organisation's incident

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	management team.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Secure and preserve the scene	1.1. Undertake an initial assessment of the site to identify factors which will impact on safety and scene preservation 1.2. Ensure that secondary incidents are prevented by isolating the site from associated or ancillary processes 1.3. Coordinate arrangements to secure the incident/accident site to preserve the site and maintain the safety of personnel in line with procedures 1.4. Restrict access to the site until the arrival of authorised company or external authority representatives

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ELEMENT	PERFORMANCE CRITERIA
2. Record details of the incident site	2.1. Record details of the scene according to the organisation's policies and procedures 2.2. Note the status of any equipment in the incident area 2.3. Communicate information to relevant personnel in line with the procedures
3. Gather information	3.1. Record witness details and note any information given in accordance with procedures 3.2. Take statements from witnesses and record details of persons believed to be near the site prior to or during the incident 3.3. Develop an initial timeline of events leading up to the incident
4. Ensure safety when responding to an incident	4.1. Identify hazards 4.2. Assess the risks arising from those hazards 4.3. Implement measures to control those risks in line with procedures and duty of care
5. Respond to problems	5.1. Identify possible problems in equipment or process 5.2. Determine which problems need action 5.3. Determine possible fault causes 5.4. Rectify problem(s) using appropriate solution(s) within area of responsibility 5.5. Follow through items initiated until final resolution has occurred 5.6. Report problems outside area of responsibility to designated person

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to isolate the causes of issues within the incident response system and to be able to distinguish between causes of issues indicated by: • materials being moved from the site without approval • vehicular or personal traffic contaminating the site • personnel being injured or contaminated on the site

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REQUIRED SKILLS AND KNOWLEDGE
• loss of evidence from the site.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • methods of securing the site • techniques for removing survivors and non-survivors from the area • organisation requirements for taking witness details and information • regulatory requirements for taking witness details and information • legislative and organisation requirements relating to scene preservation • types of information which may assist in investigations.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment for this unit of competency will be by way of simulation or under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances. Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk-throughs of the relevant competency components and may include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what-if' scenarios both in the facility (during demonstration of normal operations and walk- throughs of abnormal operations) and off the site.
Critical aspects for assessment and	Competence must be demonstrated in the ability to

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EVIDENCE GUIDE	
evidence required to demonstrate competency in this unit	correctly respond to incident situations and in implementing appropriate action. The emphasis should be on the ability to stay ahead of the problem rather than to have to take drastic action in order to recover the situation. Consistent performance should be demonstrated. In particular look to see that: • incident responses are in accordance with company procedures • site is secured to preserve and maintain safety of personnel and restricted access • the safety and/or successful recovery of the person and others affected by the incident response is afforded priority in the actions taken • actions taken do not inhibit incident response effectiveness or further contribute to the incident • appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.
Context of and specific resources for assessment	Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all workplace environments it may be appropriate to assess this unit concurrently with relevant units such as
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

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Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes all such items of equipment and unit operations which form part of the incident response system. In your facility this may include (select relevant items): • note taking materials • standard forms • sketching materials • photographic equipment • taping or electronic videoing equipment • non sparking or radio transmission equipment (where safety permits) Examples of problems that may arise include: • rescue equipment or personnel contaminating the site • inherent site dangers from debris or damaged equipment • weakened structures • difficulties in maintaining communication • explosive atmospheres
Health, safety and environment (HSE)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.
Relationship to Major Hazard Facility Legislation	Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)]. This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for

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RANGE STATEMENT	
	appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOMIR407B Audit incident preparedness and established response systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competency to assess the extent to which a facility is prepared to respond to an incident. This could apply to all of the realistically potential incidents which might occur to an organization, including those under its safety case. The person undertaking the audit would typically respond to the incident manager.

Application of the Unit

Application of the unit	In a typical scenario the person would undertake an analysis of existing incident preparedness and response systems as part of a continuous improvement process or spot check. Part of the audit may involve the conducting of an unscheduled incident response drill, analysing the results and providing a thorough debrief of the persons involved. The person then may make recommendations for changes to the system Key aspects of the competency include: • thorough examination of each of the various systems in place • identifying key areas where systems overlap or system breakdowns occur • ensuring that the established systems are working in accordance to the incident response plan and legislative requirements The person may: • communicate extensively within and outside the organisation • review and audit practices and processes relevant to incident response • identify and as necessary reinforce system benchmarks • provide input towards system continuous enhancement. • conduct and assess incident exercises as required. Generally the person would be an incident coordinator, manager or technical specialist and be part of an incident response team during the incident. They may have an ongoing role for managing incident information and/or the

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	incident information system.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Benchmarks for audit are clearly identified	1.1. Access, interpret and clarify the legislative, statutory and site requirements relating incident preparedness and response systems 1.2. Access and review relevant documentations of the plan and established management systems 1.3. Conduct consultations with stakeholders and specialist as necessary
2. Plan, organise and undertake audit of the established incident	2.1. Identify or develop methods to audit the established management systems and processes as prescribed by the plan and/or legislation in consultation with relevant

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ELEMENT	PERFORMANCE CRITERIA
response systems	personnel 2.2. Identify and secure the resources required to conduct the audit 2.3. Gather and sight relevant documents and all other evidence required in accordance with procedures 2.4. Conduct the audit according to prescribed/pre-agreed methodology and in a manner that enhances the organisation's confidence and commitment to the incident response system
3. Evaluate and report the results of the audit	3.1. Evaluate evidence gathered for reliability, validity, authenticity, sufficiency, currency and consistency 3.2. Promptly bring to the attention of relevant personnel any findings which have serious or immediate risks 3.3. Disseminate records of the process and outcomes of the audit, including justifiable recommendations complying with procedures, to appropriate personnel in a timely manner
4. Follow up results of the audit	4.1. Discuss and confirm results with relevant personnel and provide feedback including advice on corrective actions 4.2. Follow up corrective actions relating to deficiencies until resolution has been achieved

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by: • audit methods fail to provide sufficient qualitative and quantitative data • audits fail to identify key system failures • actions arising from audits do not translate into improvements in the system • relationships between incident response partner organisations do not function as intended.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes:

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REQUIRED SKILLS AND KNOWLEDGE
• relevant legislation • relevant company policy management systems/procedures relating to incident preparedness and response • company requirements in relation to audit and review procedures • hazard identification and control • OHS requirements • risk management principles and techniques • incident containment tactics.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances. Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk-throughs of the relevant competency components and may include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what-if' scenarios both in the facility (during demonstration of normal operations and walk-throughs of abnormal operations) and off the site.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Consistent performance should be demonstrated. In particular look to see that competence in this unit reflects successful assessment in the critical aspects of:

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EVIDENCE GUIDE	
	• safe conduct of audit and review • identification of benchmarks for audit and review • development of methodologies for effective audit and review • compliance with prescribed methodologies for audit and review • evaluation of documents and evidence • demonstrated understanding of the value of accuracy, attention to detail and impartiality • information gathering, analysis and communication These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources for assessment	Assessment will require (1) access to an accurately simulated environment or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what-ifs and a bank of questions to probe the reasoning behind the observable actions will likewise be required.
Method of assessment	It may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT
The Range Statement relates to the unit of competency as a whole. It allows for different work

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RANGE STATEMENT	
environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	Management systems include (but are not limited to): • evacuation • emergency operations structure • communications • information management • documentation and reporting requirements • resource management • training • audit and review system • financial management Documents and evidence may include: • electronic databases • videos • photographs • written information/records • training and learning programs
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.
Relationship to Major Hazard Facility Legislation	Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)]. This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

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Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOMIR418B Coordinate incident response

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the coordination of the response to off-shore or on-shore incidents. The person may be the incident coordinator, or could be a member of the incident control centre team. The incident coordinator typically responds to the incident manager, who may be stationed away from the facility or plant.

Application of the Unit

Application of the unit	In a typical scenario, the person is in charge of an incident control centre on or near the facility. The incident coordinator is responsible for interactions between corporate headquarters, the on site incident response teams and the person in charge of the facility. There may be more than one incident response team involved depending on the size and complexity of the incident. Key aspects of the competence include: • minimising the escalation of the incident • allocation of resources and assets • tactical response planning, consistent with the philosophies and strategies of the organisation • close communication with the incident response team(s) • interactions with external agencies required to assist with the emergency • gathering information concerning the incident The individual may: • effectively communicate and consult with a range of individuals and organisations • develop incident response and/or incident search and rescue tactics based on information available • negotiate and communicate with internal support structures set up to assist with logistics planning, operations and external affairs Generally the individual would assume command of the incident response team(s) during an incident response though may be required to take advice from the incident support management group. At all times they would be

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	liaising and cooperating with members of the incident support management group.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Assess the situation and determine priorities	1.1. Seek incident information from appropriate on-site personnel 1.2. Monitor changes in the nature, extent and potential implications of the incident 1.3. Develop an incident response tactics based on analysis of the situation and consistent with the philosophies and strategies of the organisation 1.4. Identify required resources in accordance with the tactics developed

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ELEMENT	PERFORMANCE CRITERIA
	1.5. Continually review objectives in light of information updates, reports and feedback
2. Manage incident control centre	2.1. Brief incident control centre personnel on the scenario and tactics, their roles and responsibilities and of the way the centre will operate 2.2. Allocate tasks to incident control centre personnel commensurate with their roles and level of competence 2.3. Monitor performance of incident control centre personnel and review as the incident unfolds to determine ongoing requirements
3. Liaise with internal management and support structures	3.1. Regularly brief and provide communications to appropriate personnel in accordance with procedures 3.2. Monitor and review resources to determine changing requirements in accordance with changing circumstances 3.3. Ensure resources are available as required 3.4. Provide or obtain guidance and support to/from management and support structures.
4. Ensure communications systems are effective	4.1. Establish communications with personnel at the incident scene 4.2. Establish communications with other personnel on or off-site as required 4.3. Ensure communications systems are managed to provide optimum capability.
5. Conclude and review incident activities	5.1. Account for all personnel and other resources 5.2. Conduct a debrief and complete company incident reports 5.3. Evaluate and review tactics and procedures 5.4. Evaluate and document effectiveness of the control function and its interaction with command organisations 5.5. Communicate reports in accordance with company procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.

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REQUIRED SKILLS AND KNOWLEDGE
Required skills
Competence includes the ability to isolate the causes of issues within the incident response system and to be able to distinguish between causes of issues indicated by: • incorrectly determining the range and performance of resources required to address the incident • inappropriate resources being assigned to the incident response operation • failure of communications systems within the command post • overestimating the capabilities and competence levels of personnel.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • incident management techniques • operational duration of essential equipment • legislative and regulatory requirements • coaching and team building concepts • the organisation's policies and procedures protocols • how to communicate effectively under stress.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances. Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk-throughs of the relevant competency

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EVIDENCE GUIDE	
	components and may include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what-if' scenarios both in the facility (during demonstration of normal operations and walk-throughs of abnormal operations) and off the site.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responsive action. The emphasis should be on the ability to deal effectively with the incident or to contribute effectively to the recovery from the incident. Consistent performance should be demonstrated. In particular look to see that: • incident responses are in accordance with company procedures • correct incident response equipment (where required) is used appropriately • the safety and/or successful recovery of personnel and others affected by the incident response is afforded priority in the actions taken • actions taken do not inhibit incident response effectiveness or further contribute to the incident • appropriate documentation including reports, journal entries, logs and/or clearances are completed in accordance with procedures These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.
Context of and specific resources for assessment	Assessment will require (1) access to an accurately simulated environment in the absence of an on-site incident environment, or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning

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EVIDENCE GUIDE	
	behind the observable actions.
Method of assessment	In all workplace environments it may be appropriate to assess this unit concurrently with relevant PMAOMIR units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency covers incidents that may include: • fire, explosion • loss of containment, eg gas leaks, spills • damage to facilities, eg accidents, crashes, aircraft • natural disasters, eg cyclones, wind, rain, earthquake, flood • other, eg riot, civil unrest, terrorism It includes all such items of equipment and unit operations that form part of the incident response system, and may include: • schematics, designs, detail drawings, maps/charts • data systems, computers systems, electronic aids • manuals, designs, operation procedures and instructions • emergency vehicles or equipment • vessels and aircraft Incident response may include: • search and rescue operations • engagement of emergency services (fire, ambulance, rescue,

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RANGE STATEMENT	
	military) • liaison with other agencies (environmental, clean-up, specialised troubleshooters) Typical problems for your facility may include: • communications problems • inappropriate information • confusion over roles and responsibilities • lack of cooperation • inappropriate location of command post in relation to incident
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.
Relationship to Major Hazard Facility Legislation	Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)]. This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

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Co-requisite units

Co-requisite units	

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PMAOMIR430B Conduct and assess incident exercises

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit addresses the competence required to conduct and assess incident exercises. The person would be engaged in the construction of scenarios that approximate incident situations and exercises in dealing with those incidents.

Application of the Unit

Application of the unit	In a typical scenario the person would be a member of the incident room team and would be responsible for ensuring that both scheduled and unscheduled incident exercises took place. Results of these exercises would provide essential input into the audit and evaluation of incident preparedness of the facility. However, a proper post-exercise debrief is critical, as the exercise likewise has a strong educative value that promotes awareness and understanding among participants. Key aspects of the competence include: • establishing key objectives and strategic outcomes from incident exercises • improving the organisation's level of preparedness should an incident occur • improving the ability of personnel to respond appropriately and safely during an incident The person may: • communicate extensively both inside and outside the organisation • establish and support mechanisms for the design and conducting of incident exercises • review and evaluate the soundness of incident response plans and management systems. Generally the person would be an incident coordinator, manager or technical specialist and be part of an incident response team during the incident. They may have an ongoing role for managing the training and incident exercise system.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Determine objectives	1.1. Identify the need for the incident exercise in consultation with stakeholders 1.2. Determine the objectives of the exercise which meet the identified need
2. Design exercise	2.1. Select the exercise style, consistent with the objectives, in consultation with stakeholders 2.2. Design the exercise to ensure that objectives are met and address health, safety and environment issues 2.3. Identify and secure the resources to support the exercise 2.4. Distribute the exercise plan stating the objectives to appropriate personnel

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ELEMENT	PERFORMANCE CRITERIA
3. Manage exercise	3.1. Brief personnel involved in the exercise in respect of aims, objectives, expectations and activity outcomes 3.2. Use the exercise plan to initiate and facilitate the conduct and direction of the exercise 3.3. Conduct the exercise in a manner that addresses health, safety and environment issues 3.4. Monitor the progress of the exercise and provide feedback to personnel
4. Evaluate outcomes	4.1. Plan a post exercise debrief based on the conduct and outcomes of the exercise 4.2. Conduct a debrief with activity personnel 4.3. Review outcomes of the activities against objectives 4.4. Prepare and distribute a report of the activity to stakeholders

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by: • exercises are not conducted according to expectations • unintended or inappropriate exercise outcomes • mismatches between equipment and incident requirements • lack of appropriate feedback at the conclusion of training exercises • an injury occurs during the conducting of the training exercise.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • legislative and regulatory arrangements relating to incident management • incident response plan and management systems • incident management concepts and principles • adult learning principles • relevant networks • problem solving and decision making techniques • assessment and review techniques

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REQUIRED SKILLS AND KNOWLEDGE
• project management principles.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances. Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk-throughs of the relevant competency components and may include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what-if' scenarios both in the facility (during demonstration of normal operations and walk-throughs of abnormal operations) and off the site.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Consistent performance should be demonstrated. In particular look to see that competence in this unit reflects successful assessment in the critical aspects of: • clearly identifying the need for the exercise • planning, conduct and evaluation of exercise • hazard identification and control • demonstrated understanding and ability to address health, safety and environment issues • briefing and debriefing These assessment activities should include a range of

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EVIDENCE GUIDE	
	problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.
Context of and specific resources for assessment	Assessment will require (1) access to an accurately simulated environment or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what-ifs and a bank of questions to probe the reasoning behind the observable actions will likewise be required.
Method of assessment	It may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	Types of exercise may include: • scenario analyses • case studies • role plays • discussion exercises / desktop exercises • functional centre exercises (specific task environments within the workplace)

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RANGE STATEMENT	
	• field exercises • synthetic training • high level architecture • multimedia • virtual reality • distributed interactive software The design process may include: • determination of activity management structure • development of documentation • design of activity • issuing notifications • briefings and debriefings Activity personnel refers to people who assist in the conduct of the incident exercise and may include: • activity director • directing staff/coordinators/facilitators • safety officers • assessors/umpires • public relations staff • casualty simulators • role player liaison officers • administrative/welfare personnel to support learning and assessment tools Activity documentation may include: • activity notification • activity management checklists • general instructions • safety instructions • timetable/schedule of events, exercise plan • activity inputs
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.
Relationship to Major Hazard Facility	Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of

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RANGE STATEMENT	
Legislation	the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)]. This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOMIR444B Develop incident containment tactics

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the competency required in the development of tactics that are to be used in the containment of incidents in on-shore and off-shore facilities. The person would typically be an incident coordinator who would respond to the incident manager.

Application of the Unit

Application of the unit	In a typical scenario the person must ensure that the tactics proposed to be employed in response to an incident are appropriate to the circumstances and that actions taken in changing circumstances are effective in dealing with the incident. For instance the options available to incident response teams may be limited and include the need to follow specific procedures or sequences of events. In such a situation the organisation may need clearly defined procedures to ensure that all levels of incident response are aware of how the incident is to be confronted. Key aspects of this competency include: • forming clear and unambiguous views about the nature of the potential incident • evaluating and prioritising alternative tactics • analysing and interpreting information for trends and impacts • forwarding key information to those who require it The person may: • undertake critical analysis and problem solving • examine specific scenarios and develop tactics to physically contain those events • evaluate alternative tactics • recommend the most appropriate strategy • document strategies Generally the person would be an incident coordinator, manager or technical specialist and be part of an incident response team during the incident. They may have an ongoing role for managing incident information and/or the incident information system.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify incident containment tactics	1.1. Identify risk characteristics of the possible incident scenarios 1.2. Identify specific objectives of incident containment 1.3. Identify existing tactics 1.4. Develop a range of alternative tactics
2. Evaluate tactics	2.1. Predict incident behaviour and growth under alternative strategy scenarios 2.2. Consider issues relating to health, safety and environment 2.3. Identify and secure resource requirements for alternative tactics 2.4. Identify the impact of tactics on a range of factors 2.5. Identify and clearly document tactics

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ELEMENT	PERFORMANCE CRITERIA
	2.6. Obtain, collate and record feedback on tactics from stakeholders and incident managers and ensure this is reflected into the documentation according to procedures 2.7. Negotiate stakeholder needs and address
3. Select tactics	3.1. Document findings and feedback on the suitability of different tactics 3.2. Recommend preferred tactics according to procedures 3.3. Document tactics and build into strategies and training doctrines
4. Adopt strategies	4.1. Incorporate documentation on selected tactics into the appropriate incident management manuals 4.2. Notify stakeholders of new tactics 4.3. Incorporate selected tactics into incident training exercises

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by: • tactics fail to achieve the desired outcomes • input to tactic development is limited or of less value than expected • tactics when exercised show gaps or limitations in effectiveness • adoption of tactics proves problematic or resistance is encountered • incident containment proves to be of limited success.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • different types of incidents and risks • incident prediction • equipment required • rescue techniques • intervention and control techniques for heating, fires and explosions • incident resources and how to access them • incident response and disaster planning processes and techniques

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REQUIRED SKILLS AND KNOWLEDGE
• relevant legislation • hazard identification and control • risk management principles and techniques • structure, roles, capabilities and operational limitations of external resources and agencies • insurance policies and considerations • economic impact and considerations.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances. Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk-throughs of the relevant competency components and may include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what-if' scenarios both in the facility (during demonstration of normal operations and walk-throughs of abnormal operations) and off the site.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responsive action. The emphasis should be on the ability to deal effectively with the incident or to contribute effectively to the recovery from the incident. Consistent performance should be demonstrated. In particular look to see that: • understanding of incident containment tactics is demonstrated • understanding of the regulatory environment in which actions

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EVIDENCE GUIDE	
	need to take place is explained • the impact of the incident on environment, local community and economy of the organisation is understood • tactics are evaluated with consideration given to advantages and disadvantages • hazard risk identification and control is demonstrated • information gathering, analysis and communication are demonstrated to the required level • relevant personnel and experts/specialists with whom consultation must take place are identified These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.
Context of and specific resources for assessment	Assessment will require (1) access to an accurately simulated environment or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what-ifs and a bank of questions to probe the reasoning behind the observable actions will likewise be required.
Method of assessment	It may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

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RANGE STATEMENT	
Context	Incidents may include: • fire • explosion • gas or oil leak • accident • bomb threat • missing personnel • combination of the above Tactics are identified through: • consultation with experts • literature review Stakeholders may include: • shareholders • board of directors • employees • unions • contractors • suppliers • insurance companies • local community • fire brigade • police • local emergency management organisations • medical services • relevant public authority
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.
Relationship to Major Hazard Facility Legislation	Organisations within the Chemical, Hydrocarbons and Oil Refining industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)]. This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for

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RANGE STATEMENT	
	appropriate contextualisation and application of the unit to ensure compliance, however, remains with the individual organisation.

Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOMIR512B Establish incident response preparedness and response systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the strategic management functions required to develop and establish incident response preparedness and response systems. Using the results of hazard analyses as a starting point, a person would establish an interactive process and manage a collaborative effort which raises the ability of the organisation to respond to an incident.

Application of the Unit

Application of the unit	In a typical scenario a person would gather strategic operational and risk information and translate that into a framework of management and operational systems which enable organisation personnel to effectively prepare for and respond to an incident. During development of and on completion of the system the person would liaise with external agencies or mutual assistance partners. Key features of the competence would be: • establishment of management and operational systems • production of written strategies, tactics and procedures • testing and assessing aspects of the incident response system The person may: • identify and familiarise themselves with appropriate and relevant legislation • consult widely within the organisation • facilitate and manage the introduction and operation of the system • facilitate the review of the incident response system Generally, the person would be part of an incident management team and typically respond to an incident manager. While independent action may sometime be required, the person is expected to liaise, cooperate and consult with other members of the team as necessary.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Clarify the requirements for incident preparedness and response systems	1.1. Access, interpret and clarify the legislative and statutory requirements and standards related to incident preparedness and response systems. 1.2. Access, interpret and clarify the site requirements relating to systematic analysis of hazards, technical and operational information. 1.3. Consult and collaborate with relevant stakeholders, specialists and emergency services as necessary and in accordance with legislative requirements
2. Design incident response plans and systems	2.1. Develop an organisational structure for the management of incident preparedness and response from an analysis of relevant technical and operational

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ELEMENT	PERFORMANCE CRITERIA
	information 2.2. Establish incident response procedures for management of decision making processes and decision monitoring systems 2.3. Develop incident response procedures for the containment of various types of incidents from an analysis of relevant technical and operational information 2.4. Identify and develop required management and operational systems to support incident preparedness and response in compliance with legislative and site requirements 2.5. Build in processes for evaluation into the plan and system and comply with legislative requirements and/or special site needs 2.6. Ensure all aspects of the plan are consistent with commitments to health, safety and protection of the environment 2.7. Review the plan and systems in conjunction with relevant stakeholders and specialists
3. Manage the implementation of the incident preparedness plan and response systems	3.1. Document and disseminate plans and systems to the appropriate personnel 3.2. Identify required services, personnel, equipment and resources for various types of incidents 3.3. Ensure arrangements are made to ensure required services, personnel, equipment and resources are ready for immediate mobilisation/deployment
4. Ensure periodic and timely evaluation of the incident preparedness plans and response systems	4.1. Encourage, receive and review suggestions and recommendations for changes to incident preparedness plans and response systems and where appropriate, assist implementation 4.2. Initiate and conduct evaluations as prescribed by the plan and in accordance with commitment to health, safety, protection of the environment and legislative requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

Competence includes the ability to isolate the causes of problems within the incident response system and to be able to distinguish between causes of problems indicated by:

- poorly formulated and developed incident preparedness plans
- inaccurate or misleading site plans
- lack of access to site information and recording systems
- poor hazard identification and control practices
- inaccurate evaluation of systems
- inaccurate or misleading reports
- lack of identified or established site facilities for incident management
- inability to communicate effectively with people personally or through technical devices during incidents
- ineffective of disorganised personnel and resources
- poorly developed action plans
- inappropriate or improper information analyses
- inappropriate or ineffective decisions
- inability to participate as a team member.

Required knowledge

The knowledge referred to in the Evidence Guide for this unit includes:

- incident response and disaster planning processes and techniques
- relevant legislation and standards
- equipment required for different types of equipment
- incident resources and how to access them
- different types of incidents and risks
- hazard identification and control methods and procedures
- risk management principles and techniques
- structure, roles, capabilities and operational limitations of external resources and agencies
- rescue techniques
- intervention and control techniques for heating, fires and explosions
- media policies and procedures
- insurance policies and considerations
- economic impact and considerations.

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Evidence Guide

EVIDENCE GUIDE
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Overview of assessment	Assessment for this unit of competency will be by way of simulation or observation under incident conditions. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which can include a variety of incident circumstances. Simulations must, as closely as possible, approximate actual incident conditions and should be based on the actual facility. Assessments should include walk-throughs of the relevant competency components and may include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of 'what-if' scenarios both in the facility (during demonstration of normal operations and walk-throughs of abnormal operations) and off the site.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responsive action. T he emphasis should be on the ability to deal effectively with the incident or to contribute effectively to the recovery from the incident. Consistent performance should be demonstrated. In particular look to see that: • incident response planning is appropriate for the circumstances • containment strategies are developed for management of different types of incidents • understanding of the role of stakeholders and specialists at incidents is demonstrated • understanding of the structure and roles of on-site functions and personnel is demonstrated

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EVIDENCE GUIDE	
	• information gathering, analysis and communication are conducted effectively • action plan development and evaluation meets organisational requirements • establishment of incident operations facilities meets organisational requirements • effective post-incident management planning is undertaken • evaluations of incident preparedness and response plans are successfully demonstrated These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from past workplace incident history, incidents in similar workplaces around the world, hazard analysis activities and/or similar sources.
Context of and specific resources for assessment	Assessment will require (1) access to an accurately simulated environment or (2) a suitable method of gathering evidence of responding ability over a range of situations. A bank of scenarios/case studies/what-ifs and a bank of questions to probe the reasoning behind the observable actions will likewise be required.
Method of assessment	It may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.

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RANGE STATEMENT	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	Incidents may include: • fire • explosion • gas or oil leak • accident • bomb threat • missing personnel • combination of the above Management and operational systems to support incident preparedness and response include (but are not limited to): • evacuation • emergency operations structure • communications • information management • documentation and reporting requirements • resource management • training • audit and review system • financial management • post incident actions External services may include (but are not limited to): • fire brigade • ambulance • medical services • local emergency management organisations • media • security services • solicitors • engineers • scientists
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.
Relationship to	Organisations within the Chemical, Hydrocarbons and Oil Refining

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RANGE STATEMENT	
Major Hazard Facility Legislation	industries may find themselves falling under the provisions of various Major Hazard Facilities legislation. In developing this unit consideration has been given to the requirements of Sections 8 and 9 of the National Standard for the Control of Major Hazard Facilities [NOHSC:1014(2002)] and the National Code of Practice for the Control of Major Hazard Facilities [NOHSC:2016(1996)]. This unit will assist individuals to meet some of their obligations under the relevant State or Territory legislation. Responsibility for appropriate contextualisation and application of the unit to ensure compliance however, remains with the individual organisation.

Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOPS305B Operate process control systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the operation of a centralised control panel. These controllers use a range of control algorithms and multiple control loops. The panel will control multiple vessels/plant items and or products. It will typically be located off plant in a control room.

Application of the Unit

Application of the unit	In a typical scenario an operations technician uses a centralised process control system to operate and monitor the plant. This control system would typically be a distributed control system (DCS) and may include other local controllers which are integral to its operation (stand alone local controllers are covered by *PMAOPS216B Operate local control system*). This panel technician/central control room operator has an overall responsibility for the operation of all units of equipment covered by the control system. As such they often also take a lead role as part of the operating team. Competencies required by this role other than panel competencies as such are not covered by this unit. The operations technician would: • identify, correct and report operational problems • be aware of and contribute to a safe working environment • contribute to the safe and productive operation of the system • operate, monitor and maintain equipment using relevant procedures • take appropriate action following an alarm or out of specification condition developing Generally the operations technician would be part of a team during start up, shut down and normal operating conditions and would be expected to be capable of demonstrating competence in all parts of this unit. He/she would be taking a leading role in liaising and cooperating with other members of the team. Typically the panel operator will liaise with other 'outside operators', however this unit does not preclude the situation where the panel operator may also undertake 'outside' functions.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work.	1.1. Identify work requirements 1.2. Identify and control hazards 1.3. Coordinate with appropriate personnel
2. Use operator interface.	2.1. Use keyboards, track ball and monitor and/or stand alone controllers to access control system/panel 2.2. Monitor the process using the operator interfaces 2.3. Select appropriate controller modes 2.4. Access historical data and information 2.5. Acknowledge messages and alarms.
3. Access control information.	3.1. Obtain relevant data and information from the control

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ELEMENT	PERFORMANCE CRITERIA
	system by applying systems knowledge 3.2. Identify the status of individual pieces of equipment from the control panel and use information to identify potential faults 3.3. Minimise fluctuations and variations in process through the interpretation of existing trends and control schematics 3.4. Record process variations/irregularities to procedures.
4. Control process variations and monitor operations.	4.1. Use historical data to assist the identification of problems 4.2. Process available information to identify potential faults 4.3. Undertake required set point/output changes to meet plant and process requirements 4.4. Optimise plant operating conditions in accordance with guidelines 4.5. Adjust production in response to test results and control panel information 4.6. Monitor key process and environmental variables and take appropriate action 4.7. Adjust controller settings in accordance with procedures 4.8. Use fine tuning software as appropriate 4.9. Coordinate with up stream and downstream units as appropriate 4.10. Record adjustments and variations to specifications/schedules 4.11. Communicate to appropriate personnel as required.
5. Facilitate planned and unplanned process start-ups and shut-downs.	5.1. Select and apply procedures to planned startup and shutdown processes 5.2. Select and apply procedures to unplanned shutdown processes 5.3. Implement all required emergency responses 5.4. Communicate necessary information to all personnel affected by events 5.5. Log all required information.
6. Respond to alarms or out of specification conditions.	6.1. Identify system(s) affected by the alarm or condition 6.2. Interpret alarms and prioritise actions to be taken 6.3. Take appropriate action to respond to the alarm or

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ELEMENT	PERFORMANCE CRITERIA
	incident 6.4. Deal with any out of specification material in accordance with procedures 6.5. Communicate the problem/solution to appropriate personnel 6.6. Record the information as required 6.7. Provide details of the alarm and action taken to the next shift at change over

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to distinguish between causes of problems/alarms/fault indications such as: • instrument failure/malfunction • electrical failure/malfunction • mechanical failure/malfunction • equipment design deficiencies • product parameters (temperature, flows, pressure and levels) • process control system malfunction • power/utility failures. An ability to communicate with other work groups and personnel during the operation and monitoring of this panel is considered an essential Element of this unit of competency.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • the architecture and location of the process/production equipment • specific plant process operations • interactions between plant items/processes • product specifications and tolerances • systems operating parameters • system integrity limits • process control philosophies and strategies • emergency shutdown procedures

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REQUIRED SKILLS AND KNOWLEDGE
• process specific physics, chemistry and mathematics • basic science of upstream and downstream processes • relevant chemistry of the process to the level of interpreting chemical equations and manipulating factors controlling rate of reaction and yield (or equivalent physics for a physical process/biochemistry for a biochemical process) - chemistry to include both intended products and interfering reactions, eg salts, hydrates • impact of external factors, eg variations in weather, feed etc • process drawings, eg P&ID, PFD • cause and effect • basis of control for the plant/s • instrumentation and control systems, including feed forward, feed back and open control • instrumentation and control system components, eg relevant primary sensing devices, final control elements, transducers/transmitters • control loops, including PID control, set points, controlled variable, indicated variable • interaction between multiple control loops, including cascade control • impacts of changing controller settings and the limits within which changes can be made • effective communication techniques • organisation procedures • UPS and its applications and use.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may

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EVIDENCE GUIDE	
	also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or of training for competencies practiced in life threatening situations, simulation may be used for the bulk of the training. This unit of competency requires an application of the knowledge contained in the use of the process control system and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk-throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responses. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster. Consistent performance should be demonstrated. In particular look to see that: • early warning signs of equipment/processes needing attention or with potential problems are recognised • the range of possible causes can be identified and analysed and the most likely cause determined • appropriate action is taken to ensure a timely return to full performance • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution. These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk-through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations, which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources for assessment	Assessment will require access to a process control system over an extended period of time, or a suitable

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EVIDENCE GUIDE	
	method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork, communication and leadership units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicized wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes all such items of equipment and unit operations which form part of the control system. For your control room this may include (select relevant items): • process control systems, eg Distributed Control Systems • personal computers • printers • fire and gas detection/protection systems • emergency shutdown systems • communications systems. Typical problems for your plant may include: • loss of power/utilities • analysing failure modes

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RANGE STATEMENT	
	• variation/loss of feed • unstable control of pressure, temperature level and flows • control equipment failure • process plant trips • change in atmospheric conditions (rain, temperature, wind, lightning) • emergency situations.
Alarms or abnormal conditions	Alarms or other abnormal conditions includes: • emergency, including emergency shut down • partial or complete controller failure.
Other problems	Other problems includes: • problem solving control functions
Appropriate action	Appropriate action includes: • determining problems needing action • determining possible fault causes • rectifying problem using appropriate solution within area of responsibility • following through items initiated until final resolution has occurred • reporting problems outside area of responsibility to designated person.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit sector	Operational/technical

Competency field

Competency field	

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Co-requisite units

Co-requisite units	

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PMAOPS312B Undertake ship loading/unloading operations

Modification History

Release 2 – Minor changes to clarify unit and broaden its application, and minor editorial corrections.

Unit Descriptor

In a typical scenario, the operations technician is responsible for the custody transfer of materials/products from the loading area to vessels or from vessels to storage areas. The operations technician will report the state of readiness of the loading facilities before starting transfer to the loading master and to the terminal operator.

Application of the Unit

Loading areas can include:

- terminal facilities
- jetties
- production platforms
- floating storage and offtake/floating production storage and offtake (FSO/FPSO).

The operations technician will control the cargo transfer rate within safe limits, which are agreed between the ship and/or the terminal prior to commencing transfer. Jetty and platform operators will observe the mooring and direct the positioning of ships in order to facilitate the safe connection and operation of loading arms and gantries. The operations technician will complete all necessary documentation for the control and calculation of product volumes.

Generally the operations technician would be part of a team during loading activities and may be expected to be capable of performing all parts of this unit. At all times they would be liaising and cooperating with other members of the team.

This unit applies to products such as liquefied natural gas (LNG), liquefied petroleum gas (LPG), oil, chemicals and particulates.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Prepare for work	1.1	Identify work requirements
		1.2	Identify and control hazards
		1.3	Coordinate with appropriate personnel
2	Prepare for ship transfer	2.1	Check that the vessel is ready for product transfer
		2.2	Activate/bring on line all safety systems
		2.3	Ensure all operational conditions for transfer of product are satisfied
		2.4	Ensure safety check documentation is completed
3	Transfer product to/from ship	3.1	Check transfer advice/documentation and complete required records
		3.2	Engage fire and deluge protection systems as required
		3.3	Launch and retrieve batching pigs as required
		3.4	Commence the transfer process of the specified product
		3.5	Control and monitor transfer rates and take appropriate action
		3.6	Monitor the progress of the transfer and levels and take appropriate action

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		3.7	Identify vapour or product leakages/spills and take appropriate action
		3.8	Apply emergency procedures as required
4	Complete transfer process	4.1	Achieve or satisfy capacities and transfer requirements within the allowable timeframes and schedules
		4.2	Retrieve batching pigs as required
		4.3	Decommission, isolate and disengage transfer systems from or to the vessel as required
		4.4	Continue to monitor and control fire, deluge and safety systems during the finalization of the loading process and let-go of the vessel as required
		4.5	Complete all required logs and documentation and communicate the results of the transfer to the appropriate personnel
		4.6	Shut down and bring transfer facilities off line, ensuring that the area has been made safe after the transfer has been completed
5	Isolate and de-isolate plant	5.1	Isolate plant
		5.2	Make safe for required work
		5.3	Check plant is ready to be returned to service
		5.4	Prepare plant for return to service

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required skills

Competence includes the ability to isolate the causes of problems to an item of equipment within the compressor system and distinguish between causes of problems/alarm/fault indications, such as:

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- instrument failure/wrong reading
- electrical failure
- mechanical failure
- operational problems
- metering problems
- spills/leaks
- meteorological events

Required knowledge

The knowledge referred to in the Evidence Guide for this unit includes:

- all items on a schematic of the ship loading/unloading system and the function of each
- the nature/condition of materials being transferred to and from the vessel and the factors to be considered in the transfer operation
- effects of temperature and pressure in transfer operations
- storage and product transfer techniques and mediums
- principles of operation of plant/equipment
- physics and chemistry relevant to the process unit and the materials/products being transferred
- process parameters and limits (e.g. temperature, pressure, flow, pH and amps)
- duty of care obligations
- hierarchy of control
- communication protocols (e.g. radio, phone, computer, paper and permissions/authorities)
- routine problems, faults and their resolution
- relevant alarms and actions
- plant process idiosyncrasies
- correct methods of starting, stopping, operating and controlling flow
- corrective action appropriate to the problem cause
- function and troubleshooting of major internal components and their problems
- types and causes of flow problems within operator's scope of skill level and responsibility

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Overview of assessment Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of

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competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.

Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3-D virtual reality interactive systems. In the case of evacuation training or of training for competencies practised in life threatening situations, simulation may be used for the bulk of the training.

This unit of competency requires an application of the knowledge contained in the use of ship loading and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk-throughs of abnormal operations) and off the plant.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster.

Consistent performance should be demonstrated. In particular look to see that:

- early warning signs of equipment/processes needing attention or with potential problems are recognised
- the range of possible causes can be identified and analysed and the most likely cause determined
- appropriate action is taken to ensure a timely return to full performance
- obvious problems in related plant areas are recognised and an appropriate contribution made to their solution.

These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk-through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.

Context of and specific resources for assessment

Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of

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	questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with relevant fluid flow and tank farming units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.

Codes of practice/ standards

Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.

Context

This unit of competency includes all items of equipment and unit operations which form part of the ship loading/unloading system. For your plant this may include (select relevant items):

- loading/unloading systems
- loading arms
- gantries
- fire extinguishers, hoses and jets
- gas and other hazard monitoring systems
- mooring lines
- compressors
- storage tanks
- pipelines, trunklines and conveyors
- pig launcher, pig trap and batching pigs
- measurement systems

Typical problems

Typical problems for your plant may include:

- surging
- control of temperature and pressure
- variations in feed
- product leakage

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	• environmental hazards
Ship transfer	Ship transfer includes: the transfer of product or materials to or from ships (i.e. loading or unloading of ships)
Ready for transfer	Ready for transfer includes: • secured and properly moored • transfer points aligned
Safety systems	Safety systems include systems required to protect the vessel and personnel during product transfer, such as: • deluge • fire protection
Operational conditions for transfer	Operational conditions for transfer include: connect and initiate loading pumps/conveyors arms/hoses
Control of transfer rates	Transfer rates may be controlled to ensure: • the product is transferred safely • transfer is within the defined storage capacities
Appropriate action	Appropriate action includes: • determining problems needing action • determining possible fault causes • rectifying problem using appropriate solution within area of responsibility • following through items initiated until final resolution has occurred • reporting problems outside area of responsibility to designated person
Procedures	Procedures may be written, verbal, computer-based or in some other form. They include: • all work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (e.g. Responsible Care) and government

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	regulations.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Operational/technical

Competency field

Not applicable

Co-requisite units

Not applicable

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PMAOPS330B Communicate and monitor pipeline activities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	In this scenario operations technicians maintain a watching brief over the pipeline from the pipeline control centre. The centre will be the hub for pipeline activities in order to achieve minimum risk to continued safe and efficient operation of the pipeline system. The pipeline control centre operations technician will communicate with field personnel to obtain information and direct field operators to check and maintain pipeline operations.

Application of the Unit

Application of the unit	The operations technician will: • ensure the safety of the system and check operational equipment prior to start up • maintain productivity through the monitoring of flows, pressures and temperatures in the field • maintain communication with product suppliers and user customers to maintain the safe and efficient operation of the pipeline. Generally the pipeline control centre operations technician would be part of a team during pipeline startup and shutdown procedures. However, they will be expected to be capable of performing all parts of this unit on their own. At all times they would be liaising and cooperating with other members of the team and customers. AS 2885 Part 3 forms the principle reference standard for this competency.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Gather information about pipeline operation needs.	1.1. Respond to and record messages and information received from field operations and pipeline system stations 1.2. Interpret and acknowledge alarm codes correctly to ensure the correct response strategy is selected and applied to the situation 1.3. Clarify additional information needs and select an appropriate communication medium to deliver the information required 1.4. Improve operational efficiency through adequate and timely application of information provided 1.5. Interpret and action customer/shipper gas forecasts to ensure correct gas flow rates into the pipeline system are achieved.
2. Communicate pipeline information.	2.1. Monitor activities of pipeline personnel in the field and data from the control centre 2.2. Evaluate internal messages and response communications concerning system alarms/incidents to establish the scope and severity of the alarm/ incident 2.3. Convey pipeline system operation information to relevant personnel in other work areas to ensure safe and efficient operation of the pipeline system 2.4. Relay information to technicians and other services/parties

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ELEMENT	PERFORMANCE CRITERIA
	so that fault finding or safety checks can be conducted to identify risks to product supply, pipeline equipment, environment and personnel 2.5. Authorise, record and monitor permits to work to allow operational activities to be undertaken or cancelled.
3. Coordinate pipeline systems operations.	3.1. Monitor field and pipeline station operations data 3.2. Monitor and observe equipment operating conditions, pressures and temperatures, and maintain correct equipment operating parameters 3.3. Identify faults and initiate the required repair or reporting of the fault 3.4. Isolate identified faults in the pipeline as appropriate 3.5. Respond to system alarms and emergencies 3.6. Determine the required course of action or emergency response to the identified system condition/ emergency 3.7. Complete and document pre-shutdown checks 3.8. Shut down the pipeline system under either normal or emergency conditions in accordance with operating procedures 3.9. Confirm all identified maintenance is in compliance with the permit to work system and administer to ensure that all work complies with all issued permits.
4. Record and report.	4.1. Record and monitor field personnel movements to ensure the safety of all personnel in the field 4.2. Report safety and environmental risks or faulty equipment to designated personnel for further action or advice concerning the selection of the appropriate response or course of action 4.3. Interpret and maintain field inspection records and reports 4.4. Complete operations and production reports 4.5. Perform shift handover procedures.
5. Control hazards.	5.1. Identify hazards in work area 5.2. Assess the risks arising from those hazards 5.3. Implement measures to control those risks in line with procedures and duty of care.
6. Resolve problems.	6.1. Identify possible problems in equipment or process 6.2. Determine problems needing action 6.3. Determine possible fault causes 6.4. Rectify problem using appropriate solution within area of responsibility

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ELEMENT	PERFORMANCE CRITERIA
	6.5. Follow items initiated up until final resolution has occurred 6.6. Report problems outside area of responsibility to designated person.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to isolate the causes of problems to an item of equipment within the compressor system and distinguish between causes of problems/alarm/fault indications such as: • pipeline pressure variations • instrument failure/wrong reading • electrical failure • mechanical failure • operational problems.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • pipeline system functions within the design parameters and design philosophy • process information schemata of the pipeline system and associated facilities • pipeline operating principles, parameters and product specifications • relevant workplace documentation • SCADA systems • alarm systems and emergency systems, including fire and shutdown • the 'permit to work' system • architecture of the pipeline system • pipeline system operating parameters • gas quality/analysis equipment operation • MSDS information. • physics and chemistry relevant to the process unit and the materials processed • process parameters and limits, eg temperature, pressure, flow, pH • duty of care obligations • hierarchy of control • communication protocols, eg radio, phone, computer, paper, permissions/authorities

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REQUIRED SKILLS AND KNOWLEDGE
• routine problems, faults and their resolution • relevant alarms and actions • plant process idiosyncrasies • correct methods of starting, stopping, operating and controlling process • corrective action appropriate to the problem cause • function and troubleshooting of major components and their problems • types and causes of problems within operator's scope of skill level and responsibility.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant/ pipeline and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life-threatening situations, simulation may be used for the bulk of the training. This unit of competency requires an application of the knowledge contained in the use of the systems in the pipeline control centre and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk-throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from

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EVIDENCE GUIDE	
competency in this unit	a disaster. Consistent performance should be demonstrated. In particular look to see that: • early warning signs of equipment/processes needing attention or with potential problems are recognised • the range of possible causes can be identified and analysed and the most likely cause determined • appropriate action is taken to ensure a timely return to full performance • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution. These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Consider co-assessment with: • *MSAPMPER202A Observe permit work* • *PMAOPS230B Monitor, operate and maintain pipeline stations and equipment*.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT
The Range Statement relates to the unit of competency as a whole. It allows for different work

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RANGE STATEMENT	
environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes all such items of equipment and unit operations which form part of the pipeline control system. For your organisation this may include (select relevant items): • radio communications equipment, email, fax and telephones • heaters, furnaces and exchangers • station instrumentation/metering equipment • condition monitoring equipment • process control equipment • gas quality and analysis equipment • valves, actuators and flanges • piping systems • pressure vessels/filtration equipment • compressors and prime movers • cathodic protection systems.
Typical problems	Typical problems for your plant may include: • communications disruptions • corrosion/hydrate formation • variations in flow temperature and/or pressure • failures of piping, valves or flanges • pipeline leakages.
Appropriate action	Appropriate action includes: • determining problems needing action • determining possible fault causes • rectifying problem using appropriate solution within area of responsibility • following through items initiated until final resolution has occurred • reporting problems outside area of responsibility to designated person.
Procedures	Procedures may be written, verbal, computer-based or in some other form. They include: • all work instructions • standard operating procedures

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RANGE STATEMENT	
	• formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Responsible Care) and government regulations.
Occupational Health and Safety (**OHS**)	The identification and control of hazards and the application of OHS is to be in accordance with current, applicable legislation and regulations and company procedures. All work is carried out at all times in accordance with these requirements

Unit Sector(s)

Unit sector	Operational/technical

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOPS402A Respond to abnormal process situations

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit applies an in depth knowledge of process and plant to the recognition and solving of more complex/less obvious process/plant/ technical problems.

Application of the Unit

Application of the unit	In a typical scenario, a senior technician or para-professional investigates a plant unit/part of the process which is not performing as well as it has/as expected. They methodically investigate this technical problem, come to a conclusion as to the cause and then initiate appropriate corrective action. The corrective action may well be beyond the scope of competency and responsibility of the person to implement. This unit applies to problems which are not solvable by direct observation and require systematic investigation: • damage to/wear of tower trays • internal leaks of heat exchangers • collapse of/channelling in tower/column/vessel packing The technician would: • clarify the problem • analyse problem cause(s) • recommend a solution to the problem. Generally the technician would work alone for this unit, although the ability to communicate with all internal and external stakeholders is vital.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units	*MSAPMSUP390A*	*Use structured problem solving tools*

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Recognise there is a problem.	1.1. Compare current performance with expected/historic performance 1.2. Identify plant/process areas with poor performance 1.3. Check the impact of routine adjustments to improve performance 1.4. Identify problems not solved by the routine solutions.
2. Define the problem.	2.1. Apply problem isolation techniques to isolate problem to a small part of the plant/process 2.2. Quantify the effect of the problem in operational terms 2.3. Postulate possible causes of the problem 2.4. Identify types of evidence for each possible cause 2.5. Investigate problem to accumulate evidence of cause type 2.6. Analyse data to confirm cause of problem 2.7. Determine the level of severity of the problem, priority of any required action.
3. Develop solution.	3.1. Discuss possible solutions to cause with relevant people 3.2. Determine whether a quick fix is needed

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ELEMENT	PERFORMANCE CRITERIA
	3.3. Arrange for implementation of quick fix if required 3.4. Check effectiveness of quick fix and take appropriate action 3.5. Agree required solution with appropriate people 3.6. Arrange for required solution to be undertaken in appropriate time frame 3.7. Follow items initiated through until final resolution has occurred 3.8. Check effectiveness of solution and take appropriate action 3.9. Complete reports to procedure.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
This unit requires skills of: • analysis • problem solving • negotiation • communication • basic mathematics
Required knowledge
Competence includes a deep understanding of: • plant equipment, its characteristics and limitations • impact of variations in plant/process and the distinctive signs of each variation • process chemistry, physics and biochemistry as relevant, eg to the extent of writing chemical equations and identifying factors controlling reaction rate and yield or equivalent • problem isolation techniques • problem analysis techniques • organisation approval processes

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Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include a range of problems, problem causes and environments. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual problems and should include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what-if scenarios.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to define and analyse the problem as well as deal with the stakeholders. The stakeholders should be satisfied with the solution, as well as the solution being technically sound. Consistent performance should be demonstrated. In particular look to see that: • different types of problems can be analysed and resolved • different types of stakeholders can be satisfied • the range of possible causes can be identified and analysed and the most likely cause determined • appropriate action is taken. These aspects may be best assessed using a range of scenarios/case studies/what-ifs. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the past history and similar sources.
Context of and specific resources for	Assessment will require a suitable method of

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EVIDENCE GUIDE	
assessment	gathering evidence of problem solving ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes problems in the plant, plant equipment or process which may make itself evident through lower quality, lower rates, greater variability or greater difficulty in control.
Health, safety and environment (HSE)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

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Unit Sector(s)

Unit sector	Operational/technical

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOPS405B Operate complex control systems

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit covers the operation of a complex control panel. These controllers use a large number of control loops and a broad range of control algorithms. The panel will control entire plant areas and multiple products/ process streams. It will typically be located off plant in a control room and will require managing multiple complex tasks.

Application of the Unit

Application of the unit	In a typical scenario an operations technician uses a complex process control system to operate and monitor an entire plant area consisting of several plant units/systems. This control system would typically be an advanced control system and may include operation of simpler control systems as part of its operation. This panel technician/central control room operator has an overall responsibility for the operation of all units of equipment within the entire plant area and may include optimization of the area using the control system. As such they often also take a lead role as part of the operating team. Competencies required by this role other than panel competencies as such are not covered by this unit. The operations technician would: • monitor and operate equipment in the entire plant area • solve process problems related to the plant area • liaise with other plant areas as necessary • use the advanced control features of the control system Generally the operations technician would be part of a team during start up, shut down and normal operating conditions and would be expected to be capable of demonstrating competence in all parts of this unit. He/she would be taking a leading role in liaising and cooperating with other members of the team. Typically the panel operator will liaise with other 'outside operators', however this unit does not preclude the situation where the panel operator may also undertake 'outside' functions.

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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use operator interface.	1.1. Use keyboards, track ball and monitor and/or stand alone controllers to access control system/panel 1.2. Monitor the process using the operator interfaces 1.3. Select appropriate controller modes 1.4. Access historical data and information 1.5. Acknowledge messages and alarms 1.6. Access advanced control features as appropriate
2. Access control information.	2.1. Obtain relevant data and information from the control system by applying systems knowledge 2.2. Identify the status of individual pieces of equipment from the control panel and use information to identify

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ELEMENT	PERFORMANCE CRITERIA
	potential faults 2.3. Minimise fluctuations and variations in process through the interpretation of existing trends and control schematics 2.4. Determine the overall operating effectiveness of the plant area related to the required targets for the area 2.5. Record process variations/irregularities to procedures.
3. Control process variations and monitor operations.	3.1. Use historical data to assist the identification of problems 3.2. Process available information to identify potential faults 3.3. Undertake required set point/output changes to meet plant area and process requirements 3.4. Adjust production in response to test results and control panel information 3.5. Monitor key process and environmental variables and take appropriate action 3.6. Adjust controller settings in accordance with procedures 3.7. Use advanced control features as appropriate 3.8. Optimise entire plant area in accordance with guidelines 3.9. Undertake calibration operations as appropriate 3.10. Coordinate with stakeholders external to the plant area as appropriate 3.11. Record adjustments and variations to specifications/schedules 3.12. Communicate to appropriate personnel as required.
4. Facilitate planned and unplanned process start-ups and shut-downs.	4.1. Select and apply procedures to planned startup and shutdown processes 4.2. Select and apply procedures to unplanned shutdown processes 4.3. Implement all required emergency responses 4.4. Communicate necessary information to all personnel affected by events 4.5. Log all required information.
5. Respond to alarms or out of specification conditions.	5.1. Identify system(s) affected by the alarm or condition 5.2. Interpret alarms and prioritise actions to be taken

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ELEMENT	PERFORMANCE CRITERIA
	5.3. Respond to the alarm or incident by following procedures 5.4. Deal with any out of specification material in accordance with procedures 5.5. Communicate the problem/solution to appropriate personnel 5.6. Record the information as required 5.7. Provide details of the alarm and action taken to the next shift at change over 5.8. Follow the incident up see that appropriate action has been taken.
6. Control hazards.	6.1. Identify hazards in the production/processing work area 6.2. Assess the risks arising from those hazards 6.3. Implement measures to control risks in line with procedures and duty of care
7. Resolve other problems within scope of responsibility.	7.1. Identify possible problems in equipment, control systems or process 7.2. Determine problems needing action 7.3. Determine possible fault causes 7.4. Rectify problem using appropriate solution within area of responsibility 7.5. Follow initiated items through until final resolution has occurred 7.6. Report problems outside area of responsibility to designated person.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to distinguish between causes of problems/alarms/fault indications such as: • instrument failure/malfunction • electrical failure/malfunction

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REQUIRED SKILLS AND KNOWLEDGE

- mechanical failure/malfunction
- equipment design deficiencies
- product parameters (temperature, flows, pressure and levels)
- process control system malfunction
- power/utility failures
- software problems
- multitasking.

An ability to communicate with other work groups and personnel during the operation and monitoring of this panel is considered to be an essential element of this unit of competency.

Required knowledge

The knowledge referred to in the Evidence Guide for this unit includes:

- advanced control features
- interactions between control loops
- interactions between plant units within the entire plant
- the architecture and location of the process/production equipment
- specific plant process operations
- interactions between plant items/processes
- product specifications and tolerances
- systems operating parameters
- system integrity limits
- process control philosophies and strategies
- emergency shutdown procedures
- process specific physics, chemistry and mathematics
- relevant chemistry of the process to the level of writing chemical equations and identifying and manipulating factors controlling rate of reaction and yield (or equivalent physics for a physical process/biochemistry for a biochemical process) - chemistry to include both intended products and interfering reactions (eg salts, hydrates)
- basic science of upstream and downstream processes
- interactions between plant area and other value stream members
- impact of external factors, eg variations in weather, feed etc
- complex process drawings, eg P&ID, PFD, cause and effect
- basis of control for the plant/s
- instrumentation and control systems including feed forward, feed back and open control
- instrumentation and control system components (eg relevant primary sensing devices, final control elements, transducers/transmitters)
- control loops (including PID control, set points, controlled variable, indicated variable)
- interaction between multiple control loops (including cascade control)
- impacts of changing controller settings and the limits within which changes can be made
- effective communication techniques

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REQUIRED SKILLS AND KNOWLEDGE
• organisation procedures • UPS and its applications and use.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or of training for competencies practiced in life threatening situations, simulation may be used for the bulk of the training. This unit of competency requires an application of the knowledge contained in the use of the process control system and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate responses. The emphasis should be on the ability to stay out of

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EVIDENCE GUIDE	
	trouble rather than on recovery from a disaster. Consistent performance should be demonstrated. In particular look to see that: • early warning signs of equipment/processes needing attention or with potential problems are recognised • the range of possible causes can be identified and analysed and the most likely cause determined • appropriate action is taken to ensure a timely return to full performance • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution. These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk-through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations, which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources for assessment	Assessment will require access to a process control system over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork, communication and leadership units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

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Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicized wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes all such items of equipment and unit operations which form part of the control system. For your control room this may include (select relevant items): • process control systems (eg Distributed Control Systems) • use of multiple control systems • personal computers • printers • fire and gas detection/protection systems • emergency shutdown systems • communications systems. Typical problems for your plant may include: • operating without advanced control features • loss of power/utilities • analysing failure modes • variation/loss of feed • unstable control of pressure, temperature level and flows • control equipment failure • process plant trips • change in atmospheric conditions (rain, temperature, wind, lightning) • emergency situations.
Alarms or abnormal conditions	Alarms or other abnormal conditions includes: • emergency, including emergency shut down • partial or complete controller failure.
Other problems	Other problems includes: • problem solving control functions
Appropriate action	Appropriate action includes: • determining problems needing action

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RANGE STATEMENT	
	• determining possible fault causes • rectifying problem using appropriate solution within area of responsibility • following through items initiated until final resolution has occurred • reporting problems outside area of responsibility to designated person.
Procedures	Procedures may be written, verbal, computer-based or in some other form. They include: • all work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Responsible Care) and government regulations.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit sector	Operational/technical

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMAOPS410B Monitor remote production facilities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	In a typical scenario, a technician in a central location looks after the operation of a remote production facility. This may be achieved by using ground based or satellite communications systems. The competency covers the operation and management of remote plants, treatment stations or satellite locations.

Application of the Unit

Application of the unit	Typically these stations may include: • wellheads • separation facilities • utility systems • remote pumping and compression stations • remote plants • fire and gas safety systems and associated piping and instrumentation. The operations technician would: • identify and rectify operational problems • conduct well testing • conduct critical function testing. Control of a remote production facility may require operation and process monitoring via a remote control system. Generally the operations technician would operate independently and be expected to be capable of performing all parts of this unit. However they may be part of a team during critical inspections or maintenance operations. At all times they would be liaising and cooperating with other members of the team.

Licensing/Regulatory Information

Not applicable.

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Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work.	1.1. Identify work requirements 1.2. Identify and control hazards 1.3. Coordinate with appropriate personnel
2. Conduct product separation.	2.1. Centralise and prepare well products for initial multi-phase separation, storage and distribution as determined by the required production targets and objectives 2.2. Use multi-phase high and low pressure separation, utilising heat and chemical treatments, to effectively separate the product 2.3. Monitor the separation process via control room operation to ensure all product flows, pressures and temperatures are maintained within correct operating parameters 2.4. Operate and monitor all required utility services to assist in the separation process.
3. Recover and measure product.	3.1. Transfer treated waste water from the separation process for further treatment as required prior to re-injection or disposal 3.2. Ensure that all available product is recovered and all waste water

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ELEMENT	PERFORMANCE CRITERIA
	is made safe for further use or disposal within environmental limits 3.3. Measure and sample produced gas as required 3.4. Measure collected product to determine the level of available stocks for further transfer and for accounting purposes 3.5. Take appropriate action.
4. Transfer product.	4.1. Check transfer process equipment required to ensure it is working within agreed operating parameters 4.2. Transfer product to a processing facility for further treatment and enhancement 4.3. Monitor transfers and take appropriate action 4.4. Log and record all product transfers and communicate as required 4.5. Distribute data collected to appropriate personnel.
5. Isolate and de-isolate plant.	5.1. Isolate plant 5.2. Make safe for required work 5.3. Check plant is ready to be returned to service 5.4. Prepare plant for return to service.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence includes the ability to isolate the causes of problems to an item of equipment within the compressor system and to be able to distinguish between causes of problems/alarm/fault indications such as: • product contamination • instrument failure/wrong reading • electrical failure • mechanical failure • operational problems • pressure losses and leakage.
Required knowledge

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REQUIRED SKILLS AND KNOWLEDGE
The knowledge referred to in the Evidence Guide for this unit includes: • all items on a schematic of the remote system and the function of each • nature/condition of materials entering and leaving each stage of the process • changes which have occurred in that stage and why they have occurred • methods of changing production rates and the advantages and disadvantages of each • effect of specific climatic and environmental factors • water testing and gas break through testing techniques • storage and transfer techniques related to the transport of oil, gas or water. • principles of operation of plant/equipment • physics and chemistry relevant to the process unit and the fluids involved • process parameters and limits, eg temperature, pressure, flow, pH • duty of care obligations • hierarchy of control • communication protocols, eg radio, phone, computer, paper, permissions/authorities • routine problems, faults and their resolution • relevant alarms and actions • plant process idiosyncrasies • correct methods of starting, stopping, operating and controlling plant • corrective action appropriate to the problem cause • function and troubleshooting of major components and their problems • types and causes of problems within operator's scope of skill level and responsibility.

Evidence Guide

EVIDENCE GUIDE
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of

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EVIDENCE GUIDE	
	parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios, role plays and 3D virtual reality interactive systems. In the case of evacuation training or training for competencies practised in life threatening situations, simulation may be used for the bulk of the training. This unit of competency requires an application of the knowledge contained in the operation of the remote facility and its integral equipment, to the level needed to maintain control and recognise and resolve problems. This can be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk-throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. The emphasis should be on the ability to stay out of trouble rather than on recovery from a disaster. Consistent performance should be demonstrated. In particular look to see that: • early warning signs of equipment/processes needing attention or with potential problems are recognised • the range of possible causes can be identified and analysed and the most likely cause determined • appropriate action is taken to ensure a timely return to full performance • obvious problems in related plant areas are recognised and an appropriate contribution made to their solution. These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk-through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.

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EVIDENCE GUIDE	
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	Consider co-assessment with other units relevant to the job.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This unit of competency includes all such items of equipment and unit operations which form part of the remote facility. For your enterprise this may include (select relevant items): • valves • pumps • prime movers • compressors • separators • instrumentation • storage tanks, ponds and dams • filters • wellheads

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RANGE STATEMENT	
	• hydraulic well control panels • fire and gas safety systems.
Typical problems	Typical problems for your plant may include: • contamination of product • control of temperature and pressure • variations in feed • vibration.
Appropriate action	Appropriate action includes: • determining problems needing action • determining possible fault causes • rectifying problem using appropriate solution within area of responsibility • following through items initiated until final resolution has occurred • reporting problems outside area of responsibility to designated person.
Procedures	Procedures may be written, verbal, computer-based or in some other form. They include: • all work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Responsible Care) and government regulations.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit sector	Operational/technical

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Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMASUP311A Operate communications hub

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This competency covers the using of a range of communication equipment and ensuring that required communications are completed. It includes the coordination and priortisation of communications from/to diverse people in both normal and abnormal situations.

Application of the Unit

Application of the unit	In a typical scenario a control room operator/panel technician receives, relays and acts upon a range of communications as part of their role. This unit may also apply to personnel other than panel operators who perform a similar role. It includes: • process related communications • emergency communications • work related communications • personal communications • miscellaneous communications • communications under both normal and abnormal plant/ process/ weather conditions • communications under stress when multiple activities are occurring simultaneously.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use communication modes.	1.1. Turn equipment on/off as appropriate 1.2. Ensure equipment remains operational 1.3. Follow appropriate protocols for each communication mode being used 1.4. Select appropriate mode for use 1.5. Ensure communication used is safe for environment.
2. Deal with incoming communications.	2.1. Receive communication 2.2. Determine action required from communication 2.3. Prioritise communication in keeping with all current activities 2.4. Decide which communications to action, when and how 2.5. Maintain confidentiality as appropriate 2.6. Take action required by communication in the current circumstances 2.7. Ensure communication reaches its intended destination in an appropriate time frame.
3. Initiate communications.	3.1. Translate process issues into communications as required 3.2. Identify stakeholders for any required communication 3.3. Prioritise communications in keeping with all current

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ELEMENT	PERFORMANCE CRITERIA
	activities 3.4. Select appropriate communication mode 3.5. Communicate as required within an appropriate timeframe.
4. Verify communication.	4.1. Identify communications which require follow through 4.2. Identify communications delayed due to other priorities 4.3. Check all required communications have been received 4.4. Check appropriate actions have been initiated 4.5. Identify cause of non-communication/inappropriate action and take required action

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
This competency includes the following skills: • analysis • decision making • communication • prioritisation.
Required knowledge
Competence in this unit includes the following knowledge: • use of different communication modes • relative advantage of different communication modes • communication protocols for organisation in different modes • privacy requirements • methods of prioritising communications with other activities • issues requiring communication, with whom and with what priority • possible actions arising from types of situations and communications.

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Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. T he unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Simulation may be required to allow for assessment of parts of this unit. Simulation should be based on the actual plant and will include walk-throughs of the relevant competency components. Simulations may also include the use of case studies/scenarios and role plays. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk-throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competence must be demonstrated in the ability to specify the requirements and then select the best solution to meet the necessary and desirable requirements.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with other relevant units.
Guidance information for	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy,

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EVIDENCE GUIDE	
assessment	language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This competency covers all communication which might pass through/be initiated by the communications hub.
Communication modes	Communication modes includes: • radios • phones • email • computer messaging • PA • written • verbal
Ensuring operational	Ensuring equipment is operational includes: • charging batteries as required • replacing batteries as required • arranging for maintenance as required
Communication protocols	Communication protocols includes: • radio protocols • verbal protocols • email protocols • memo/reporting/writing protocols • phone protocols
Current activities	Current activities includes all process operations including start up and shut down or other abnormal situations where any individual

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RANGE STATEMENT	
	communication may be vital to the operation or a mere distraction.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMASUP410B Develop plant documentation

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the development, establishment and evaluation of plant documentation in response to identified information requirements including the development of workplace documents for the introduction of new systems, processes, equipment and record keeping requirements. The competency unit applies to a wide range of plant documentation. This unit does not apply to the participation in reviewing workplace documentation, which is covered by *MSAPMSUP210A Process and record information*.

Application of the Unit

Application of the unit	Typically, the employee would: • investigate the need for new plant documentation • determine operating principles and best practice in consultation with others • draft plant documentation • validate and modify plant documentation in response to feedback • communicate changes and amendments.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Identify information need/deficiency.	1.1. Identify the need for documentation in accordance with company requirements 1.2. Evaluate current documentation where existent 1.3. Define information need/deficiency 1.4. Discuss information requirements with appropriate personnel.
2. Develop plant documentation.	2.1. Specify information need and set/prioritise objectives 2.2. Analyse existing documentation/records in accordance with specified requirements 2.3. Determine operating principles and best practice where required 2.4. Develop/amend documentation as a draft in accordance with specifications to standard format 2.5. Issue documentation to appropriate personnel for review 2.6. Edit documentation and amend in accordance with review requirements 2.7. Complete documentation to satisfy the initial identified need/deficiency.
3. Communicate changes to plant documentation.	3.1. Explain and communicate documentation to all relevant personnel 3.2. Distribute documentation to all appropriate personnel 3.3. Evaluate implementation of documentation

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ELEMENT	PERFORMANCE CRITERIA
	3.4. Amend documents if required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills
Competence, sufficient to be able to develop and amend work place documentation, includes the ability to apply and explain: • enterprise information systems and work place documentation • enterprise quality and safety procedures • principles of policy and procedure development • principles of information/data management • importance of effective consultation in developing documentation • relevant equipment and operational processes.
Required knowledge
The knowledge referred to in the Evidence Guide for this unit includes: • organisation policies, standard procedures and work instructions and relevant regulatory requirements for the development of plant documentation • standard codes of practice relevant to developing plant documentation.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	Assessment of this unit should include demonstrated competence on actual plant and equipment in a work environment. The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.

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EVIDENCE GUIDE	
	Assessment will occur over a range of situations which will include disruptions to normal, smooth operation. Assessment will typically use a plant documentation development project. This unit of competency requires a significant body of knowledge which will be assessed through questioning and the use of what-if scenarios both on the plant (during demonstration of normal operations and walk-throughs of abnormal operations) and off the plant.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of satisfactory performance in this unit can be obtained by observation of performance and questioning to indicate understanding and knowledge of the Elements of the competency and Performance Criteria. Consistent performance should be demonstrated. In particular look to see that: • effective maintenance and evaluation of workplace documentation is carried out • effective research and consultation is undertaken to ensure the development of best practice documentation • feedback is provided on how to improve workplace documentation • completed documentation is user friendly, accurate and in accordance with the intended use/requirements • adequate documentation is produced, including documentation for the introduction of new systems, policies, equipment or processes • non routine problems in relation to plant documentation are recognised and appropriate solutions are presented • changes to workplace documentation is communicated in the appropriate manner. These aspects may be best assessed using a range of scenarios/case studies/what-ifs as the stimulus with a walk-through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations which may have been generated from the

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EVIDENCE GUIDE	
	past incident history of the plant, incidents on similar plants around the world, hazard analysis activities and similar sources.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios/case studies/what-ifs will be required as will a bank of questions which will be used to probe the reasoning behind the observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork units.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

RANGE STATEMENT	
The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs if the candidate, accessibility of the item, and local industry and regional contexts.	
Codes of practice/ standards	Where reference is made to industry codes of practice, and/or Australian/international standards, the latest version must be used.
Context	This competency is typically performed by experienced operators, team leaders or supervisors who may be working individually or in a team environment.
Documentation	This competency includes the following indicative plant documentation: • operating procedures • work instructions • incident procedures • operating manuals • quality manuals and procedures

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RANGE STATEMENT	
	• training program contents/materials • safety data sheets • job cards • maintenance logs • non-compliance reports • incidence and accident reports • permits • schematics/process flows/engineering drawings.
Information	Sources of information may include: • manufacturing specifications • product specifications • company policies and procedures • customer requirements • industry/work place codes of practice • State/industry OHS legislation and regulations • ISO and other industry standards and regulations • industry associations, networks and professional bodies.
Equipment	Items of equipment for this competency include: • computer equipment.
Procedures	Procedures may be written, verbal, computer-based or in some other form. They include: • all work instructions • standard operating procedures • formulas/recipes • batch sheets • temporary instructions • any similar instructions provided for the smooth running of the plant. For the purposes of this Training Package, 'procedures' also includes good operating practice as may be defined by industry codes of practice (eg Responsible Care) and government regulations.
Health, **safety and environment** (**HSE**)	All operations to which this unit applies are subject to stringent health, safety and environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

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Unit Sector(s)

Unit sector	Support/generic

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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PMASUP444A Plan plant preparation and isolation

Modification History

New unit

Unit Descriptor

This unit of competency covers the skills and knowledge needed to undertake the planning and organisation needed before plant is isolated and prepared for subsequent work, typically maintenance of some sort. It also includes the planning to prepare for the plant's return to service.

Application of the Unit

This unit applies to a person who has the responsibility for planning to isolate and prepare plant. This is probably part of their work role, although it could be a full time secondment for a major shutdown. The type of people to whom this unit may apply include (but are not limited to):

- operators and maintainers
- supervisors
- maintenance planners
- maintenance personnel
- authorised permit issuers, coordinators or similar.

While this unit is written to apply to an individual they will rarely if ever complete this competency as a lone individual and will usually do so in liaison with relevant experts and stakeholders.

This unit applies:

- after the work scope has been agreed
- before the isolation and preparation commences.

This unit has a strong relationship with the relevant 'permit' units (e.g. MSAPMPER300C Issue work permits) as well as HAZOP (e.g. PMASUP445A Participate in HAZOP studies) and decommissioning/recommissioning units (e.g. PMASUP440B Commission/recommission plant and PMASUP441C Decommission plant). Where relevant, these units should also be accessed.

This unit requires a detailed knowledge of the plant to be prepared and isolated, such as might be obtained from the relevant technical units covering this plant. Hands-on operating competency, however, is not necessarily required.

This unit does not include the actual isolation and preparation of plant – see PMASUP244A Prepare and isolate plant.

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This unit has been written with the preparation and isolation of hazardous plant, such as a major hazard facility in mind. However, it should also be applicable to the preparation and isolation of lower hazard plants and mobile plant with appropriate contextualisation.

Much of this unit is iterative and the text below should not be taken as specifying necessary sequence.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Confirm scope of work	1.1	Examine identified work scope
		1.2	Confirm purpose of identified work
		1.3	Identify plant and equipment involved
		1.4	Negotiate any conflicts/inconsistencies with relevant stakeholders
		1.5	Identify possible need for temporary lifting of any isolations
2	Develop isolation	2.1	Apply relevant isolation philosophy/strategy

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	philosophy for work	2.2	Determine implications of isolation
		2.3	Identify physical limits of effected plant and equipment
		2.4	Check suitability and effectiveness of existing isolation procedures
		2.5	Assess possible boundaries for isolations
		2.6	Seek local knowledge for similar isolations and preparations
		2.7	Draft strategies for isolation and preparation
		2.8	Communicate, as appropriate, with stakeholders
		2.9	Negotiate isolation and preparation conflicts
		2.10	Prepare isolation philosophy for work
3	Manage hazards	3.1	Identify existing hazards of plant, process and materials
		3.2	Identify hazards associated with performing the isolations and preparation
		3.3	Identify hazards associated with purging/flushing/venting materials
		3.4	Draft strategies for controlling any releases
		3.5	Estimate required preparation durations
		3.6	Make recommendations for improvement in accordance with procedures
		3.7	Liaise with technical experts as required
		3.8	Specify types of isolations and locations of isolations required
		3.9	Specify other required hazard controls
		3.10	
4	Plan required	4.1	Determine required sequencing of all steps

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	isolation and preparation	4.2	Develop isolation procedure
		4.3	Develop preparation procedure
		4.4	Develop decontamination procedures
		4.5	Develop required procedures for plant supplementary systems
		4.6	Verify procedures against relevant drawings and the plant
		4.7	Identify and schedule required prework
		4.8	Determine competencies required to complete planned isolations and preparation
		4.9	Plan required deisolation and preparation for return to service
		4.10	Discuss proposed plans with relevant stakeholders
		4.11	Complete required documentation
5	Obtain authority to execute plan	5.1	Obtain approval to implement the isolation and preparation plan
		5.2	Obtain approval to implement the deisoalation and preparation for return to service plan
		5.3	Acquire hardware and resources for isolation and deisolation and preparation for work and return to service

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills include:

Ability to:

- read and interpret technical documentation and drawings/graphics
- interpret material safety data sheets (MSDS)
- use appropriate risk assessment tools/risk effect matrices

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- calculate vessel inventory
- calculate purging/ventilation times
- calculate required volumes for purging
- calculate required times for ventilation (e.g. to achieve a specified number of turns/volumes)

Required knowledge includes:

Knowledge of:

- work control system for site and organisation
- regulations and other external controls relevant to the proposed work
- isolation philosophy or organisation
- hierarchy of isolations
- fluid hydraulics as applied to draining and purging of vessels
- types of purging and ventilation media and their uses and limitations
- methods and equipment used for purging and ventilation
- physical properties of process materials (e.g. density and viscosity)
- hazardous properties of relevant materials (e.g. process, purging and ventilation materials)
- as low as reasonably practicable (ALARP) concept and methods of achieving it
- vessel chilling causes and controls
- appropriate rates of change for pressure and temperature for vessels and other plant
- organisation's authorisation procedures
-

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria required skills and knowledge range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	This unit should be assessed as holistically as is practical and will generally be assessed using a workplace project as a significant assessment activity.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the ability to: • develop an appropriate isolation philosophy for the work on a significant item of equipment or plant area • manage relevant hazards • develop an appropriate plan for the required isolations and preparation.
Context of and specific resources for assessment	Assessment of performance must be undertaken in a workplace.

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	Access may be required to: • workplace procedures and plans relevant to work area • specifications and documentation relating to planned work • documentation relating to the plant, process and materials • any other materials which would normally be available in the workplace while conducting this activity.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Isolation	Isolation is a process for ensuring no energy or material can enter the isolated area
Preparation	Preparation is a process for ensuring that plant and equipment is in a safe and appropriate condition for the required work. Preparation may include, but is not limited to: • draining • purging • inerting • decontaminating • cleaning • ventilating • controlling atmosphere (e.g. to ensure it is breathable, and is not within the flammable range) • adjusting temperature to make a workable environment

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	• adjusting pressure (usually to atmospheric) • ensuring adequate access and egress
Scope of work	Scope of work includes, but may not be limited to: • what work is to be done • where the work will be done • who will be doing the work • when the work needs to be done • why the work is to be done • how the work will be undertaken (tools and techniques) • frequency with which this work is/will be required • duration of work (from beginning of shutdown to back to normal operations)
Relevant isolation philosophy/ strategy	Relevant isolation philosophy/strategy will normally be that of the organisation for which the isolations are being done although they could include regulatory or similar requirements and may include, but are not limited to: • types of isolations allowed (e.g. positive, double block and bleed), removal of item (e.g. fuse and spool piece), and single block isolations • lock out/tag out • preparation strategies • types of equipment to be used • purging or other preparation fluids/techniques Strategy will be consistent with relevant external standards, such as: • Government of Western Australia, Department of Commerce, Guidance note – Isolation of plant, 2010 • National Offshore Petroleum Safety Authority (NOPSA) requirements • Major Hazard Facility (MHF) Licence to Operate
Hazards	Hazards will include: • hazards to people, environment and plant • other hazards as relevant to the organisation/facility
Implications of isolation	Implications of isolation apply to both the area of the work as well as upstream and downstream implications and may include, but are not limited to: • upstream and downstream process implications

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	• ability to prepare plant once isolated • integrity of plant once isolated and prepared
Controlling releases	Controlling releases to the environment may include, but is not limited to: • preventing any release • containing any release • recovery and reuse or disposal of any release
Physical limits of plant	Physical limits of plant may include, but are not limited to: • temperature/pressure limits of plant and equipment • limits on rates of change of temperature/pressure • suitable steam pressures/temperatures
Strategies for isolation and preparation	Strategies for isolation and preparation may include, but are not limited to: • sequence of isolations and preparations • type of isolation, based on hierarchy of isolations • type of preparations to be used
Hierarchy of isolations	Isolations may be categorised according to a hierarchy of: • positive • proven • unproven

Estimating preparation durations	Estimating preparation durations may include, but is not limited to:
	• determining inventory in plant to be drained/purged
	• establishing safe rates of change, such as:
	  • pressurisation
	  • depressurisation
	  • draining
	  • flushing
	  • cooling
	  • heating
	• calculating required volumes and pressures of flushing/purging venting materials
	• calculating the time required to drain, flush, purge, depressure, pressure, cool and heat

Isolation procedure	Isolation procedure may include, but is not limited to: • isolation processes

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	• isolation list • multiple isolations • temporary lifting of isolations, when and if required • interlocks and will include consideration of: • isolation alternatives • conflicts of isolation
Verifying procedures	Verifying procedures may include, but is not limited to: • checking existing documents which have been used are accurate, current and complete • checking planned isolation points do exist, are accessible, and are suitable for the isolation planned • having a history of providing the isolation desired
Relevant drawings	Relevant drawings may include, but are not limited to: • piping and instrumentation diagrams (P&IDs) • process flow diagrams (PFDs) • process flow sheets (PFSs) • process engineering flow sheets (PEFs)
Required prework	Required prework may include, but is not limited to: • scaffolding • building up/depletion of inventories/work in progress (WIP) • obtaining of supplies • identification tags • lock out kits
Competencies required	Competencies required for isolation and preparation may include, but are not limited to: • electrical (normal) • electrical high voltage and hazardous area • electrical isolation/deisolation • radiation • heights • mobile plant • plumbing • mechanical fitting • permit preparation

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Required documentation	Required documentation may include, but is not limited to: • drawings • procedures • marking up existing documents • punch lists • vendor documents/engineering specifications • documentation required by the site work control system (e.g. permits) Documents will conform to the site requirements and document control systems Documents may be: • paper, electronic or other approved form
Authority to execute	Authority to execute includes both the authorisation to proceed and the timing of that execution. Authority will be obtained through the channels required by the organisation/facility. The level of authority required will vary for different types of work, different types of isolation and different plants/facilities

Unit Sector(s)

Support

Custom Content Section

Not applicable.

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PMBWELD301B Butt weld polyethylene plastic pipelines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the butt welding of polyethylene (PE) plastic pipes and pipeline components under industrial conditions both in the field and in factory conditions.

This competency is performed by operators as part of a work team.

Application of the Unit

Application of this unit

This competency applies to operators who are involved in the butt welding of polyethylene (PE) pipes and pipeline components to required quality assurance demands whilst maintaining personal and immediate site safety. The key features in attaining the required quality are:

- identifying materials being used in the installation as compatible for welding
- calculating appropriate welding parameters to be used
- maintaining and calibrating welding equipment
- performing welding
- assessing quality of welded joints made.

End applications include pipelines for transmitting gas and liquids.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

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Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
1. Identify materials as being compatible for welding.	1.1 Identify materials as polyethylene (PE) from specifications and work site instructions. 1.2 Identify PE materials and pipes supplied as being compatible for welding from specifications.
2. Calculate appropriate pipe welding parameters.	2.1 Identify welding machine type and operating data. 2.2 Identify pipe materials and dimensions. 2.3 Perform welding parameter calculations for individual welding machines and pipe details. 2.4 Prepare field operational sheets as per enterprise requirements.
3. Maintain and calibrate welding equipment.	3.1 Set up welding equipment and work area. 3.2 Ensure safety equipment is available and operational. 3.3 Identify non-conformance, report and rectify. 3.4 Check operation and calibrate where required, heating, trimming, and pressure systems.
4. Perform welding to required standard.	4.1 Assemble pipeline components in welding machine. 4.2 Clean, align and trim pipe ends. 4.3 Perform heating, welding, and cooling phases using

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
	calculated welding parameters. 4.4 Monitor and record achieved weld parameters for each joint as per enterprise requirement. 4.5 Clean up equipment when completed as per enterprise procedures. 4.6 Clean up work site, dispose of scrap materials as per enterprise procedures. 4.7 Use personal protective equipment as per enterprise requirements.
5. Assess quality of completed joints.	5.1 Identify quality requirements for joints 5.2 Assess joints against specification requirements, and report results 5.3 Identify and report non-conformances as per enterprise requirements.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Knowledge and understanding of PE materials and pipeline components as described in national standards to recognise welding compatibility and suitability.

Knowledge of detailed work instructions necessary to perform butt welding, and the ability to implement within required parameters to attain required quality outcomes.

Competence includes the ability to:

- identify materials being used
- calculate welding parameters for individual machines and pipeline components
- maintain and adjust operating conditions in welding machine
- set up and maintain safe working environment
- operate welding machine within required parameters
- assess quality of completed joints
- identify and rectify fault causes arising from machine operation and component variables
- establish and maintain quality records.

Language, **literacy and numeracy requirements**

Read material which is sequenced for instructions, explanations, information or opinions.

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Write short and simple messages about routine tasks or activities, or complete forms.

Use hands-on real-life materials and pictures/diagrams based on personal experience and prior knowledge.

Use several pieces of related mathematical information.

Read, write and speak whole numbers and money sums, recognise and interpret simple fractions, decimals and percentages, use simple data, grid references.

Use simple grammatical forms and vocabulary to give instructions, give explanations, ask questions and express viewpoints.

Clarify intended meaning by asking for repetition when listening, and varying speed and changing tone or emphasis when speaking.

Use strategies such as providing verbal and non-verbal feedback in order to show interest or attitude.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the weld quality meets the requirements of the standard. This may require testing of the weld in accordance with the standard.

Assessment method and context

Assessment will occur using industrial plastic pipes and welding equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- using appropriate, industrial equipment, situations and polymers
- in a situation allowing for the generation of evidence of the ability to recognise, anticipate and respond to problems
  - by using a suitable simulation and/or a range of case studies/scenarios
  - through a combination of these techniques.

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In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice and/or Australian/international standards, the latest version must be used.

Context

This competency unit includes the butt welding of polyethylene (PE) pipeline components using hydraulic activated welding machines. The end applications include pipelines used for transmission of gaseous and water based fluids.

It also includes the operation of all relevant ancillary equipment.

Specifications include national standards for materials (including but not limited to AS/NZS 4130, AS/NZS 4131, AS/NZS 4401 and AS/NZS 5065), workplace specifications and instructions, and government codes and regulations.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This competency includes use of equipment and tools such as:

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- hydraulic activated butt welding machines, and pipe supports
- measurement devices, including pressure gauges, timers, temperature probes, callipers and computer-based pressure/temperature monitors
- cleaning fluids and spray equipment
- calculators
- relevant safety equipment
- comprehensive work instructions.

Hazards

Typical hazards include:

- hazardous cleaning fluids
- pipe material handling
- heavy stationary and moving machinery
- cutting and heating components.

Problems

'Anticipate and solve problems' means resolve a wide range of routine and non-routine problems, using product and process knowledge to develop solutions to problems which do not have a known solution/a solution recorded in the procedures.

Typical process and product problems may include:

- variable PE materials, and pipes as supplied
- equipment malfunction or wear and tear
- variable field site conditions.
-

Unit Sector(s)

Not applicable.

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PMBWELD302B Electrofusion weld polyethylene pipelines

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This competency covers the electrofusion welding of polyethylene (PE) plastic pipes and pipeline components under industrial conditions both in the field and in factory conditions.

This competency is performed by operators as part of a work team.

Application of the Unit

Application of this unit

This competency applies to operators who are involved in the electrofusion of polyethylene (PE) pipes and pipeline components to quality assurance requirements whilst maintaining personal and immediate site safety. The key features in attaining the required quality are:

- identifying materials being used in the installation as compatible for welding
- calculating appropriate welding parameters to be used
- maintaining and calibrating welding equipment
- performing welding
- assessing quality of welded joints made.

End applications include pipelines for transmitting gas and liquids.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisites

This unit has **no** prerequisites.

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Employability Skills Information

Employability Skills

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes of a unit of competency	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
ELEMENT	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
1. Identify materials as being compatible for electrofusion welding.	1.1 Identify materials as polyethylene (PE) from specifications and work site instructions. 1.2 Identify PE materials and pipes supplied as being compatible for welding from specifications.
2. Identify compatibility of commercial electrofusion control systems.	2.1 Identify electrofusion welding control unit type and operating data. 2.2 Identify pipe material and dimension compatibility with electrofusion fittings. 2.3 Identify control unit compatibility with electrofusion fitting control.
3. Maintain and calibrate electrofusion control unit equipment.	3.1 Set up electrofusion welding equipment and work area as per enterprise procedures. 3.2 Ensure safety equipment is available and operational as per enterprise procedures. 3.3 Identify non-conformance, report and rectify according to enterprise procedures. 3.4 Determine equipment is operational according to specifications.
4. Perform electrofusion	4.1 Prepare pipe and fitting as per specification.

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ELEMENT ELEMENT	PERFORMANCE CRITERIA Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.
welding to required standard.	4.2 Perform heating, welding and cooling phases using selected elecrofusion welding parameters. 4.3 Monitor and record achieved electrofusion weld parameters for each joint as per enterprise procedures. 4.4 Clean up equipment when completed as per enterprise procedures. 4.5 Clean up work site, dispose of scrap materials as per operational procedures.
5. Assess quality of completed electrofusion joints.	5.1 Identify quality requirements for electrofusion joints as per specifications. 5.2 Assess joints against specification requirements and report results. 5.3 Identify and report non-conformances according to enterprise requirements.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level required for this unit.

Knowledge and understanding of PE materials and pipeline components, as described in national standards, to recognise electrofusion welding compatibility, and suitability. Knowledge of detailed work instructions necessary to perform electrofusion welding, and the ability to implement within required parameters to attain required quality outcomes.

Knowledge as a basis for solving processing and material problems, including:

- identify materials being used
- identify compatibility of commercial operating systems
- select electrofusion welding parameters for individual control units and fittings components
- prepare electrofusion joint assemblies
- set up and maintain safe working environment
- operate control unit within required parameters
- identify and rectify fault causes arising from machine operation and component variables
- establish and maintain quality records
- as relevant for the practical completion of work required.

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Language, literacy and numeracy requirements

Read material which is sequenced for instructions, explanations, information or opinions.

Write short and simple messages about routine tasks or activities, or complete forms.

Use hands-on real-life materials and pictures/diagrams based on personal experience and prior knowledge.

Use several pieces of related mathematical information.

Read, write and speak whole numbers and money sums, recognise and interpret simple fractions, decimals and percentages, use simple data, grid references.

Use simple grammatical forms and vocabulary to give instructions, give explanations, ask questions and express viewpoints.

Clarify intended meaning by asking for repetition when listening, and varying speed and changing tone or emphasis when speaking.

Use strategies such as providing verbal and non-verbal feedback in order to show interest or attitude.

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for this training package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that the weld quality meets the requirements of the standard. This may require testing of the weld in accordance with the standard.

Assessment method and context

Assessment will occur using industrial plastic pipes and welding equipment and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- by use of appropriate, industrial equipment, situations and polymers
- in a situation allowing the generation of evidence of the ability to recognise, anticipate and solve problems
- by use of a suitable simulation and/or a range of case studies/scenarios
- by a combination of these techniques.

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In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment. Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent that they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Where reference is made to industry codes of practice and/or Australian/international standards, the latest version must be used.

Context

This competency unit includes the electrofusion welding of polyethylene (PE) pipeline components using calibrated output electrofusion control units. The end applications include pipelines used for transmission of gaseous and water based fluids.

It also includes the operation of all relevant ancillary equipment.

Specifications include national standards for materials (including but not limited to AS/NZS 4129, AS/NZS 4130, AS/NZS4131 and AS/NZS 4401), workplace specifications and instructions, and government codes and regulations.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

Tools and equipment

This competency includes use of equipment and tools such as:

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- calibrated output electrofusion control units and pipe clamp supports
- measurement devices, including timers, temperature probes, callipers and computer based output monitors
- cleaning fluids, spray equipment and scrapers
- relevant safety equipment
- comprehensive work instructions.

Hazards

Typical hazards include

- hazardous cleaning fluids
- pipe material handling
- heavy stationary and moving machinery
- cutting and heating components.

Problems

'Anticipate and solve problems' means resolve a wide range of routine and non-routine problems, using product and process knowledge to develop solutions to problems which do not have a known solution/a solution recorded in the procedures.

Typical process and product problems may include:

- variable PE materials, and pipes as supplied
- equipment malfunction or wear and tear
- variable field site conditions.
-

Unit Sector(s)

Not applicable.

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PMC563081C Carry out stock control

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers monitoring and reordering of stock to effectively control the purchase of stock for production. It involves maintaining stock levels, reporting stock variations, liaising with suppliers and facilitating stock control changes.

Application of the Unit

Application of the unit	In a typical scenario, a senior operator, or supervisor in a large plant looks after the monitoring and reordering of stock. This is likely to be as part of their broader role and may be done by an individual working alone or as part of a work team. Stock levels may be monitored visually (e.g. stock on a shelf/on the floor) or may be via a computer which is updated as stock is used, or other means. Stock may be in a store, warehouse or locally in the plant.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

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Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Monitor stock reordering	1.1. Monitor stock levels and maintain them at optimum levels 1.2. Adjust stock reorder levels as required in response to customer demand 1.3. Report to suppliers variations to quality and quantity of delivered goods 1.4. Identify alternative suppliers which meet required quality and safety standards and utilise them when required 1.5. Reorder stock in compliance with procedures
2. Maintain inventory records systems	2.1. Maintain accurate records of the storage and the movement of stock 2.2. Identify, and act upon, stock discrepancies 2.3. Ensure minimum inconvenience to customers resulting from stock movements
3. Undertake stocktaking and cyclical counts	3.1. Coordinate stocktaking and cyclical counts as required 3.2. Interpret inventory data and confirm it matches stock 3.3. Reconcile inventory data with actual stock on hand 3.4. Report stock variations or shortages 3.5. Identify missing or damaged stock and report as

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ELEMENT	PERFORMANCE CRITERIA
	required by procedures
4. Control hazards	4.1. Identify hazards in the work area 4.2. Assess the risks arising from those hazards 4.3. Implement measures to control those risks in line with procedures and duty of care
5. Respond to problems	5.1. Identify possible problems in stock levels, storage, quantity and quality if stock, timeliness of supplies and production issues 5.2. Determine problems needing action 5.3. Determine possible fault causes 5.4. Rectify problem using appropriate solution within area of responsibility 5.5. Follow through items initiated until final resolution has occurred 5.6. Report problems outside area of responsibility to designated person

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- maintaining accurate stock levels
- acting upon discrepancies
- ensuring stock availability for meeting production needs
- implementing enterprise's standard procedures and work instructions and relevant regulatory requirements within an appropriate timeframe and in a manner relevant to a smooth work flow and production requirements
- reading and numeracy to interpret workplace documents and technical information

Required knowledge

Required knowledge includes:

- production requirements and stock availability
- effective inventory management techniques to meet production requirements
- accuracy of inventory

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REQUIRED SKILLS AND KNOWLEDGE
• supplier contractual requirements • stock control techniques • stock optimum levels and relationship with cost • relevant enterprise information systems in the reordering and monitoring of stock control • methods of rectification for variations to quality and quantity of delivered goods • method for sourcing alternative suppliers

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	The unit will be assessed in as holistic a manner as is practical and may be integrated with the assessment of other relevant units of competency.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	It is essential that the system be understood and that the importance of inventory management in relation to effective production planning is known. Competence must be demonstrated in the ability to recognise and analyse potential situations requiring action and then in implementing appropriate corrective action. Consistent performance should be demonstrated. In particular look to see that: • stock levels are accurate, discrepancies are acted upon and stock levels are maintained • variations to quality and quantity of delivered goods are rectified • alternative suppliers can be sourced on request • stock is on hand to ensure efficient production.
Context of and specific resources for assessment	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. Assessment will occur over a range of situations which will include disruptions to normal, smooth operation.

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EVIDENCE GUIDE	
	Simulation or case studies/scenarios may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual plant and will include 'walk-throughs' of the relevant competency components. A bank of scenarios/case studies/what ifs and questions will be required to probe the reasoning behind observable actions.
Method of assessment	In all plants it may be appropriate to assess this unit concurrently with relevant teamwork and communication units. Individual enterprises may choose to add prerequisites and co-requisites relevant to their processes.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Procedures	All operations are performed in accordance with standard procedures and work instructions
Equipment and unit operations	This unit of competency includes all such items of equipment and unit operations which form part of the stock control system. These may include: • enterprise inventory system, which may be paper or computer based • scanners • enterprise inventory practices and procedures • production planning and scheduling
Typical problems	Typical problems may include:

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RANGE STATEMENT	
	• stock discrepancies between inventory system and actual stock on hand • deviations from supplier contracts/performance agreements • stock control and production planning discrepancies • stock quality and/or quantity does not meet production standards
Occupational health and safety (**OHS**)	The identification and control of hazards and the application of OHS are to be in accordance with current, applicable legislation and regulations, and company procedures

Unit Sector(s)

Unit sector	Support

Competency field

Competency field	

Co-requisite units

Co-requisite units		

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RIICCM205D Carry out manual excavation

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to carry out manual excavation in Civil construction.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for manual excavation	1.1 Access, interpret and apply manual excavation documentation, and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, obtain and implement traffic signage requirements 1.6 Select, and check for faults, equipment and/or attachments for work activities 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Dig small excavations by hand	2.1 Confirm the location and specifications of the intended excavation 2.2 Identify service markers/taped areas 2.3 Determine and confirm location of underground services and avoid damage/interference

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	2.4 Use hand tools, and dig post holes, small pits and trenches to the required dimensions 2.5 Undertake trench collapse prevention procedures, where excavation is in unstable ground 2.6 Place barricades around the excavation
3. Complete and isolate the excavation	3.1 Clean loose material out of excavation using hand tools 3.2 Check excavation complies with the specification/work instruction 3.3 Clear loose material away from the edge of excavation
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Manage/report hazards, and maintain a safe working environment 4.4 Process written records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICCM205A Carry out manual excavation

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIICCM205D Carry out manual excavation

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies applicable documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of manual excavation including:
  - using manual excavation tools
  - using concreting tools, plant and equipment
  - communicating effectively to receive and clarify work instructions
- works effectively with others to undertake and complete the manual excavation in a way that meets all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - complying with written and verbal reporting requirements and procedures
- demonstrates consistent timely completion of manual excavation that safely, effectively and efficiently meet all of the required outcomes on a minimum of three (3) separate occasions including:
  - identifying the location of underground services
  - digging post holes, small pits and trenches to the required dimensions
  - applying trench collapse prevention procedures in unstable ground
  -

Knowledge Evidence

The candidate must demonstrate knowledge in carrying out manual excavation through:

- accessing, interpreting and applying the organisation and site requirements and procedures for;
  - using JSAs/safe work methods
  - achieving project quality outcomes
  - identifying and reporting on hazards related to the worksite and work activity
- organising work activities

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- using relevant tools and equipment safely
- identifying types, uses, limitations and maintenance requirements of manual excavation tools
- applying basic principles of soil technology for civil works
- using basic trench collapse prevention techniques including benching and battering
- identifying site isolation and traffic control responsibilities and authorities
- using civil construction terminology
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
-

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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RIICCM206D Support plant operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to support plant operations in Civil construction.

This unit is appropriate for those working in an assistant role.

No licensing, legislation, or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for supporting plant operations	1.1 Access, interpret and apply plant operations documentation, and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, address and report potential hazards and risks and environmental issues 1.6 Select and wear correct personal protective equipment 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Identify and protect services	2.1 Locate services from plan 2.2 Locate, and advise operators of service markers 2.3 Expose, mark services, and erect barriers to prevent damage
3. Support the operators	3.1 Identify and alert operator of unsafe conditions or potential damage to property

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	3.2 Check pegs and levels and give advice to machine operator for compliance with job requirements 3.3 Deliver or relocate materials, and check for quality and quantity 3.4 Direct delivery plant/trucks to required location for loading/unloading 3.5 Provide guidance to operator for spreading materials to specified levels 3.6 Provide guidance to operator for compaction of materials in layers 3.7 Finish excavation jobs by hand to specifications 3.8 Complete written and verbal reporting requirements
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Manage/report hazards, and maintain a safe working environment 4.4 Process written records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICCM206A Support plant operations

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIICCM206D Support plant operations

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies applicable documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of plant operations support including:
  - selecting and using relevant tools/equipment
  - identifying the location of underground services
  - communicating effectively to alert and assist operators
- works effectively with others to undertake and complete the plant operations support in a way that meets all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - complying with written and verbal reporting requirements and procedures
- demonstrates consistent timely completion of plant operations support that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - the completion of four (4) standard shifts requiring the spotting for a minimum of two (2) separate activities involving excavation, fill, spreading of imported material, trimming and pawning
  - location and marking of services on two (2) separate projects
  -

Knowledge Evidence

The candidate must demonstrate knowledge in supporting plant operations through:

- accessing, interpreting and applying the organisation and site requirements and procedures for;
  - using JSAs/JSEA/safe work methods
  - achieving project quality outcomes
  - identifying and reporting on hazards related to the worksite and work activity
  - applying materials handling methods and using safety data sheets

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- organising work activities
- using relevant tools and equipment safely
- identifying types, uses, limitations and maintenance requirements of plant/equipment
- applying basic principles of soil technology for civil works
- identifying site isolation and traffic control responsibilities and authorities
- using civil construction terminology
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
-

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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RIICCM207D Spread and compact materials manually

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to spread and compact materials manually in Civil construction.

This unit is appropriate for those working in operational roles.

No licensing, legislation, or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for manually spreading and compacting materials	1.1 Access, interpret and apply spreading and compacting materials documentation, and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, obtain and implement traffic signage requirements 1.6 Select, and check for faults, equipment and/or attachments for work activities 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Conduct compaction machine operational checks	2.1 Carry out pre-start, start-up and shutdown procedures 2.2 Check machine controls and functions for serviceability, and rectify or report any faults
3. Spread and compact materials	3.1 Conduct basic field identification test and identify material type

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	3.2 Direct trucks to required location for loading/dumping 3.3 Direct delivered/relocated materials to correct location 3.4 Check manufactured material for segregation 3.5 Conduct field test to ensure material moisture is suitable 3.6 Direct machine operator to spread materials to specified levels 3.7 Finish materials by hand to specified levels 3.8 Operate mechanical compaction equipment and consolidate materials into layers 3.9 Conduct field test to ensure compaction has been achieved in restricted locations
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Manage/report hazards, and maintain a safe working environment 4.4 Process written records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICCM207A Spread and compact materials manually

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIICCM207D Spread and compact materials manually

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies applicable documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of the manual spreading and compacting of materials including:
  - selecting and using relevant tools/equipment
  - carrying out equipment pre-start, start-up and shutdown
  - conducting practical field tests for moisture content, shrinkage and compaction
  - communicating effectively to direct operators
- works effectively with others to undertake and complete the manual spreading and compacting of materials that meets all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - complying with written and verbal reporting requirements and procedures
  - demonstrates consistent timely completion of manual spreading and compacting of materials that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - completing the hand spreading and the mechanical (hand operated) compaction of two (2) different material types to site specification
  -

Knowledge Evidence

The candidate must demonstrate knowledge in spreading and compacting materials manually through:

- accessing, interpreting and applying the organisation and site requirements and procedures for;
  - using JSAs/JSEA/safe work methods
  - achieving project quality outcomes
  - identifying and reporting on hazards related to the worksite and work activity
  - applying materials handling methods and using safety data sheets

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- organising work activities
- using relevant tools and equipment safely
- identifying hand operated mechanical compaction machine types, characteristics, technical capabilities and limitations
- applying basic principles of soil technology for civil works
- identifying basic soil compaction theory including the effects of moisture and mechanical interlock
- identifying site isolation and traffic control responsibilities and authorities
- using civil construction terminology
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
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Links

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RIICCM208D Carry out basic levelling

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to carry out basic levelling in Civil construction.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for basic levelling	1.1 Access, interpret and apply basic levelling documentation, and ensure the work activity is complaint 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, obtain and implement traffic signage requirements 1.6 Select equipment and/or attachments for work activities, and check for faults and serviceability within specified tolerances 1.7 Identify environmental protection requirements 1.8 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Establish offsets to plans and drawings	2.1 Establish offset and recovery pegs from survey controls to specified plans and drawings 2.2 Re-establish earthwork and pavement control lines from offsets and/or recovery pegs

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	2.3 Establish drainage offsets from survey control
3. Set up and use levelling device	3.1 Identify heights to be transferred/established from project plans or instructions 3.2 Set up and use levelling instruments, and complete levelling 3.3 Transfer heights from the known to the required 3.4 Document results of levelling procedure
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Manage/report hazards, and maintain a safe working environment 4.4 Process written records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICCM208A Carry out basic levelling

Links

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Assessment Requirements for RIICCM208D Carry out basic levelling

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies applicable documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of basic levelling including:
  - selecting and using relevant tools/equipment
  - carrying out basic leveling mathematics
  - following basic civil construction processes
  - communicating effectively to confirm work requirements/plans/drawings
- works effectively with others to undertake and complete the basic levelling in a way that meets all of the required outcomes, including:
  - using a range of communications techniques and equipment to convey information to others
  - complying with written and verbal reporting requirements and procedures
- demonstrates consistent timely completion of basic levelling that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - conducting a minimum of three (3) different levelling tasks, at least one (1) utilising an automatic level. One (1) of the tasks must include closed traverse utilising ***either*** the height of instrument ***or*** rise and fall method of reduction
  - conducting of a two (2) peg test with an automatic level, to confirm instrument meets manufacturer's tolerances
  - accurately recording of the results of each levelling procedure to organisational requirements
  -

Knowledge Evidence

The candidate must demonstrate knowledge in carrying out basic levelling through:

- accessing, interpreting and applying the organisation and site requirements and procedures for;

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  - using JSAs/JSEA/safe work methods
  - achieving project quality outcomes
  - identifying and reporting on hazards related to the worksite and work activity
  - applying materials handling methods and using safety data sheets
- organising work activities
- using relevant tools and equipment safely
- identifying leveling devices, characteristics, technical capabilities and limitations
- read, interpret and applying civil construction plan, symbols and construction terminology
- identifying site isolation and traffic control responsibilities and authorities
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
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Links

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RIICCM210D Install trench support

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to install trench support in Civil construction.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for installing trench support	1.1 Access, interpret and apply trench support documentation, and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, obtain and implement traffic signage requirements 1.6 Select, and check for faults, equipment and/or attachments for work activities 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Install trench shoring	2.1 Communicate with plant operator and ensure the excavation of trenches complies with site plan, line and depth 2.2 Determine and prepare shoring method 2.3 Set out positioning of shoring 2.4 Position/erect shoring within the trench

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	2.5 Secure shoring in position and ensure structural conformity with regulations 2.6 Clean out excavation 2.7 Locate ladders for safe access and egress
3. Remove trench shoring	3.1 Release jacking mechanisms and remove ladders 3.2 Check shoring and prepare it for lifting from the trench 3.3 Remove shoring from trench and store it
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Manage/report hazards, and maintain a safe working environment 4.4 Process written records

Foundation Skills

Unit Mapping Information

RIICCM210A Install trench support

Links

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Assessment Requirements for RIICCM210D Install trench support

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies applicable documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of trench support installation including:
  - selecting and using relevant tools/equipment
  - using shoring methods and systems
  - working in confined spaces
  - communicating effectively to confirm work requirements
- works effectively with others to undertake and complete the installation of trench support in a way that meets all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - complying with written and verbal reporting requirements and procedures
- demonstrates consistent timely completion of trench support installation that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - installation of trench support on two (2) projects in trenches deeper than 1.5 metres requiring the trench support to be installed, moved along or within the trench, and removed from the trench
  -

Knowledge Evidence

The candidate must demonstrate knowledge in installing trench support through:

- accessing, interpreting and applying the organisation and site requirements and procedures for;
  - using JSAs/JSEA/safe work methods
  - achieving project quality outcomes
  - identifying and reporting on hazards related to the worksite and work activity
  - applying materials handling methods and using safety data sheets

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- organising work activities
- using relevant tools and equipment safely
- equipment types, characteristics, technical capabilities and limitations
- excavation techniques
- construction techniques
- site isolation and traffic control responsibilities and authorities
- using civil construction terminology
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
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RIICRC208D Lay pipes

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to lay pipes in Civil Construction.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare to lay pipes	1.1 Access, interpret and apply pipe laying documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear correct personal protective equipment appropriate for work activities 1.5 Identify, obtain, confirm and implement signage requirements 1.6 Select and check for faults all plant, tools and equipment to carry out tasks 1.7 Survey work area for loading and unloading and stock-piling materials
2. Set out excavation	2.1 Determine location and depths of excavation from job drawings 2.2 Set out and clearly mark excavation location 2.3 Advise plant operator of excavation requirements 2.4 Check excavation depths and grades for conformity to job

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	requirements 2.5 Compact and prepare foundation base for testing
3. Install bedding materials	3.1 Determine bedding material type and specification from plans and drawings 3.2 Lay and compact bedding materials to specified depths and grades
4. Lay pipe	4.1 Select, check and attach lifting apparatus to the pipe in preparation for lifting and installation for pipe joining 4.2 Prepare and specify pipe ends 4.3 Align pipe ends and push home 4.4 Check pipe for line and level 4.5 Advise plant operator of backfilling requirements and backfill and compact pipe to required finish level 4.6 Finish inlets and outlets in accordance with pipe/culvert design specifications
5. Clean up	5.1 Clear work area and dispose of or recycle materials 5.2 Clean, check, maintain and store tools and equipment

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIICRC208A Lay pipes

Links

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Assessment Requirements for RIICRC208D Lay pipes

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies applicable documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of pipe laying including:
  - accessing, interpreting and applying documentation relevant to pipe laying
  - identifying and applying relevant drawings and job specifications to all work activities
  - identifying, addressing and reporting potential hazards and risks
  - identifying, obtaining, confirming and implementing signage requirements
  - selecting and checking for faults all plant, tools and equipment to carry out tasks
  - identifying, addressing and reporting environmental issues and ground conditions
  - surveying work area for loading and unloading and stock-piling materials
- works effectively with others to undertake and complete the laying of pipes to the required outcomes including:
  - preparing for and organising work activities to meet all task requirements
  - communicating clearly and concisely with others to receive and clarify work instructions
  - using a range of communication techniques and aids to advise others of work activity and exclusion zones
  - monitoring hazards and identifying and communicating changes to the work environment during the work process
- demonstrates consistent, timely completion of pipe laying that safely, effectively and efficiently meet all of the required outcomes on a minimum of three (3) separate occasions including:
  - set out of and conducting excavation in the correct location to specified depth and grades
  - compacting and preparing foundation base for testing
  - installing required bedding materials
  - laying pipes for correct line and level
  - finishing inlets and outlets in accordance with pipe/culvert design specifications
  - advising plant operator of backfilling requirements

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- clearing work area and disposing of, recycling or storing materials
- installation of pipe on two different projects to a minimum of ten (10) pipe joints. The pipes are to have a minimum diameter of DNC two hundred and twenty-five (DN225) m
-

Knowledge Evidence

The candidate must demonstrate knowledge in laying pipes through:

- accessing, interpreting and applying the organisation and site requirements and procedures for laying pipes through:
  - identifying and managing risks
  - identifying, addressing and reporting environmental issues and ground conditions
  - setting up work activity
  - site isolation and traffic control responsibilities
  - work health and safety
  - managing waste
- selecting and checking for faults, tools and equipment to carry out tasks
- carrying out work to drawings and specifications
- applying effective pile laying techniques
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience
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RIIHAN309D Conduct telescopic materials handler operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to conduct telescopic materials handler operations in the Resources and Infrastructure Industries.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Elements and Performance Criteria

1. Plan and prepare for telescopic materials handler operations	1.1 Access, interpret and apply telescopic materials handler documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, obtain and apply signage requirements 1.6 Select plant, tools and equipment, check for serviceability/faults and rectify or report verbally or in writing
2. Conduct telescopic materials handler pre-operational checks	2.1 Perform pre-start, start-up, park-up and shutdown procedures 2.2 Check telescopic materials handler controls, brakes, attachments and other implements for manoeuvrability and serviceability and ensure faults are rectified or reported
3. Operate telescopic materials handler	3.1 Assess site and operating hazards and apply safe operating techniques 3.2 Operate telescopic materials handler
4. Attach, secure, lift, carry and place materials	4.1 Use load handling communication methods with all parties 4.2 Establish the weight of the load 4.3 Assess safe working load requirements and select, attach and

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	secure appropriate slings and lifting gear 4.4 Locate machinery and ensure stability 4.5 Shift the load 4.6 Use conventional hand and audible signals during the operation
5. Select, remove and fit attachments	5.1 Select attachment for the task 5.2 Move and fit attachment 5.3 Test and confirm correct fitting and operation 5.4 Use attachment per manufacturer's recommendations and design limits 5.5 Remove, clean and store attachment
6. Relocate the telescopic materials handler	6.1 Prepare machine and equipment for relocation 6.2 Transport machine and equipment safely between worksites, observing relevant codes and traffic management requirements
7. Carry out machine operator maintenance	7.1 Park and prepare telescopic materials handler for maintenance and shut down 7.2 Conduct inspection and fault finding 7.3 Remove and replace defective parts 7.4 Perform scheduled operator maintenance 7.5 Process written records
8. Conduct housekeeping activities	8.1 Clean-up work area and dispose of or recycle materials 8.2 Clean, check, maintain and store plant, tools and equipment

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIHAN309A Conduct telescopic materials handler operations

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Assessment Requirements for RIIHAN309D Conduct telescopic materials handler operations

Modification History

Corrected numbering in Performance Criteria.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of conducting telescopic materials handler operations including:
  - applying operational safety
  - accessing, interpreting and applying technical information
  - calculating volume and weights
  - maintaining equipment written records
  - applying fault finding techniques
  - accessing, interpreting and applying environmental management plan
  - carrying out machine operator maintenance
- works effectively with others to undertake and complete the conducting of telescopic materials handler operations that meets all the required outcomes including:
  - complying with written and verbal reporting requirements and procedures
  - communicating clearly and concisely with others to receive and clarify work instructions
  - using load handling communication methods with all parties
  - using conventional hand and audible signals
- demonstrates consistent and timely completion of conducting telescopic materials handler operations that safely, effectively and efficiently meet all of the required outcomes on a minimum of three (3) separate occasions including:
  - performing pre-start, start-up, park-up and shutdown procedures
  - checking controls, brakes and attachments for manoeuvrability and serviceability and rectifying or reporting faults
  - operating the telescopic materials handler
  - selecting, attaching and securing appropriate slings and lifting gear
  - shifting the load
  - selecting, removing and fitting attachments
  - transporting the machine and equipment between work sites

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Knowledge Evidence

The candidate must demonstrate knowledge in conducting telescopic materials handler operations through:

- telescopic materials handler types, characteristics, technical capabilities and limitations
- techniques for calculating safe working loads
- telescopic materials handler and attachment operating techniques related to essential tasks
- isolation and traffic control responsibilities and authorities
- safety data sheet and materials handling methods
- methods of changing machine attachments
- safe operating techniques in varying terrain
- basic earthworks calculations
- levelling techniques
- JSA's/safe work method statement

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
  - when assessing this unit in the context of the **Drilling** sector:
    - an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; or,
    - where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing; or,
  - when assessing this unit in the context of the **Metalliferous Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
  - when assessing this unit in the context of the **Coal Mining** sector:

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- an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,

- when assessing this unit in the context of the **Extractive** sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,
- when assessing this unit in the context of the **Civil Construction** sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

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RIIMPO304D Conduct wheel loader operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to conduct wheel loader operations in the Coal and Metalliferous mining and Extractive.

This unit is appropriate for those working in operational roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

- Coal mining
- Extractive
- Metalliferous mining
-

Elements and Performance Criteria

1. Plan and prepare for wheel loader operations	1.1 Access, interpret and apply wheel loader operations documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Access, interpret and apply geological and survey data required to complete the allocated job 1.6 Inspect and prepare work area in coordination with others 1.7 Select, and check for faults, equipment and/or attachments for work activities 1.8 Select and wear correct personal protective equipment and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Operate the	2.1 Carry out start-up, park, shutdown and secure equipment

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wheel loader	procedures 2.2 Coordinate activities with others at the site prior to commencing, during, and on completions of the work activity 2.3 Drive loader, select and modify the operating technique to meet changing work conditions 2.4 Monitor and manage equipment performance using indicators and alarms, and ensure efficiency of operation 2.5 Continually monitor hazards and risks , and ensure safety of self, other personnel, plant and equipment 2.6 Complete the work plan, within the operating capacities of the equipment
3. Carry out operator maintenance	3.1 Prepare machine for maintenance 3.2 Conduct inspection and fault finding 3.3 Carry out scheduled maintenance tasks 3.4 Return machine to service 3.5 Process written maintenance records
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Manage and/or report hazards, and maintain a safe working environment 4.4 Process written records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIMPO304B Conduct wheel loader operations

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Assessment Requirements for RIIMPO304D Conduct wheel loader operations

Modification History

Performance Criteria amended to make requirements more explicit; manoeuvring, driving and parking up added; operator maintenance element added.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of wheel loader operations including:
  - conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
  - carrying out vehicle refuelling requirements and procedures
  - applying safe work practices and identifying and reporting all potential hazards, risks and environmental issues
  - applying problem solving and troubleshooting techniques
  - conducting bucket loading and discharge
  - selecting and using the required tools and equipment
  - inspection and preparation of work area
  - working safely around other machines and personnel
- works effectively with others to undertake and complete wheel loader operations that meet all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - maintaining written and verbal reporting requirements and procedures
- demonstrates consistent timely completion of wheel loader operations that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - driving and operating the wheel loader for operations adjusting equipment operations to suit site conditions
  - shifting loads, carries the load as close to the ground as possible and deposits load to the correct location
  - selecting, removing and fitting attachments
  - following the steps to shut down the wheel loader

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Knowledge Evidence

The candidate must demonstrate knowledge in conducting wheel loader operations through:

- identifying equipment processes, technical capability and limitations
- identifying, interpreting and using geological and technical data (basic)
- identifying signs of operator fatigue and how it should be managed identifying
- apply loading techniques
- interpreting plans, reports, maps, specifications
- applying operational, maintenance and basic diagnostics
- completing housekeeping activities

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
- when assessing this unit in the context of the Metalliferous Mining sector:
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
- when assessing this unit in the context of the Coal Mining sector:
  - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,
- when assessing this unit in the context of the Extractive sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

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RIIMPO308D Conduct tracked dozer operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to conduct tracked dozer operations in Coal and Metalliferous mining and Extractive.

This unit is appropriate for those working in operational roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

- Coal mining
- Extractive
- Metalliferous mining
-

Elements and Performance Criteria

1. Plan and prepare for tracked dozer operations	1.1 Access, interpret and apply tracked dozer operations documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret clarify and confirm work plan 1.3 Identify and address risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Access, interpret and apply geological and survey data required to complete the allocated job 1.6 Inspect and prepare work area in coordination with others 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Operate the tracked dozer	2.1 Carry out pre-start, start-up, park-up, shutdown, and secure equipment procedures 2.2 Determine equipment capacity and operate equipment within capacity

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	2.3 Coordinate activities with others at the site prior to commencement of, and during, the work activity 2.4 Drive dozer, select and modify the operating technique to meet changing work conditions 2.5 Monitor and manage equipment performance using indicators and alarms, and ensure efficiency of operation 2.6 Connect and tow/push equipment and plant within the equipment and connection capacity 2.7 Continually monitor hazards and risks , and ensure safety of self, other personnel, plant and equipment
3. Carry out operator maintenance	3.1 Prepare machine for maintenance 3.2 Conduct inspection and fault finding 3.3 Carry out scheduled maintenance tasks 3.4 Return machine to service 3.5 Process written maintenance records
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Process records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

No equivalent Unit

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIIMPO308D Conduct tracked dozer operations

Modification History

Performance Criteria amended to make requirements more explicit; Manoeuvring, Driving and Parking Up added; Operator Maintenance element added.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of tracked dozer operations including:
  - conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
  - carrying out vehicle refuelling requirements and procedures
  - driving and operating the equipment to site conditions
  - applying safe work practices and identifying and reporting all potential hazards, risks and environmental issues
  - applying problem solving and troubleshooting techniques
  - carrying out towing and pushing of equipment and plant
  - selecting and using the required tools and equipment
  - working safely around other machines and personnel
- works effectively with others to undertake and complete tracked dozer operations that meet all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - maintaining written and verbal reporting requirements and procedures
  - communicating clearly and concisely with others to receive and clarify work instructions
- demonstrates consistent timely completion of tracked dozer operations that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - completing a minimum of three (3) tracked dozer operations , including:
  - manoeuvring dozer
  - blade application
  - ripper application

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- towing and pushing
- building and maintaining stockpiles
- attaching, securing, lifting, carrying and placing materials
- working safely around:
- high bench walls
- overhead power lines
- other machines and personnel
- live stockpiles

Knowledge Evidence

The candidate must demonstrate knowledge of conducting tracked dozer operations through:

- communicating and performing isolation procedures
- identifying equipment processes, technical capability and limitations
- interpreting plans, reports, maps, specifications
- identifying, interpreting and using geological and technical data (basic)
- identifying signs of operator fatigue and how it should be managed identifying
- applying dozer operational procedures and techniques (including towing and pushing)
- applying operational maintenance and basic diagnostics
- completing housekeeping activities

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing: and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
- when assessing this unit in the context of the Metalliferous Mining sector:
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
- when assessing this unit in the context of the Coal Mining sector:
  - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,

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- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,

- when assessing this unit in the context of the Extractive sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

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RIIMPO309D Conduct wheeled dozer operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to conduct wheeled dozer operations in Coal and Metalliferous mining, Civil construction and Extractive.

This unit is appropriate for those working in operational roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

- Civil construction
- Coal mining
- Extractive
- Metalliferous mining
-

Elements and Performance Criteria

1. Plan and prepare for wheeled dozer operations	1.1 Access, interpret and apply wheeled dozer operations documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Access, interpret and apply geological and survey data required to complete the allocated work 1.6 Inspect and prepare work area in coordination with others 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Operate wheeled dozer	2.1 Coordinate activities with others at the site prior to commencement of, and during the work activity 2.2 Carry out pre-start, start-up, park-up shutdown and secure

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	equipment procedures 2.3 Control speed and articulated steering of the wheeled dozer during tramming operations 2.4 Use dozer controls and functions effectively, including manoeuvre attachments to complete tasks 2.5 Carry out towing of equipment and plant safely within equipment and/or connection capabilities 2.6 Maintain safe grip, traction and productivity in varied operating conditions 2.7 Continually monitor hazards and risks, and ensure safety of self, other personnel, plant and equipment 2.8 Complete work plan, within the operating capacities of equipment
3. Carry out operator maintenance	3.1 Prepare machine for maintenance 3.2 Conduct inspection and fault finding 3.3 Carry out scheduled maintenance tasks 3.4 Return the machine to service 3.5 Process written maintenance records
4. Conduct housekeeping activities	4.1 Clear work area and dispose of or recycle materials 4.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 4.3 Process records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

No equivalent unit

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Links

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Assessment Requirements for RIIMPO309D Conduct wheeled dozer operations

Modification History

Performance Criteria amended to make requirements more explicit; Manoeuvring, Driving and Parking Up added; Housekeeping element added; removed Ripper reference.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of wheeled dozer operations including:
  - conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
  - carrying out vehicle refuelling requirements and procedures
  - driving and operating the equipment to site conditions
  - applying safe work practices and identifying and reporting all potential hazards, risks and environmental issues
  - applying problem solving and troubleshooting techniques
  - carrying out towing and pushing of equipment and plant
  - selecting and using the required tools and equipment
  - working safely around other machines and personnel
- works effectively with others to undertake and complete wheeled dozer operations that meet all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - maintaining written and verbal reporting requirements and procedures
  - communicating clearly and concisely with others to receive and clarify work instructions
- demonstrates consistent timely completion of wheeled dozer operations that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
- completing a minimum of three (3) wheeled dozer operations in coal mining or metalliferous mining or extractive Industry, including:
  - manoeuvring dozer
  - blade application
  - ripper application

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  - towing and pushing
  - pushing and preparing overburden
  - bench and pad preparation
  - trimming and cutting
  - building and maintaining stockpiles
  - attaching, securing, lifting, carrying and placing materials
  - supporting other vehicles
- completing a minimum of three (3) wheeled dozer operations working in dumps, including:
  - manoeuvring dozer
  - blade application
  - ripper application
  - creation of windrows
  - dump establishment
- completing a minimum of three (3) wheeled dozer operations working in civil works, including:
  - manoeuvring dozer
  - blade application
  - ripper application
  - towing and pushing
  - road works
  - contours
  - batters
  - rehabilitation and drainage
  - final landform and the interpretation of associated survey pegs
  - sealing tailing dams
  - attaching, securing, lifting, carrying and placing materials
- working safely around:
  - overhead power lines
  - other machines and personnel
  -

Knowledge Evidence

The candidate must demonstrate knowledge of conducting wheeled dozer operations through:

- communicating and performing isolation procedures
- identifying equipment processes, technical capability and limitations
- interpreting plans, reports, maps, specifications
- identifying, interpreting and using geological and technical data (basic)
- identifying signs of operator fatigue and how it should be managed

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- applying dozer operational procedures and techniques (including towing and pushing)
- applying operational, maintenance and basic diagnostics
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
- when assessing this unit in the context of the Metalliferous Mining sector:
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
- when assessing this unit in the context of the Coal Mining sector:
  - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,
- when assessing this unit in the context of the Extractive sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,
- when assessing this unit in the context of the Civil Construction sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
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RIIMPO318D Conduct civil construction skid steer loader operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to conduct civil construction skid steer loader operations in Civil construction.

This unit is appropriate for those working in operational roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for skid steer loader operations	1.1 Access, interpret and apply skid steer loader operations documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Obtain, identify and implement traffic signage requirements 1.6 Select, and check for faults, equipment and/or attachments for work activities 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Operate skid steer loader	2.1 Carry out pre-start, start-up, park, shutdown and secure equipment procedures 2.2 Coordinate activities with others at the site prior to commencement of, and during, the work activity 2.3 Continually monitor hazards and risks , and ensure safety of

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	self, other personnel, plant and equipment 2.4 Drive and operate loader, and modify the operating technique to meet changing work conditions 2.5 Complete work plan within the operating capacity of the equipment 2.6 Act on or report monitoring systems and alarms
3. Load, carry and place materials	3.1 Conduct communication practices associated with transportation and lifting of materials 3.2 Establish weight of load and ensure it is within safe operational limits of the machine 3.3 Select, attach and apply slings and lifting gear in accordance with safe working load requirements 3.4 Position machinery to ensure stability and locate to effectively shift materials according to job specifications 3.5 Shift load safely and effectively 3.6 Move load using hand/audible/communication signals
4. Select, remove and fit attachments	4.1 Select attachment for the task 4.2 Remove and fit attachment 4.3 Test attachment and ensure correct fitting and operation 4.4 Use attachment in accordance with recommendations and design limits 4.5 Clean and store removed attachments in designated location
5. Relocate the skid steer loader	5.1 Prepare for relocation of skid steer loader 5.2 Move skid steer loader safely between worksites, observing relevant codes and traffic management requirements 5.3 Load and unload machine from float/trailer
6. Carry out machine operator maintenance	6.1 Prepare machine for maintenance 6.2 Conduct inspection and fault finding 6.3 Carry out scheduled maintenance tasks 6.4 Process written maintenance records
7. Conduct housekeeping activities	7.1 Clear work area and dispose of or recycle materials 7.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 7.3 Process records

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Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIMPO318B Conduct civil construction skid steer loader operations

Links

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Assessment Requirements for RIIMPO318D Conduct civil construction skid steer loader operations

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of civil construction skid steer loader operations including:
  - conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
  - carrying out vehicle refuelling requirements and procedures
  - driving and operating the equipment to site conditions
  - applying safe work practices and identifying and reporting all potential hazards, risks and environmental issues
  - applying problem solving and troubleshooting techniques
  - applying leveling techniques
  - selecting and using the required tools and equipment
  - working safely around other machines and personnel
  - safely parking and securing of equipment
  - applying methods of changing machine attachments
- works effectively with others to undertake and complete civil construction skid steer loader operations that meet all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - maintaining written and verbal reporting requirements and procedures
  - organising work activities to meet all task requirements
  - communicating clearly and concisely with others to receive and clarify work instructions
- demonstrates consistent timely completion of civil construction skid steer loader operations that safely, effectively and efficiently meet the required outcomes on a minimum of three (3) separate occasions including:
  - completion of operations to specification in a minimum of two (2) different soil types on three (3) occasions including:

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- stripping/spreading topsoil and materials
- backfilling
- lifting, loading vehicles
- excavations
- mixing materials
- site clean-up
-

Knowledge Evidence

The candidate must demonstrate knowledge in conducting civil construction skid steer loader operations through:

- identifying, interpreting ground conditions
- communicating and performing isolation procedures
- identifying equipment processes, technical capability and limitations
- being prepared for fire/accident/emergency
- identifying signs of operator fatigue and how it should be managed identifying
- interpreting drawings and sketches
- identifying site isolation and traffic control responsibilities and authorities
- using civil construction terminology
- complying with project quality requirements
- applying basic principles of soil technology and soil compaction for civil works
- using basic earthworks calculations
- using civil construction activity sequences of road construction, earthworks and drainage
- using methods for calculating safe working loads
- applying operational, maintenance and basic diagnostics
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector’s work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years’ work experience in the Industry sector; and,

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- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
-

Links

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RIIMPO319D Conduct backhoe/loader operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to conduct backhoe/loader operations in Civil construction.

This unit is appropriate for those working in operational roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for backhoe/loader operations	1.1 Access, interpret and apply backhoe/loader operations documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work instructions 1.3 Identify and address risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, obtain and implement signage traffic management requirements 1.6 Select, and check for faults, equipment and/or attachments for work activities 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Operate backhoe/ loader	2.1 Carry out pre-start, start-up, park, shutdown and secure equipment procedures 2.2 Coordinate activities with others at the site prior to commencement of, and during, the work activity 2.3 Continually monitor hazards and risks , and ensure safety of

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	self, other personnel, plant and equipment 2.4 Drive and operate machine, and modify the operating technique to meet changing work conditions 2.5 Complete work plan within the operating capacity of the equipment 2.6 Act on or report monitoring systems and alarms
3. Load, carry and place materials	3.1 Conduct communication practices associated with transportation and lifting of materials 3.2 Establish weight of load and ensure it is within safe operational limits of the machine 3.3 Select, attach and apply slings and lifting gear in accordance with safe working load requirements 3.4 Position and locate machinery to ensure stability to effectively shift materials according to job specifications 3.5 Shift load safely and effectively 3.6 Move load using hand/audible/communication signals
4. Select, remove and fit attachments	4.1 Select attachment for the task 4.2 Remove and fit attachment 4.3 Test attachment and ensure correct fitting and operation 4.4 Use attachment in accordance with recommendations and design limits 4.5 Clean and store removed attachments in designated location
5. Relocate the backhoe/ loader	5.1 Prepare backhoe/loader for relocation 5.2 Move backhoe/loader safely between worksites, observing relevant codes and traffic management requirements
6. Carry out machine operator maintenance	6.1 Prepare machine for maintenance 6.2 Conduct inspection and fault finding 6.3 Carry out scheduled maintenance tasks 6.4 Process written maintenance records
7. Clean up	7.1 Clear work area and dispose of or recycle materials 7.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 7.3 Process records

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Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIMPO319A Conduct backhoe loader operations

Links

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Assessment Requirements for RIIMPO319D Conduct backhoe/loader operations

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of backhoe/ loader operations including:
  - conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
  - carrying out vehicle refuelling requirements and procedures
  - driving and operating the equipment to site conditions
  - applying safe work practices and identifying and reporting all potential hazards, risks and environmental issues
  - applying problem solving and troubleshooting techniques
  - applying leveling techniques
  - selecting and using the required tools and equipment
  - working safely around other machines and personnel
  - safely parking and securing of equipment
  - applying methods of changing machine attachments
- works effectively with others to undertake and complete backhoe/ loader operations that meet all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - maintaining written and verbal reporting requirements and procedures
  - organising work activities to meet all task requirements
  - communicating clearly and concisely with others to receive and clarify work instructions
- demonstrates consistent timely completion of backhoe/loader operations that safely, effectively and efficiently meet the required outcomes on a minimum of three (3) occasions including:
  - completion of operations to specification in a minimum of two (2) different soil types:

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- mixing materials
- stripping/spreading topsoils and materials
- trench excavation
- backfilling
- lifting and carrying materials
- loading dump trucks, wagons, hoppers, chutes, and cutting/boxing
- fitting and removal of a minimum of three (3) attachments selected from the following:
- extending devices
- tilt bucket
- buckets
- compaction wheel
- ripper
- plate compactor
- rock breaker
- auger
- broom
- mower/slasher
- forklift
- 4 in 1 bucket and free/rock grab
-

Knowledge Evidence

The candidate must demonstrate knowledge of conducting backhoe/loader operations through:

- identifying, interpreting ground conditions
- communicating and performing isolation procedures
- identifying equipment processes, technical capability and limitations
- being prepared for fire/accident/emergency
- identifying signs of operator fatigue and how it should be managed identifying
- interpreting drawings and sketches
- identifying site isolation and traffic control responsibilities and authorities
- using civil construction terminology
- complying with project quality requirements
- applying basic principles of soil technology and soil compaction for civil works
- using basic earthworks calculations
- using civil construction activity sequences of road construction, earthworks and drainage
- applying leveling techniques
- using methods for calculating safe working loads

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- applying operational, maintenance and basic diagnostics
- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
-

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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RIIMPO320D Conduct civil construction excavator operations

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to conduct civil construction excavator operations in Civil construction.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for excavator operations	1.1 Access, interpret and apply excavator operations documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Obtain, identify and implement traffic management signage requirements 1.6 Select, and check for faults, equipment and/or attachments for work activities 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2. Operate excavator	2.1 Carry out pre-start, start-up, park, shutdown and secure equipment procedures 2.2 Coordinate activities with others at the site prior to commencement of, and during, the work activity

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	2.3 Continually monitor hazards and risks , and ensure safety of self, other personnel, plant and equipment 2.4 Drive and operate excavator, and modify the operating technique to meet changing work conditions
3. Lift, carry and place materials	3.1 Conduct communication practices associated with transportation and lifting of materials 3.2 Establish weight of load and ensure it is within safe operational limits of the machine 3.3 Select, attach and use slings and lifting gear in accordance with safe working load requirements 3.4 Position machinery and ensure stability and locate to effectively shift materials according to job specifications 3.5 Shift load safely and effectively 3.6 Move load using hand/audible/communication signals
4. Select, remove and fit attachments	4.1 Select attachment for the task 4.2 Remove and fit attachment according 4.3 Test attachment and ensure correct fitting and operation 4.4 Use attachment in accordance with recommendations and design limits 4.5 Remove, clean and store attachments in designated location
5. Relocate the excavator	5.1 Prepare excavator for relocation 5.2 Move excavator safely between worksites, observing relevant codes and traffic management requirements 5.3 Load and unload machine from float/trailer
6. Carry out machine operator maintenance	6.1 Prepare machine for maintenance 6.2 Conduct inspection and fault finding 6.3 Carry out scheduled maintenance tasks 6.4 Process written maintenance records
7. Conduct housekeeping activities	7.1 Clear work area and dispose of or recycle materials 7.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 7.3 Process records

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Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIMPO320B Conduct civil construction excavator operations

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIIMPO320D Conduct civil construction excavator operations

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of excavator operations including:
  - conducting prestart checks prior to commencing operations and shutdown procedures on completion of operations
  - carrying out vehicle refuelling requirements and procedures
  - driving and operating the equipment to site conditions
  - applying safe work practices and identifying and reporting all potential hazards, risks and environmental issues
  - applying problem solving and troubleshooting techniques
  - applying leveling techniques
  - selecting and using the required tools and equipment
  - working safely around other machines and personnel
  - safely parking and securing of equipment
  - applying methods of changing machine attachments
- works effectively with others to undertake and complete excavator operations that meet all of the required outcomes including:
  - using a range of communications techniques and equipment to convey information to others
  - maintaining written and verbal reporting requirements and procedures
  - organising work activities to meet all task requirements
  - communicating clearly and concisely with others to receive and clarify work instructions
- demonstrates consistent timely completion of excavator operations that safely, effectively and efficiently meet the required outcomes on a minimum of three (3) occasions including:
- completion of operations to specification in a minimum of two (2) different soil types on three (3) occasions including:

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  - loading
  - lifting and carrying materials
  - bulk excavation
  - backfilling
  - trench excavation
  - stockpiling
  - battering
  - benching
  - site clean up
- fitting and removal of a minimum of three (3) attachments selected from the following:
  - tilt bucket
  - buckets
  - lifting device
  - vibrating compaction wheel
  - ripper/tyne
  - compaction plate
  - compaction wheel
  - rock breaker
  - auger
  -

Knowledge Evidence

The candidate must demonstrate knowledge of conducting civil construction excavator operations through:

- identifying, interpreting ground conditions,
- communicating and performing isolation procedures
- identifying equipment processes, technical capability and limitations
- being prepared for fire/accident/emergency
- identifying signs of operator fatigue and how it should be managed identifying
- interpreting drawings and sketches
- identifying site isolation and traffic control responsibilities and authorities
- using civil construction terminology
- complying with project quality requirements
- applying basic principles of soil technology and soil compaction for civil works
- using basic earthworks calculations
- using civil construction activity sequences of road construction, earthworks and drainage
- using methods for calculating safe working loads
- applying operational, maintenance and basic diagnostics

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- completing housekeeping activities
-

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
-

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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RIIRIS301D Apply risk management processes

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to apply risk management processes in the Resources and Infrastructure Industries.

This unit is appropriate for those working in operational or supervisory roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Elements and Performance Criteria

1 Plan and prepare for risk management	1.1 Access, interpret and apply risk management documentation and ensure the work activity is compliant 1.2 Inspect and analyse work area conditions regularly and systematically to identify potential hazards 1.3 Access, interpret and apply existing procedures to control identified hazards 1.4 Identify hazards not controlled by existing procedures 1.5 Recognise the type and scope of unresolved hazards and their likely impact
2 Assess and identify unacceptable risk	2.1 Consider and determine the likelihood of an event 2.2 Evaluate and determine the consequence of the event 2.3 Consider and determine the risk level (likelihood and consequence combined) 2.4 Identify or source the criteria for determining the acceptability/unacceptability of the risk 2.5 Evaluate the risk and identify 'unacceptable risk' status
3 Review risk management documentation	3.1 Monitor and review working instructions 3.2 Seek authority and approval to amend in writing the working instructions 3.3 Seek authority and approval to action amendments to the working instructions

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4 Identify and recommend controls	4.1 Identify the range of controls which may eliminate or minimise the risk 4.2 Conduct a detailed analysis of feasible options including the identification of resource requirements 4.3 Select the most appropriate control for dealing with the situation
5 Contribute to the implementation of controls	5.1 Write up the risk management plans selected control in detail, including resource requirements 5.2 Gain authorisation for selected control 5.3 Document and review controls for the job 5.4 Apply procedures to control recognised hazards 5.5 Communicate information on the control and its implementation

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIRIS301B Apply risk management processes

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIIRIS301D Apply risk management processes

Modification History

Performance Evidence and Knowledge Evidence replaced with correct information, as endorsed by NSSC.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- apply legislative, organisation and site requirements and procedures
- research, analyse and apply relevant operational information
- demonstrate and apply common industry terminology
- interpret work procedures and processes
- use effective communication skills, including questioning and active listening skills with supervisors and other employees
- write reports
- apply planning and organising skills to the risk management processes
- demonstrate teamwork to involve and engage the employers/supervisors in the risk management processes
- apply problem solving skills to technical resources and infrastructure issues

Knowledge Evidence

The candidate must demonstrate knowledge of apply the risk management process through:

- OHS legislation and regulations
- appropriate resources and infrastructure context and language
- topics or subject areas which are target for assessment and treatment
- site risk management systems and their application
- conventions and requirements for written communications including report writing

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;

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- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
  - when assessing this unit in the context of the **Drilling** sector:
    - an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; or,
    - where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing; or,
  - when assessing this unit in the context of the **Metalliferous Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
  - when assessing this unit in the context of the **Coal Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,
  - when assessing this unit in the context of the **Extractive** sector
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,
  - when assessing this unit in the context of the **Civil Construction** sector
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,

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- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.
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Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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RIISAM201D Handle resources and infrastructure materials and safely dispose of nontoxic materials

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to handle resources and infrastructure materials and safely dispose of nontoxic materials in the Resources and Infrastructure Industry.

This unit is appropriate for those working in operational roles.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Elements and Performance Criteria

1 Plan and prepare for handling resources and infrastructure materials and safely disposing of nontoxic materials	1.1 Access, interpret and apply nontoxic materials handling and disposal documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.4 Select and wear personal protective equipment appropriate for work activities 1.5 Identify, obtain and implement the traffic management signage requirements 1.6 Select and check for faults tools and equipment for the work activity 1.7 Obtain and interpret emergency procedures, and be prepared for fire/accident/emergency
2 Handle and remove waste	2.1 Comply with safety data sheets and requirements of regulatory authorities 2.2 Identify hazardous materials for separate handling 2.3 Follow procedures for the removal of non-toxic materials 2.4 Apply dust suppression procedures
3 Conduct House	3.1 Clear work area and dispose of or recycle materials

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Keeping Activities	3.2 Clean and maintain condition of equipment, ensure suitability for use, and address/report issues 3.3 Process records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIISAM201A Handle resources and infrastructure materials and safely dispose of nontoxic materials

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIISAM201D Handle resources and infrastructure materials and safely dispose of nontoxic materials

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of handling resources and infrastructure materials and safely disposing of nontoxic materials including:
  - apply teamwork to a range of situations, particularly in a safety context
  - solve problems particularly in teams and in dealing practically with safety issues
  - show initiative in adapting to changing work conditions or contexts particularly when working across a variety of work placements
  - manage time, particularly in organising priorities and planning work
  - take responsibility for self organisation of work priorities
  - show a willingness to learn and to use a range of mediums to learn
- demonstrates consistent timely completion of handling resources and infrastructure materials and safely disposing of nontoxic materials that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - complying with safety data sheets and requirements of regulatory authorities
  - identifying hazardous materials for separate handling
  - following procedures for the removal of non-toxic materials
  - applying dust suppression procedures
  - clearing work area and dispose of or recycle materials

Knowledge Evidence

The candidate must demonstrate knowledge in handling resources and infrastructure materials and safely disposing of nontoxic materials through:

- identifying the most commonly encountered waste materials on worksites
- applying systems for packing and securing materials for movement

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- applying systems and equipment or materials for the short term protection of stacked/stored materials
- applying methods of dust suppression
- identify site isolation and traffic control responsibilities and authorities
- identify and apply Industry and worksite terminology

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
  - when assessing this unit in the context of the **Drilling** sector:
    - an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; or,
    - where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing; or,
  - when assessing this unit in the context of the **Metalliferous Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
  - when assessing this unit in the context of the **Coal Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,
  - when assessing this unit in the context of the **Extractive** sector
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,

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- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,

- when assessing this unit in the context of the **Civil Construction** sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

Links

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RIIWHS202D Enter and work in confined spaces

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to enter and work in confined spaces in the Resources and Infrastructure Industries.

This unit is appropriate for those working in operational roles undertaking work in confined spaces.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Elements and Performance Criteria

1 Plan and prepare for working in confined space	1.1 Access, interpret and apply procedures for confined space entry and the environmental management plan and ensure the work activity is compliant 1.2 Obtain, confirm, clarify and apply work instructions and agreed procedure 1.3 Obtain, confirm, clarify and apply safety requirements 1.4 Obtain and confirm authorisation (entry permit) meets regulatory requirements 1.5 Confirm the emergency response procedure is with the stand-by person and understood 1.6 Identify, obtain and implement signage and barrier requirements 1.7 Select tools and equipment for the tasks, check for serviceability and rectify or report any faults 1.8 Identify, confirm and apply the environmental protection requirements 1.9 Position rescue equipment by the entry permit
2 Work in confined space	2.1 Gain access to confined space 2.2 Ensure that the atmosphere is tested and monitored for harmful elements

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	2.3	Correctly apply tagging and lock-out procedures
	2.4	Enter the confined space correctly
	2.5	Maintain ongoing communication with the stand-by person
	2.6	Comply with entry permit requirements
	2.7	Monitor and adhere to allocated entry time
3 Exit confined space	3.1	Exit confined space correctly
	3.2	Recover tools, equipment and materials
	3.3	Conduct inspection of the confined space
	3.4	Secure access to the confined space
	3.5	Remove tagging and lock-out
	3.6	Accurately complete confined space entry permit
4 Clean up	4.1	Clear work area and dispose of or recycle materials
	4.2	Clean, check, maintain and store tools and equipment
	4.3	Remove, clean and store barriers and signs

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIOHS202A Entering and working in confined spaces

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIIWHS202D Enter and work in confined spaces

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- demonstrates consistent timely completion of entering and working in confined spaces that safely, effectively and efficiently meets the required outcomes on three (3) separate occasions including:
- obtain appropriate entry permit and instructions for performing work in confined space
- interpreting and applying safe work method statements
- apply tagging and lock out
- selecting, wearing and caring for personal protective equipment applicable to all tasks and environment identified
- entering the confined space
- using atmospheric monitoring devices prior to entering the confined space
- working in the confined space
- using atmospheric monitoring devices during confined space activity
- applying safe materials handling methods
- exiting the confined space
- remove tagging and lock out

Knowledge Evidence

The candidate must demonstrate knowledge of enter and work in confined spaces through:

- identifying areas that constitute confined spaces
- complying with site and equipment safety requirements
- complying with the entry and exit procedures, risks and regulations
- types of air contaminants and toxic gases
- identifying the limitations of breathing apparatus
- identifying equipment types, characteristics, technical capabilities and limitations
- complying with site isolation and site control responsibilities and authorities
- locations of safety data sheets (SDS) information and application
- using confined space and Industry terminology

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Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
  - when assessing this unit in the context of the **Drilling** sector:
    - an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; or,
    - where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing; or,
  - when assessing this unit in the context of the **Metalliferous Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
  - when assessing this unit in the context of the **Coal Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,
  - when assessing this unit in the context of the **Extractive** sector
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,
  - when assessing this unit in the context of the **Civil Construction** sector

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- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

Links

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RIIWHS204D Work safely at heights

Modification History

Not applicable.

Application

This unit describes a participant's skills and knowledge required to work safety at heights in the Resources and Infrastructure Industries.

This unit it appropriate for those working in operational roles where they are required to perform work at heights.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Elements and Performance Criteria

1 Identify work requirements	1.1 Access, interpret and apply height safety procedures and ensure the work activity is compliant 1.2 Identify and prepare written documentation for the scope of the task and proposed work practices/activities 1.3 Adhere to WHS requirements 1.4 Inspect site to determine layout and physical condition, condition of structures, prevailing weather conditions, equipment requirements and potential hazards 1.5 Identify, select and check safety equipment for serviceability 1.6 Identify, manage and report potential risks and hazards
2 Identify work procedures and instructions	2.1 Select materials, tools and equipment and check for serviceability 2.2 Select, wear and care for personal protective equipment 2.3 Inspect/install fall protection and perimeter protection equipment 2.4 Identify approved methods of moving tools and equipment to work area and minimise potential hazards associated with tools at heights 2.5 Install safety system correctly 2.6 Select and install appropriate signs and barricades

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3 Access and install equipment	3.1 Correctly fit, adjust and anchor fall protection and associated equipment 3.2 Make arrangements to install required equipment 3.3 Use recommended methods to access work area for people, tools and equipment 3.4 Locate tools and materials to eliminate or minimise the risk of items being knocked down
4 Perform work at heights	4.1 Check access from ground to work area and ensure it is safe 4.2 Keep fall equipment in place and adjusted appropriately for movement during work 4.3 Undertake manual handling of materials and equipment 4.4 Locate materials and equipment ensuring that they are safely secured and distributed 4.5 Check safety system periodically for compliance 4.6 Monitor risk control measures to ensure that they are effective and appropriate 4.7 Reassess risk control measures, as required, in accordance with changed work practices and/or site conditions and undertake alterations
5 Clean up work area	5.1 Dismantle and remove safety system 5.2 Clear work area and dispose of or recycle materials 5.3 Clean, check, maintain and store tools and equipment

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIOHS204A Working safely at heights

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272

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Assessment Requirements for RIIWHS204D Work safely at heights

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- demonstrates consistent timely completion of work at heights that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - accessing, interpreting and applying technical and safety information for working at heights
  - assessing hazards and risk associated with working at heights and implement control methods
  - selecting wearing and caring for personal protective equipment
  - identifying required safety systems including fall protection and associated equipment
  - correctly fitting, adjusting and anchoring of fall protection and associated equipment
  - performing work safely at heights
  - dismantle and remove safety systems

Knowledge Evidence

The candidate must demonstrate knowledge of working safely at heights through:

- names and functions of equipment, components and materials
- complying with equipment manufacturer's instructions and specifications
- safe shifting and handling of tools and materials
- adhering to statutory and regulatory authority requirements
- the nature of work undertaken at heights
- complying with heights safety systems
- the processes of providing for safe working practices
- using safety equipment/systems and considerations to facilitate working safely at heights
- complying with safe work methods

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Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
  - when assessing this unit in the context of the **Drilling** sector:
    - an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; or,
    - where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing; or,
  - when assessing this unit in the context of the **Metalliferous Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
  - when assessing this unit in the context of the **Coal Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,
  - when assessing this unit in the context of the **Extractive** sector
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,
  - when assessing this unit in the context of the **Civil Construction** sector

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- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

Links

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RIIWHS205D Control traffic with stop-slow bat

Modification History

Performance criteria numbering for element 1 corrected.

Application

This unit describes a participant's skills and knowledge required to control traffic with stop-slow bat in the Resources and Infrastructure Industries.

This unit is appropriate for those working in operational roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Pre-requisite Unit

Unit Sector

Elements and Performance Criteria

1. Plan and prepare	1.1 Access, interpret and apply site traffic plan procedures and ensure the work activity is compliant 1.2 Obtain, confirm, clarify and apply work instructions 1.3 Obtain, confirm, clarify and apply safety requirements 1.4 Identify, obtain and implement signage and devices 1.5 Select tools and equipment, check for serviceability and rectify or report any faults 1.6 Identify, confirm, clarify and apply environmental protection requirements
2. Control traffic	2.1 Position or confirm temporary traffic signs and barriers 2.2 Direct traffic correctly 2.3 Control vehicles and pedestrian traffic and ensure safety 2.4 Monitor traffic, make adjustments for changing conditions and position waiting vehicles for smooth traffic flow 2.5 Use hand held stop/slow bats 2.6 Use visibly clear and unobstructed hand signals

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	2.7 Report traffic offenders
3. Operate communication devices	3.1 Adjust communication device controls for optimum reception/transmission results 3.2 Transmit messages clearly and concisely 3.3 Maintain communication device power supply 3.4 Check communications contact after nominated period of non-contact
4. Clean up	4.1 Remove or cover signs and devices sequentially to provide warning to motorists during shutdown 4.2 Clean, check, maintain and store tools and equipment

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Range of Conditions

Unit Mapping Information

RIIOHS205A Control traffic with stop-slow bat

Links

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Assessment Requirements for RIIWHS205D Control traffic with stop-slow bat

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- demonstrates consistent timely control of traffic with a stop-slow bat that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - reading and interpreting the work instruction and planning work activity accordingly
  - positioning signage and barriers
  - directing and controlling vehicle traffic
  - directing and controlling pedestrian traffic
  - communicating to drivers and pedestrians clearly using hand signals
  - using approved communication devices such as hand held radios or phones to transmit message and report of offenders
  - removing or covering signs after work completion

Knowledge Evidence

The candidate must demonstrate knowledge of controlling traffic with stop-slow bat through:

- site and equipment safety requirements
- traffic controlling requirements and procedures
- complying with traffic management plans
- erecting traffic control signage and barricades
- communication device operations
- determine equipment types, characteristics, technical capabilities and limitations
- operational and maintenance procedures for equipment
- detailing site isolation and traffic control responsibilities and authorities
- describing the effects of travel speed and vehicle mass on stopping distances
- interpreting and implementing safe work method statement

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Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
  - when assessing this unit in the context of the **Drilling** sector:
    - an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; or,
    - where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing; or,
  - when assessing this unit in the context of the **Metalliferous Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
  - when assessing this unit in the context of the **Coal Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,
  - when assessing this unit in the context of the **Extractive** sector
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,
  - when assessing this unit in the context of the **Civil Construction** sector

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- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

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RIIWHS302D Implement traffic management plan

Modification History

Not applicable.

Application

This unit develops a participant's skills and knowledge required to implement a traffic management plan in Civil construction.

This unit is appropriate for those working in supervisory roles.

Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and Industry sectors. Relevant information must be sourced prior to application of the unit.

Elements and Performance Criteria

1 Plan and prepare to implement traffic management plan	1.1 Access, interpret and apply traffic management documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify, address and report potential risks, hazards and environmental issues and implement control measures 1.4 Select and wear personal protective equipment appropriate for the work activity 1.5 Identify, obtain and implement traffic control signage and devices 1.6 Select, and check for faults, tools and equipment to carry out tasks 1.7 Identify, confirm and apply environmental protection requirements 1.8 Check the designated traffic controllers' training and qualifications for currency 1.9 Advise traffic controllers of the traffic flow requirements
2 Set out the traffic guidance scheme	2.1 Select traffic guidance scheme to suit site conditions, traffic volumes and work activities 2.2 Determine and ensure adherence to work schedule, maximum traffic delays, signals and site communications 2.3 Ensure signs and devices are correctly positioned on the

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	approaches to the work area 2.4 Ensure that signs and devices are positioned and displayed on each approach 2.5 Ensure signs and devices are positioned and displayed laterally 2.6 Ensure traffic is controlled effectively to protect the work crew
3 Monitor traffic guidance scheme	3.1 Ensure traffic flow is monitored and effectiveness of guidance scheme determined 3.2 Monitor work activities and provide guidance to adjust scheme 3.3 Apply process for dealing with traffic controllers who fail to adhere to approved procedures 3.4 Apply procedures to deal with offending motorists
4 Close down traffic guidance scheme	4.1 Ensure traffic is controlled to protect work crew removing traffic control devices 4.2 Ensure signs are removed in sequence to provide maximum warning during removal 4.3 Ensure guidance scheme details are recorded and reported as required 4.4 Ensure incidents are recorded and reported as required
5 Clean up	5.1 Ensure work area is appropriately cleared 5.2 Ensure tools and equipment are cleaned, checked, maintained and stored

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIOHS302A Implement traffic management plan

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Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ca051b1b-5101-4ec2-ac1c-49699303188d

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Assessment Requirements for RIIWHS302D Implement traffic management plan

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- works effectively with others to undertake and complete the traffic management plans that meet all of the required outcomes including:
  - complying with written and verbal reporting requirements and procedures
  - communicating clearly and concisely with others to receive and clarify work instructions
  - communicating clearly and concisely with others to resolve coordination requirements prior to commencing and during work activities
- demonstrates consistent timely implementation of traffic management plans that safely, effectively and efficiently meets the required outcomes on a minimum of three (3) separate occasions including:
  - complying with State/Territory regulations on three separate live traffic projects, and
  - completing one (1) project controlling site construction vehicles
  - identify and select traffic guidance scheme according to conditions
  - identify and select traffic guidance scheme according to conditions select and implement signage and device requirements, position and display according to site plan
  - monitor and adjust scheme according to variances in requirements
  - apply procedures to deal with non-compliant crew and motorists

Knowledge Evidence

The candidate must demonstrate knowledge of implementing a traffic management plan through:

- accessing, interpreting and applying legislative, organization and site requirements and procedures for:
  - JSAs/JSEA/Safe work method statement
  - potential hazards and risks
  - controlling traffic

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  - basic signalling
  - signs and devices
  - radio operations
- identifying equipment types, characteristics, technical capabilities and limitations
- identifying site isolation and traffic control responsibilities and authorities
- identifying quality requirements
- applying civil construction terminology

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's work environment;
- where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- assessor requirements differ between sectors as follows:
  - when assessing this unit in the context of the **Drilling** sector:
    - an assessor must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through five (5) years of work in the Industry sector; or,
    - where a co-assessment or partnership arrangement exists between a qualified assessor and an Industry technical expert, the Industry technical expert can hold the unit being assessed, and/or demonstrate equivalency of skills and knowledge at the unit level. An Industry technical expert must also demonstrate a minimum of three (3) years of continuous work in the Industry sector, with the preceding one (1) year in the unit they are co-assessing; or,
  - when assessing this unit in the context of the **Metalliferous Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through five (5) years of current and continuous work with the Industry sector and must hold the TAE Assessor Skill Set or equivalent; or,
  - when assessing this unit in the context of the **Coal Mining** sector:
    - an assessor must demonstrate the skills and knowledge of this unit through twelve (12) month work experience in an Industry relevant to the skills being assessed within the last three (3) years; and,
    - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must demonstrate competency in the unit being assessed, and be currently working in the sector with a minimum of twelve (12) months' work experience within the last three (3) years; or,

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- when assessing this unit in the context of the **Extractive** sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience; or,
- when assessing this unit in the context of the **Civil Construction** sector
  - an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
  - where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

Links

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RIIWMG203D Drain and dewater civil construction site

Modification History

Not applicable.

Application

This unit develops a participant's skills and knowledge required to drain and dewater civil construction sites in Civil construction.

This unit is appropriate for those working in operational roles.

No licensing, legislation or certification requirements apply to this unit at the time of publication.

Unit Sector

Civil construction

Elements and Performance Criteria

1. Plan and prepare for draining and dewatering	1.1 Access, interpret and apply drain and dewatering documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify, obtain and implement traffic signage requirements 1.4 Select and inspect required plant, tools and equipment and rectify/report any faults 1.5 Identify, clarify and apply environmental protection requirements 1.6 Identify and address potential risks, hazards and environmental issues, and implement control measures 1.7 Select and wear personal protective equipment appropriate for work activities
2. Position sedimentation control	2.1 Position sedimentation controls 2.2 Construct sedimentation control barriers 2.3 Position geo-fabrics and/or woven wire
3. Remove surface water	3.1 Establish temporary drainage systems and drain or divert surface and sub-surface water to the storm water drainage system

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	3.2 Remove slab and site surface water and/or direct to the temporary drainage system 3.3 Fill surface holes and depressions 3.4 Drain surface water to drainage system using adequate fall
4. Construct sump/wells	4.1 Locate sump and/or well at the lowest point to be drained 4.2 Construct sumps and/or wells
5. Remove water from sumps/wells, trenches and pits	5.1 Install surface or submersible pumps 5.2 Locate surface pump as close as practicable to the sump or well 5.3 Pump water to temporary drainage system 5.4 Disperse discharged water
6. Clean up	6.1 Clear work area and dispose of or recycle materials 6.2 Clean, check, maintain and store plant, tools and equipment

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIWMG203A Drain and dewater civil construction site

Links

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Assessment Requirements for RIIWMG203D Drain and dewater civil construction site

Modification History

Not applicable.

Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient completion of the draining and dewatering of a civil construction site including:
  - selecting and using the required tools and equipment
  - interpreting and applying work instructions
  - draining surface water
  - constructing sumps and wells and removing water
- works effectively with others to undertake and complete the draining and dewatering of civil construction sites that meets all of the required outcomes including:
  - using a range of communication techniques to convey information to others
  - maintaining written and verbal reporting requirements and procedures
- demonstrates consistent and timely completion of the draining and dewatering of civil construction sites that safely, effectively and efficiently meet all of the required outcomes on a minimum of three (3) separate occasions including:
  - dewatering a trench or pit using at least one type of pump on two (2) separate projects
  - establishing sedimentation controls for a minimum of one (1) project
  - constructing a sump
  - installing surface or submersible pumps
  - pumping and dispersing water
  - draining surface water from a site using surface drains

Knowledge Evidence

The candidate must demonstrate knowledge in draining and dewatering civil construction sites through:

- identifying and applying operational, maintenance and basic diagnostic procedures

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- identifying and complying with construction principles
- interpreting engineering drawings
- identifying equipment types, characteristics, technical capabilities and limitations
- identifying and complying with site isolation and traffic control responsibilities
- using and interpreting civil construction terminology

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed using Resources and Infrastructure Industry sector specific policies, procedures, processes and operational manuals; and,
- an assessor must demonstrate the skills and knowledge of this unit through five (5) years' work experience in the Industry sector; and,
- where the assessor does not have current experience a co-assessment or partnership arrangement needs to exist between the qualified assessor and an Industry technical expert/ subject matter expert. The Industry technical expert/subject matter expert must hold the unit being assessed and be currently working in the sector with a minimum of two (2) years' of current work experience.

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TLIB2004A Carry out vehicle inspection

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to carry out an inspection of a commercial vehicle, including action to implement vehicle manufacturers specifications for routine checks, to clean the vehicle, and to ensure that all specified safety requirements are met and that the vehicle is operational to the requirements of both the workplace and the relevant state/territory roads and traffic authority. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the regulations of the relevant roads and traffic authority concerned with the inspection of commercial vehicles.

Work is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes. It involves the application of routine inspection principles and procedures to check the safety and operation of a commercial vehicle across a variety of operational contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Check the vehicle	1.1 A visual check of the internal and external condition of the vehicle is carried out following workplace procedures
	1.2 Pre-operational inspections and checks of the vehicle's tyres, suspension, fluid levels and other critical features are carried out to ensure conformance with the requirements of the relevant roads and traffic authority
	1.3 Associated equipment is tested to ensure it functions correctly to manufacturers specifications
	1.4 Post start-up and shut-down checks are carried out after engine is started to identify possible engine or electrical problems
	1.5 Warning systems (instruments and gauges) are checked to ensure they are operational
	1.6 Where relevant, vehicle monitoring device is logged on/off in accordance with manufacturers instructions and workplace policy
2 Clean vehicle	2.1 Vehicle and associated equipment is cleaned in accordance with workplace procedures and legislation
3 Complete documentation	3.1 Basic faults are identified and/or diagnosed and appropriate action is taken to report or remedy them as required by workplace procedures and legislation
	3.2 Records of inspection are updated and recommended repairs are documented in accordance with workplace polices

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant duty of care requirements for the routine inspection of vehicles
- Relevant OH&S and pollution control procedures
- Procedures for the routine inspection of a commercial vehicle in accordance with workplace and manufacturers requirements and established safety rules and regulations, including pre-operational checking procedures, visual inspection procedures and warning systems checking procedures
- Problems that may occur during the routine inspection of a vehicle and appropriate actions and solutions
- Basic principles of operation of systems on commercial vehicles, including electrical systems, fuel systems, cooling systems, steering systems, exhaust systems, tyres, brakes
- Reporting and documentation requirements

Required skills:

- Communicate effectively with others during the routine inspection of a vehicle
- Read and interpret instructions, procedures, information and manuals relevant to the routine inspection of a vehicle
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the routine inspection of a vehicle
- Operate electronic communication equipment to required protocol
- Work collaboratively with others during the routine inspection of a vehicle
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that are identified during the routine inspection of a vehicle in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may occur during the routine inspection of a vehicle
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment

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Required skills:

- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Use cleaning equipment
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation • As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests

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EVIDENCE GUIDE

- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or
  - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Maintenance may be carried out in typical road transport situations, including:	• operations conducted at day or night • typical weather conditions • in confined spaces, exposed conditions and controlled or open environment • while in the a depot, base or warehouse • while in the vehicle on the road • while at a client's workplace
Type of vehicle may include any commercial road transport vehicles including:	• light vehicles • heavy vehicles • combination vehicles
Inspection may include:	• visual checks of vehicle • routine checks of vehicle systems • checks in accordance with a detailed inspection schedule
Routine checks may include:	• water levels • oil levels • air pressure in tyres • brakes • lights • condition of tyres • battery • exhaust system • suspension
Environmental hazards may include:	• leaking oil and fuel • defective or inappropriately adjusted exhaust systems • inappropriate disposal of vehicle fluids in drains or sewerage systems

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RANGE STATEMENT

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Information/records may include:	• workplace routine inspection procedures, checklists and instructions • relevant state/territory roads and traffic authority vehicle maintenance regulations • vehicle manufacturers instructions, specifications and recommended procedures • precautions and procedures to be adopted to protect the environment when inspecting, servicing and maintaining vehicles • OH&S procedures to be followed when inspecting vehicles
Applicable regulations and legislation may include:	• relevant state/territory roads and traffic authority vehicle maintenance regulations and requirements • relevant state/territory OH&S legislation • relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field B - Equipment Checking and Maintenance

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TLIC2002A Drive light rigid vehicle

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to drive a light rigid vehicle safely including systematic and efficient control of all vehicle functions, monitoring of traffic and road conditions, management of vehicle condition, and performance and effective management of hazardous situations. Assessment of this unit may be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory Road Traffic Authority. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Driving must be carried out in compliance with the licence requirements and regulations of the relevant state/territory roads and traffic authority pertaining to light rigid vehicles.

Driving is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain the safety and operation of a commercial light rigid vehicle across a variety of driving contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Drive the light rigid vehicle	1.1 The light rigid vehicle is started, steered, manoeuvred, positioned and stopped in accordance with traffic regulations and manufacturers instructions
	1.2 Engine power is managed to ensure efficiency and performance and to minimise engine and transmission damage
	1.3 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
	1.4 The light rigid vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
	1.5 The light rigid vehicle is parked, shut down and secured in accordance with manufacturers specifications, traffic regulations and workplace procedures
	1.6 Appropriate procedures are followed in the event of a driving emergency
2 Monitor traffic and road conditions	2.1 The most efficient route of travel is taken through monitoring and anticipation of traffic flows and conditions, road standards and other factors likely to cause delays or route deviations
	2.2 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and ensure no injury to people or damage to property, equipment, loads and facilities
3 Monitor and maintain vehicle performance	3.1 Vehicle performance is maintained through pre-operational inspections and checks of the vehicle
	3.2 Performance and efficiency of vehicle operation is monitored during use
	3.3 Defective or irregular performance or malfunctions are reported to the appropriate authority

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ELEMENT	PERFORMANCE CRITERIA
	3.4 Vehicle records are maintained/updated and information is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements of the relevant state/territory road traffic authority
- Relevant OH&S and environmental procedures and regulations
- Light rigid vehicle controls, instruments and indicators and their use
- Light rigid vehicle handling procedures
- Driving hazards and related defensive driving techniques
- Procedures to be followed in the event of a driving emergency
- Engine power management and safe driving strategies
- Efficient driving techniques
- Pre-operational checks carried out on vehicle and related action
- Differences between transmission types
- Map reading and road navigation techniques including the use of a GPS device where applicable
- Factors which may cause traffic delays and diversions and related action that can be taken by a driver
- Workplace driving and operational instructions
- Principles of stress management when driving a vehicle
- Causes and effects of fatigue on drivers
- Factors which increase fatigue-related accidents
- Fatigue management strategies including on-road techniques
- Lifestyles which promote the effective long-term management of fatigue

Required skills:

- Communicate effectively with others when driving a commercial light rigid vehicle
- Read and interpret instructions, procedures, information and signs relevant to the driving of a commercial light rigid vehicle

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Required skills:

- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the driving of a commercial light rigid vehicle
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when driving a commercial light rigid vehicle
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events when driving a commercial light rigid vehicle
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when driving a commercial light rigid vehicle
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor and anticipate traffic hazards and take appropriate action
- Carry out pre-operational checkson the vehicle in the course of work activities

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying: • the underpinning knowledge and skills

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EVIDENCE GUIDE

	• relevant legislation and workplace procedures • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Type of vehicle includes:	• all light rigid vehicles including trucks and buses greater than 4.5 tonnes or seating more than 12 adults including the driver
Driving may be carried out in typical road transport situations, including:	• operations conducted at day or night • typical weather conditions • on the open road

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RANGE STATEMENT

	• on a private road • while at a depot, base or warehouse • while at a client's workplace or work site
Vehicle handling procedures may include:	• starting a vehicle • steering and manoeuvring a vehicle • accelerating and braking • positioning and stopping a vehicle • reversing a vehicle • operating vehicle controls, instruments and indicators • using defensive driving techniques • managing engine performance
Pre-operational checks may include:	• visual check of vehicle • checking and topping up of fluid levels • checks of tyre pressures • checks of operation of vehicle lights and indicators • checks of brakes
Minor routine repairs may include:	• replacement of blown globes in vehicle lights • replacement of broken fan belt • replacement of blown fuse • replacement of door mirrors • repairs to rear tail-light lens • changing of tyres • repair of tyre punctures • replacement of broken coolant hose
Driving hazards may include (examples only):	• wet and iced roads • oil on road • animals and objects on road • fire in vehicle • leaking fuel • faulty brakes • parked vehicles on the road • faulty steering mechanism on vehicle • pedestrians crossing the road • flooded sections of road • windy sections of road • foggy conditions
Factors that can cause traffic delays and diversions may include (examples only):	• traffic accidents • flooded sections of road • road damage • bridge/tunnel damage

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RANGE STATEMENT

	• road works • building construction • emergency situations such as bushfires, building fires, etc. • road closures for special events such as marches, parades, etc. • holiday traffic • road closures for utility works such as electricity, water, sewerage, telecommunications, gas, etc.
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Documentation/records may include:	• state/territory light rigid vehicle driving licence requirements • state/territory road rules • workplace driving instructions and procedures • vehicle manufacturers instructions, specifications and recommended driving procedures including preoperational checks of vehicle • emergency procedures • vehicle log book or record book (where required)
Applicable procedures and codes may include:	• relevant state/territory roads and traffic authority driving regulations and licence requirements pertaining to light rigid vehicles • relevant state/territory road rules • relevant state/territory permit regulations and requirements • relevant state/territory OH&S legislation • relevant state/territory fatigue management regulations • relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field C - Vehicle Operation

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TLIC2025A Operate four wheel drive vehicle

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to operate a four wheel drive vehicle safely in a range of conditions. These include driving a four wheel drive vehicle on normal roads, traversing slopes, ascending and descending steep slopes and stall recovery. It also includes operation of the vehicle in rugged terrain, the use of a jack and the completion of all pre- and post-operational checks. Licensing, legislative, regulatory or certification requirements may be applicable to this unit. Provisional car licence must be held prior to the commencement of this unit of competency for driving on public land/roads.

Application of the Unit

Application of the Unit

Driving must be carried out in compliance with the licence requirements and regulations of the relevant state/territory roads and traffic authority.

Driving is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of four wheel drive vehicle operating principles and procedures to maintain the safety and operation of a commercial four wheel drive vehicle across a variety of on-road and off-road contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

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Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Operate four wheel drive vehicles on normal roads	1.1 Pre-start checks of vehicle and equipment are carried out to manufacturers specifications and roadworthy requirements 1.2 Tyres are checked for pressure suitable for terrain and/or changed in accordance with workplace procedures 1.3 Loads are secured in accordance with workplace and legislative requirements 1.4 Vehicle is driven on-road and off-road to legislative and workplace requirements, at appropriate speeds for conditions and hazards 1.5 Vehicle is parked and shut down in accordance with workplace and manufacturers requirements
2 Operate vehicle on, or across, a slope	2.1 Pre-start checks of vehicle and equipment are carried out to manufacturers specifications and roadworthy requirements 2.2 Tyres are checked for pressure suitable for terrain and/or changed to operational guidelines 2.3 Loads are secured in accordance with workplace and legislative requirements 2.4 Vehicle is driven on-road and off-road to regulatory and workplace requirements at appropriate speeds for conditions and hazards
3 Operate vehicle ascending a steep slope	3.1 Intended vehicle path is inspected prior to negotiation of slope

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ELEMENT	PERFORMANCE CRITERIA
including stall recovery	3.2 Appropriate gear is selected to ascend grade, and engine revolutions are maintained to ensure constant traction 3.3 Air-conditioning unit is turned off to avoid engine acceleration 3.4 Foot brake is applied as vehicle stalls, handbrake applied and ignition turned off 3.5 Clutch is depressed and reverse gear is selected 3.6 Clutch is released and handbrake is slowly released 3.7 Ignition is turned on and brakes are released 3.8 Vehicle is started and allowed to reverse down the slope 3.9 Brakes are applied as necessary to control descent
4 Operate vehicle descending a steep slope including stall recovery	4.1 Intended vehicle path is inspected prior to negotiation of the slope 4.2 Appropriate gear is selected to ascend grade, and engine revolutions are maintained to ensure constant traction 4.3 Air-conditioning unit is turned off to avoid engine acceleration 4.4 Braking is used to control descent and skidding is avoided by the application of brakes to emulate ABS 4.5 Ignition is turned off, foot brake is applied, and handbrake engaged 4.6 Clutch is depressed and low gear is selected 4.7 Clutch is released and handbrake is slowly released 4.8 Ignition is turned on and brakes are released 4.9 Vehicle is started and allowed to continue down the slope 4.10 Brakes are applied as necessary to control descent and skids are steered into
5 Operate vehicle in rugged terrain	5.1 Intended vehicle path is inspected prior to negotiation of rugged terrain 5.2 Correct gear/range is selected to negotiate terrain 5.3 Freewheel hubs are engaged and disengaged in accordance with driving conditions 5.4 Vehicle controls are set in accordance with manufacturers instructions for operation in the surrounding terrain 5.5 Traction is maintained in accordance with requirements of the vehicle and the surrounding terrain 5.6 Selection of appropriate gear/range before negotiating terrain is demonstrated 5.7 Where necessary, chains are fitted to vehicle in accordance with manufacturers instructions 5.8 Vehicle load is inspected, positioned and secured to maximise traction for four wheel driving 5.9 Terrain is negotiated in accordance with requirements for

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ELEMENT	PERFORMANCE CRITERIA
	specific driving conditions
6 Operate jack	6.1 Jack is located under vehicle in accordance with vehicle manufacturers specifications and workplace procedures
	6.2 Jack is used and operated in accordance with manufacturers specifications and workplace procedures
7 Complete operations	7.1 Vehicle is parked and shut down to workplace and manufacturers requirements
	7.2 Faults or malfunctions are corrected and/or reported in accordance with workplace requirements
	7.3 Vehicle and equipment are cleaned and stored after use in accordance with workplace requirements
	7.4 Any reports required by the workplace are completed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Road rules, regulations, permit and licence requirements of the relevant state/territory road traffic authority
- Relevant OH&S and environmental procedures and regulations
- Workplace procedures for the operation of four wheel drive vehicle in both on-road and off-road situations
- Problems that may occur when operating a four wheel drive vehicle, and action that can be taken to report or resolve the problems
- Hazards that may exist when operating a four wheel drive vehicle in both on-road and off-road situations, and ways of controlling the risks involved
- Vehicle controls, instruments and indicators and their use
- Vehicle handling procedures and techniques for a range of conditions, including rock, mud, sand, ice and snow
- Procedures to be followed in the event of a driving emergency
- Efficient driving techniques and safe driving strategies
- The effect on the centre of gravity of changing fluid loads
- Hazards and risks associated with traversing cross slopes
- Effects of hard surface driving (such as highway wind up) on the 4x4 system

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REQUIRED KNOWLEDGE AND SKILLS

- The appropriate use of diff locks
- Pre- and post-operational checks and related action
- Documentation and record keeping requirements
- Environmental impact of 4X4 driving

Required skills:

- Communicate effectively with others when operating a four wheel drive vehicle
- Read and interpret instructions, procedures, information and signs relevant to the operation of a four wheel drive vehicle
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to work activities
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when operating a four wheel drive vehicle
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when operating a four wheel drive vehicle in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected situations that may arise when operating a four wheel drive vehicle
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of four wheel drive vehicle and its equipment, and take appropriate action if required
- Conduct pre-start checks
- Monitor and anticipate traffic hazards and take appropriate action
- Drive vehicles in a range of conditions

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Required skills:

- Demonstrate emergency procedures in the operation of vehicles
- Identify and correct minor operational faults
- Clean and store vehicles and equipment
- Skills and attitude to reduce environmental impact

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
	  • applying the underpinning knowledge and skills
	  • demonstrating operation of a 4x4 vehicle
	  • applying relevant legislation and workplace procedures

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• As a minimum, assessment of knowledge must be conducted through appropriate assessments using written/practical/oral assessments • Practical assessment must occur:

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EVIDENCE GUIDE

- through activities in an appropriately simulated environment, and/or
- in an appropriate range of situations in the workplace

- A simulator/online assessment is not suitable for the final assessment of this unit of competency

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Vehicles include:	• all terrain vehicles • cars and utilities • a range of trailers • light trucks
Operations may be carried out in typical four wheel drive situations, including:	• by day or night • typical weather conditions • on the open road • in rugged terrain off-road conditions that can be smooth, rough, uneven, slippery, boggy, sandy, steep or hilly • on a steep slope • during emergency response • while at a client's workplace or worksite
Vehicle handling procedures may include:	• starting a vehicle • steering and manoeuvring a vehicle • accelerating and braking • positioning and stopping a vehicle • reversing a vehicle • operating vehicle controls, instruments and indicators • using defensive driving techniques • managing engine performance
Considerations when driving may include:	• operational characteristics of the type of four wheel drive vehicle • workplace procedures • traffic conditions • levels of emergency response • adverse weather

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RANGE STATEMENT

	• traffic regulations • warning devices • adverse terrain
Traffic conditions to be taken into account when driving may include:	• speed limits for operation • legal parking • traffic pattern and density • known peak periods and special community functions • effects of weather on roads • road surface/off-road terrain • visibility
Operational hazards may include:	• steep slopes and rugged terrain • wet and iced road/terrain • flooded road/terrain • oil on road • fire in vehicle • leaking fuel • faulty brakes • parked vehicles on the road • faulty steering mechanism on vehicle • pedestrians crossing the road • animals and objects on road • windy or foggy sections of road/terrain
Workplace guidelines/procedures may include:	• pre- and post-operation checks • standards of operation • storage and usage of fuels and lubricants • policies and routines relating to wear and damage • precautions and safeguards • emergency response driving • driving in adverse terrain • driving in special environments • reporting routines
Pre-start checks may include:	• fuel, water, oil • brake and transmission fluid levels • battery water levels and electrolyte checks • tyres • belts • leads • hydraulic lines and connections • air cleaners • air-conditioners

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RANGE STATEMENT

	• brakes • off-road safety equipment in line with manufacturers recommendations
Manufacturers specifications may include:	• engine characteristics • systems warning function • four wheel drive operation • radius of turning circle • safety procedures
Installed devices may include:	• warning lights • tachometer • temperature gauge • electrical charging • ancillary systems indicator • speedometer • oil pressure • brake warning lights • audible warning devices • hose
Minor routine servicing may include:	• the replacement of blown globes in vehicle lights • replacement of broken fan belt • replacement of blown fuse • door mirrors • repairs to rear tail-light lens • changing of tyres • repair of tyre punctures • replacement of broken coolant
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Documentation/records may include:	• state/territory driving licence requirements • state/territory road rules • workplace driving instructions and procedures • vehicle manufacturers instructions, specifications and recommended driving procedures including preoperational checks of vehicle • emergency procedures • vehicle log book or record book (where required)
Applicable regulations, legislation	• relevant state/territory roads and traffic authority driving regulations and licence requirements pertaining to the

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RANGE STATEMENT

and codes may include:

class of four wheel drive vehicle

- relevant state/territory road rules
- relevant state/territory permit regulations and requirements
- relevant state/territory OH&S legislation
- relevant state/territory fatigue management regulations
- relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field C - Vehicle Operation

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TLIC3003A Drive medium rigid vehicle

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to drive a medium rigid vehicle safely including systematic and efficient control of all vehicle functions, monitoring of traffic and road conditions, management of vehicle condition and performance and effective management of hazardous situations. Assessment of this unit may be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory Road Traffic Authority. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Driving must be carried out in compliance with the licence requirements and regulations of the relevant state/territory roads and traffic authority pertaining to medium rigid vehicles.

Driving is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain the safety and operation of a commercial medium rigid vehicle across a variety of driving contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Drive the medium rigid vehicle	1.1 The medium rigid vehicle is started, steered, manoeuvred, positioned and stopped in accordance with traffic regulations and manufacturers instructions
	1.2 Engine power is managed to ensure efficiency and performance and to minimise engine and transmission damage
	1.3 Engine operation is maintained within the manufacturer's specified torque range and temperature through effective transmission use
	1.4 Braking system of medium rigid vehicle is managed and operated to ensure effective control of the vehicle under all conditions
	1.5 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
	1.6 The medium rigid vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
	1.7 The medium rigid vehicle is parked, shut down and secured in accordance with manufacturers specifications, traffic regulations and workplace procedures
	1.8 Appropriate procedures are followed in the event of a driving emergency
2 Monitor traffic and road conditions	2.1 The most efficient route of travel is taken through monitoring and anticipation of traffic flows and conditions, road standards and other factors likely to cause delays or route deviations
	2.2 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and to ensure no injury to people

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ELEMENT	PERFORMANCE CRITERIA
	or damage to property, equipment, loads and facilities
3 Monitor and maintain vehicle performance	3.1 Vehicle performance is maintained through pre-operational inspections and checks of the vehicle
	3.2 Performance and efficiency of vehicle operation is monitored during use
	3.3 Defective or irregular performance or malfunctions are reported to the appropriate authority
	3.4 Vehicle records are maintained/updated and information is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements of the relevant state/territory road traffic authority
- Relevant OH&S and environmental procedures and regulations
- Medium rigid vehicle controls, instruments and indicators and their use
- Medium rigid vehicle handling procedures
- Procedures to be followed in the event of a driving emergency
- Engine power management and safe driving strategies
- Efficient driving techniques
- Workplace driving and operational instructions
- Driving hazards and related defensive driving techniques
- Pre-operational checks carried out on vehicle and related action
- Differences between transmission types
- Principles of operation of air brakes and procedures for their use
- Principles of stress management when driving a vehicle
- Map reading and road navigation techniques including the use of a GPS device where applicable
- Factors which may cause traffic delays and diversions and related action that can be taken by a driver
- Causes and effects of fatigue on drivers
- Factors which increase fatigue-related accidents

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REQUIRED KNOWLEDGE AND SKILLS

- Fatigue management strategies including on-road techniques
- Lifestyles which promote the effective long-term management of fatigue

Required skills:

- Communicate effectively with others when driving a medium rigid vehicle
- Read and interpret instructions, procedures, information and signs relevant to work activities
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to work activities
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when driving a medium rigid vehicle
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when driving a medium rigid vehicle in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events when driving a medium rigid vehicle
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of equipment
- Monitor and anticipate traffic hazards and take appropriate action
- Carry out pre-operational checks on a medium rigid vehicle
- Check and replenish fluids and carry out lubrication processes in the course of work activities

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Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
  - the underpinning knowledge and skills
  - relevant legislation and workplace procedures
  - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
  - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
  - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
  - relevant and appropriate materials and equipment, and
  - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or
  - in an appropriate range of situations in the workplace

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Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Type of vehicle includes:	• all medium rigid vehicles, for example any 2-axle rigid vehicle, including truck and bus greater than 8 tonnes GVM
Driving may be carried out in typical road transport situations, including:	• operations conducted at day or night • typical weather conditions • on the open road • on a private road • while at a depot, base or warehouse • while at a client's workplace or work site
Vehicle handling procedures may include:	• starting a vehicle • steering and manoeuvring a vehicle • accelerating and braking • positioning and stopping a vehicle • reversing a vehicle • operating vehicle controls, instruments and indicators • using air brakes • using defensive driving techniques • managing engine performance
Pre-operational checks may include:	• visual check of vehicle • checking and topping up of fluid levels • checks of tyre pressures • checks of operation of vehicle lights and indicators • checks of brakes
Minor routine repairs may include:	• replacement of blown globes in vehicle lights • replacement of broken fan belt • replacement of blown fuse • replacement of door mirrors • repairs to rear tail-light lens • changing of tyres • repair of tyre punctures • replacement of broken coolant hose
Driving hazards may include (examples only):	• wet and iced roads • oil on road • animals and objects on road • fire in vehicle • leaking fuel

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RANGE STATEMENT

	• faulty brakes • parked vehicles on the road • faulty steering mechanism on vehicle • pedestrians crossing the road • flooded sections of road • windy sections of road • foggy conditions
Factors that can cause traffic delays and diversions may include:	• traffic accidents • flooded sections of road • road damage • bridge/tunnel damage • road works • building construction • emergency situations such as bushfires, building fires, etc. • road closures for special events such as marches, parades, etc. • holiday traffic • road closures for utility works such as electricity, water, sewerage, telecommunications, gas, etc.
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Documentation/records may include:	• state/territory medium rigid vehicle driving licence requirements • state/territory road rules • workplace driving instructions and procedures • vehicle manufacturers instructions, specifications and recommended driving procedures including preoperational checks of vehicle • emergency procedures • vehicle log book or record book (where required)
Applicable procedures and codes may include:	• relevant state/territory roads and traffic authority driving regulations and licence requirements pertaining to medium rigid vehicles • relevant state/territory road rules • relevant state/territory permit regulations and requirements • relevant state/territory OH&S legislation • relevant state/territory fatigue management regulations • relevant state/territory environmental protection legislation

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Unit Sector(s)

Not Applicable

Competency Field

Competency Field C - Vehicle Operation

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TLIC3004A Drive heavy rigid vehicle

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to drive a heavy rigid vehicle safely including systematic and efficient control of all vehicle functions, monitoring of traffic and road conditions, management of vehicle condition and performance, and effective management of hazardous situations. Assessment of this unit may be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory Road Traffic Authority. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Driving must be carried out in compliance with the licence requirements and regulations of the relevant state/territory roads and traffic authority pertaining to heavy rigid vehicles.

Driving is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain the safety and operation of a commercial heavy rigid vehicle across a variety of driving contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Drive the heavy rigid vehicle	1.1 The heavy rigid vehicle is started, steered, manoeuvred, positioned and stopped in accordance with traffic regulations and manufacturers instructions
	1.2 Engine power is managed to ensure efficiency and performance and to minimise engine and gear damage
	1.3 Engine operation is maintained within the manufacturer's specified torque range and temperature through effective gear selection and smooth transition in gear changes
	1.4 Braking system of heavy rigid vehicle is managed and operated to ensure effective control of the vehicle under all conditions
	1.5 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
	1.6 The heavy rigid vehicle is driven in reverse, maintaining visibility and achieving accurate positioning.
	1.7 The heavy rigid vehicle is parked, shut down and secured in accordance with manufacturers specifications, traffic regulations and workplace procedures
	1.8 Where required, overwidth and overweight permit applications are undertaken in accordance with relevant regulatory requirements
	1.9 Appropriate procedures are followed in the event of a driving emergency
2 Monitor traffic and road conditions	2.1 The most efficient route of travel is taken through monitoring and anticipation of traffic flows and conditions, road standards and other factors likely to cause delays or route deviations
	2.2 Traffic and road conditions are constantly monitored and acted

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ELEMENT	PERFORMANCE CRITERIA
	upon to enable safe operation and ensure no injury to people or damage to property, equipment loads and facilities
3 Monitor and maintain vehicle performance	3.1 Vehicle performance is maintained through pre-operational inspections and checks of the vehicle
	3.2 Performance and efficiency of vehicle operation is monitored during use
	3.3 Defective or irregular performance or malfunctions are reported to the appropriate authority
	3.4 Vehicle records are maintained/updated and information is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements of the relevant state/territory road traffic authority
- Relevant OH&S and environmental procedures and regulations
- Heavy rigid vehicle controls, instruments and indicators and their use
- Heavy rigid vehicle handling procedures
- Procedures to be followed in the event of a driving emergency
- Engine power management and safe driving strategies
- Efficient driving techniques
- Pre-operational checks carried out on heavy rigid vehicle and related action
- Differences between transmission types
- Principles of operation of air brakes and procedures for their use
- Workplace driving and operational instructions
- Driving hazards and related defensive driving techniques
- Principles of stress management when driving a vehicle
- Factors which may cause traffic delays and diversions and related action that can be taken by a driver
- Causes and effects of fatigue on drivers
- Factors which increase fatigue-related accidents
- Fatigue management strategies and on-road techniques

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REQUIRED KNOWLEDGE AND SKILLS

- Lifestyles which promote the effective long-term management of fatigue

Required skills:

- Communicate effectively with others when driving a commercial heavy rigid vehicle
- Read and interpret instructions, procedures, information and signs relevant to when the driving of a commercial heavy rigid vehicle
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the driving of a commercial heavy rigid vehicle
- Work collaboratively with others when driving a commercial heavy rigid vehicle
- Operate electronic communication equipment to required protocol
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when driving a commercial heavy rigid vehicle in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when driving a commercial heavy rigid vehicle
- Monitor and anticipate traffic hazards and take appropriate action
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of the vehicle and its equipment and take appropriate action where required
- Carry out pre-operational checks in the course of work activities

Evidence Guide

EVIDENCE GUIDE

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EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

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RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Type of vehicle includes:	• all heavy rigid vehicles, for example any rigid vehicle with 3 or more axles, including trucks or buses, greater than 8 tonnes GVM
Driving may be carried out in typical road transport situations, including:	• operations conducted at day or night • typical weather conditions • on the open road • on a private road • while at a depot, base or warehouse • while at a client's workplace or work site
Vehicle handling procedures may include:	• starting a vehicle • steering and manoeuvring a vehicle • accelerating and braking • positioning and stopping a vehicle • reversing a vehicle • operating vehicle controls, instruments and indicators • using air brakes • using defensive driving techniques • managing engine performance
Pre-operational checks may include:	• visual check of vehicle • checking and topping up of fluid levels • checks of tyre pressures • checks of operation of vehicle lights and indicators • checks of brakes
Minor routine repairs may include:	• replacement of blown globes in vehicle lights • replacement of broken fan belt • replacement of blown fuse • replacement of door mirrors • repairs to rear tail-light lens • changing of tyres • repair of tyre punctures • replacement of broken coolant hose
Driving hazards may include (examples only):	• wet and iced roads • oil on road • animals and objects on road • fire in vehicle • leaking fuel • faulty brakes

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RANGE STATEMENT

	• parked vehicles on the road • faulty steering mechanism on vehicle • pedestrians crossing the road • flooded sections of road • windy sections of road • foggy conditions • work site hazards including power and service lines, buildings, structures, facilities, underground services, uneven or unstable ground and recently filled trenches, stationary and moving machinery and equipment, hazardous or dangerous materials, noise, light, energy sources, and obstructions
Factors that can cause traffic delays and diversions may include:	• traffic accidents • flooded sections of road • road damage • bridge/tunnel damage • road works • building construction • emergency situations such as bushfires, building fires, etc. • road closures for special events such as marches, parades, sporting events, etc. • holiday traffic • road closures for utility works such as electricity, water, sewerage, telecommunications, gas, etc.
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Documentation/records may include:	• state/territory heavy rigid vehicle driving licence and permit requirements • state/territory road rules • workplace driving instructions and procedures • vehicle manufacturers instructions, specifications and recommended driving procedures including preoperational checks of vehicle • emergency procedures • vehicle log book or record book (where required) • relevant standards and certification requirements • quality assurance procedures
Applicable procedures and codes may include:	• relevant state/territory roads and traffic authority driving regulations and licence/permit requirements pertaining to

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RANGE STATEMENT

heavy rigid vehicles
- relevant state/territory road rules
- relevant state/territory permit regulations and requirements
- relevant state/territory OH&S legislation
- relevant state/territory fatigue management regulations
- relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field C - Vehicle Operation

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TLIC3005A Drive heavy combination vehicle

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to drive a heavy combination vehicle safely including systematic and efficient control of all vehicle functions, monitoring of traffic and road conditions, management of vehicle condition and performance, coupling and uncoupling of trailer, and effective management of hazardous situations. Assessment of this unit may be undertaken within a licensing examination conducted, by or under the authority of, the relevant state/territory Road Traffic Authority. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Driving must be carried out in compliance with the licence requirements and regulations of the relevant state/territory roads and traffic authority pertaining to heavy combination vehicles.

Driving is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain the safety and operation of a commercial heavy combination vehicle across a variety of driving contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

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Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Drive the heavy combination vehicle	1.1 The heavy combination vehicle is started, steered, manoeuvred, positioned and stopped in accordance with traffic regulations and manufacturers instructions
	1.2 Engine power is managed to ensure efficiency and performance and to minimise engine and gear damage
	1.3 Engine operation is maintained within the manufacturer's specified torque range and temperature through effective gear selection and smooth transition in gear changes
	1.4 Braking system of heavy combination vehicle is managed and operated to ensure effective control of the vehicle under all conditions
	1.5 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
	1.6 The heavy combination vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
	1.7 The heavy combination vehicle is parked, uncoupled, shut down and secured in accordance with manufacturers specifications, traffic regulations and workplace procedures
	1.8 Where required, overwidth and overweight permit applications are undertaken in accordance with relevant regulatory requirements
	1.9 Appropriate signage, lights and the like are checked for

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ELEMENT	PERFORMANCE CRITERIA
	operational effectiveness and for conformity to prescribed traffic regulations
	1.10 Appropriate procedures are followed in the event of a driving emergency
2 Monitor traffic and road conditions	2.1 The most efficient route of travel is taken through monitoring and anticipation of traffic flows and conditions, road standards and other factors likely to cause delays or route deviations
	2.2 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and ensure no injury to people or damage to property, equipment loads and facilities
3 Monitor and maintain vehicle performance	3.1 Vehicle performance is maintained through pre-operational inspections and checks of the vehicle
	3.2 Prime mover and trailer are aligned and coupled in accordance with manufacturers instructions and workplace procedures
	3.3 Coupled vehicle is checked and tested to ensure it is correctly secured and to confirm that it is fully operational
	3.4 Performance and efficiency of vehicle operation is monitored during use
	3.5 Defective or irregular performance or malfunctions are reported to the appropriate authority
	3.6 Vehicle records are maintained/updated and information is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements of the relevant state/territory road traffic authority
- Relevant OH&S and environmental procedures and regulations
- Heavy combination vehicle controls, instruments and indicators and their use
- Heavy combination vehicle handling procedures
- Workplace driving and operational instructions
- Procedures to be followed in the event of a driving emergency
- Engine power management and safe driving strategies

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REQUIRED KNOWLEDGE AND SKILLS

- Efficient driving techniques
- Pre-operational checks carried out on heavy combination vehicle and related action
- Differences between transmission types
- Principles of operation of air brakes and procedures for their use
- Driving hazards and related defensive driving techniques
- Map reading and navigation of the vehicle and related action
- Factors which may cause traffic delays and diversions and related action that can be taken by a driver
- Principles of stress management when driving a vehicle
- Causes and effects of fatigue on drivers
- Factors which increase fatigue-related accidents
- Fatigue management strategies including on-road techniques
- Lifestyles which promote the effective long-term management of fatigue

Required skills:

- Communicate effectively with others when driving a heavy combination vehicle
- Read and interpret instructions, procedures, information and signs relevant to the driving of a heavy combination vehicle
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the driving of a heavy combination vehicle
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when driving a heavy combination vehicle
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when driving a heavy combination vehicle in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when driving a heavy combination vehicle
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Monitor and anticipate traffic hazards and take appropriate action
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment

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Required skills:

- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Apply map reading and road navigation techniques to the operation of a heavy combination vehicle
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of vehicle, its trailers and its equipment and take appropriate action where required
- Check and replenish fluids and carry out lubrication processes in the course of work activities

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

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EVIDENCE GUIDE

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Type of vehicle includes:	• all heavy combination vehicles that may be driven on public and private roads and work sites
Driving may be carried out in typical road transport situations, including:	• operations conducted at day or night • typical weather conditions • on the open road • on a private road • while at a depot, base or warehouse • while at a client's workplace or work site
Vehicle handling procedures may include:	• starting a vehicle • steering and manoeuvring a vehicle • accelerating and braking • positioning and stopping a vehicle • reversing a vehicle • operating vehicle controls, instruments and indicators • using air brakes • using defensive driving techniques • managing engine performance
Pre-operational checks may include:	• visual check of vehicle • checking and topping up of fluid levels • checks of tyre pressures • checks of operation of vehicle lights and indicators • checks of brakes

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RANGE STATEMENT

Minor routine repairs may include:	• checks of coupling equipment • replacement of blown globes in vehicle lights • replacement of broken fan belt • replacement of blown fuse • replacement of door mirrors • repairs to rear tail-light lens • changing of tyres • repair of tyre punctures • replacement of broken coolant hose
Driving hazards may include (examples only):	• wet and iced roads • oil on road • animals and objects on road • fire in vehicle • leaking fuel • faulty brakes • parked vehicles on the road • faulty steering mechanism on vehicle • pedestrians crossing the road • flooded sections of road • windy sections of road • foggy conditions • work site hazards including power and service lines, buildings, structures, facilities, underground services, uneven or unstable ground and recently filled trenches, stationary and moving machinery and equipment, hazardous or dangerous materials, noise, light, energy sources, and obstructions
Factors that can cause traffic delays and diversions may include (examples only):	• traffic accidents • flooded sections of road • road damage • bridge/tunnel damage • road works • building construction • emergency situations such as bushfires, building fires, etc. • road closures for special events such as marches, parades, sporting events, etc. • holiday traffic • road closures for utility works such as electricity, water, sewerage, telecommunications, gas, etc.
Depending on the type of organisation concerned and the	• company procedures • enterprise procedures

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RANGE STATEMENT

local terminology used, workplace procedures may include:	• organisational procedures • established procedures
Documentation/records may include:	• state/territory heavy combination vehicle driving licence/permit requirements • state/territory road rules • workplace driving instructions and procedures • vehicle manufacturers instructions, specifications and recommended driving procedures including preoperational checks of vehicle • emergency procedures • vehicle log book or record book (where required)
Applicable procedures and codes may include:	• relevant state/territory roads and traffic authority driving regulations and licence requirements pertaining to heavy combination vehicles • relevant state/territory road rules • relevant state/territory permit regulations and requirements • relevant state/territory OH&S legislation • relevant state/territory fatigue management regulations • relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field C - Vehicle Operation

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TLIC4006A Drive multi-combination vehicle

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to drive a multi-combination vehicle safely, including systematic and efficient control of all vehicle functions, coupling and uncoupling of dollies, monitoring of traffic and road conditions, management of vehicle condition and performance, and effective management of hazardous situations. Assessment of this unit may be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory Road Traffic Authority. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Driving must be carried out in compliance with the licence requirements and regulations of the relevant state/territory roads and traffic authority pertaining to multi-combination vehicles.

Driving is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain the safety and operation of a commercial multi-combination vehicle across a variety of driving contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

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Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Drive the multi-combination vehicle	1.1 The multi-combination vehicle is started, steered, manoeuvred, positioned and stopped in accordance with traffic regulations and manufacturers instructions 1.2 Engine power is managed to ensure efficiency and performance and to minimise engine and transmission damage 1.3 Braking system of multi-combination vehicle is managed and operated to ensure effective control of the vehicle under all conditions 1.4 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving 1.5 The multi-combination vehicle is driven in reverse, maintaining visibility and achieving accurate positioning 1.6 The multi-combination vehicle is parked, shut down, uncoupled and secured according to manufacturers specifications, traffic regulations and workplace procedures 1.7 Appropriate signage, lights and the like are checked for operational effectiveness and for conformity to prescribed traffic regulations 1.8 Appropriate procedures are followed in the event of a driving emergency
2 Monitor traffic and road conditions	2.1 The most efficient and permissible route of travel is taken through monitoring and anticipation of traffic flows and

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ELEMENT	PERFORMANCE CRITERIA
	conditions, road standards and other factors likely to cause delays or route deviations
	2.2 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and to ensure no injury to people or damage to property, equipment, loads and facilities
3 Monitor and maintain vehicle performance	3.1 Vehicle performance is maintained through pre-operational inspections and checks of the vehicle
	3.2 Prime mover, dollies and trailer are aligned and coupled in proper sequence in accordance with manufacturers instructions and workplace procedures
	3.3 Coupled vehicle is checked and tested to ensure it is correctly secured and to confirm that it is fully operational
	3.4 Performance and efficiency of vehicle operation is monitored during use
	3.5 Defective or irregular performance or malfunctions are reported to the appropriate authority
	3.6 Vehicle records are maintained/updated and information is processed in accordance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements of the relevant state/territory road traffic authority
- Relevant OH&S and environmental procedures and regulations
- Multi-combination vehicle controls, instruments and indicators and their use
- Multi-combination vehicle handling procedures
- Workplace driving and operational instructions
- Engine power management and safe driving strategies
- Efficient driving techniques
- Pre-operational checks carried out on multi-combination vehicle and related action
- Differences between transmission types
- Principles of operation of air brakes and procedures for their use
- Driving hazards and related defensive driving techniques

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REQUIRED KNOWLEDGE AND SKILLS

- Map reading and road navigation techniques
- Factors which may cause traffic delays and diversions and related action that can be taken by a driver
- Principles of stress management when driving a vehicle
- Causes and effects of fatigue on drivers
- Factors which increase fatigue-related accidents
- Fatigue management strategies including on-road techniques
- Lifestyles which promote the effective long-term management of fatigue

Required skills:

- Communicate effectively with others when driving a multi-combination vehicle
- Read and interpret instructions, procedures, information and signs relevant to the driving of a multi-combination vehicle
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the driving of a multi-combination vehicle
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when driving a multi-combination vehicle
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when driving a multi-combination vehicle in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events when driving a multi-combination vehicle
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the driving of a multi-combination vehicle
- Monitor and anticipate traffic hazards and take appropriate action
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of vehicle, its trailers and its equipment and take appropriate action where required

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Required skills:

- Service vehicle and its equipment in terms of maintenance schedule and standard operating procedures
- Check and replenish fluids and carry out lubrication processes in the course of work activities

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation • As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests • Practical assessment must occur: • through activities in an appropriately simulated

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	environment at the registered training organisation, and/or • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Type of vehicle includes:	• all multi-combination vehicles that may be driven on public and private roads and work sites
Driving may be carried out in typical road transport situations, including:	• operations conducted at day or night • typical weather conditions • on the open road • on a private road • while at a depot, base or warehouse • while at a client's workplace or work site
Vehicle handling procedures may include:	• starting a vehicle • steering and manoeuvring a vehicle • accelerating and braking • positioning and stopping a vehicle • reversing a vehicle • operating vehicle controls, instruments and indicators • using air brakes • using defensive driving techniques • managing engine performance
Pre-operational checks may include:	• visual check of vehicle • checking and topping up of fluid levels • checks of tyre pressures • checks of operation of vehicle lights and indicators • checks of brakes • checks of coupling equipment
Minor routine repairs may include:	• replacement of blown globes in vehicle lights • replacement of broken fan belt • replacement of blown fuse • replacement of door mirrors • repairs to rear tail-light lens

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RANGE STATEMENT

	• changing of tyres • repair of tyre punctures • replacement of broken coolant hose
Driving hazards may include (examples only):	• wet and iced roads • oil on road • animals and objects on road • fire in vehicle • leaking fuel • faulty brakes • parked vehicles on the road • faulty steering mechanism on vehicle • pedestrians crossing the road • flooded sections of road • windy sections of road • foggy conditions
Factors that can cause traffic delays and diversions may include (examples only):	• traffic accidents • flooded sections of road • road damage • bridge/tunnel damage • road works • building construction • emergency situations such as bushfires, building fires, etc. • road closures for special events such as marches, parades, etc. • holiday traffic • road closures for utility works such as electricity, water, sewerage, telecommunications, gas, etc.
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Documentation/records may include:	• state/territory multi-combination vehicle driving licence/permit requirements • state/territory road rules • workplace driving instructions and procedures • vehicle manufacturers instructions, specifications and recommended driving procedures including preoperational checks of vehicle • emergency procedures • vehicle log book or record book (where required)

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RANGE STATEMENT

Applicable procedures and codes may include:	• relevant state/territory roads and traffic authority driving regulations and licence/permit requirements pertaining to multi-combination vehicles • relevant state/territory road rules • relevant state/territory OH&S legislation • relevant state/territory fatigue management regulations • relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field C - Vehicle Operation

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TLIC4067A Operate LP gas tanker

Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to operate an LP gas tanker.

Licensing, legislative, regulatory and certification requirements are applicable to this unit.

Application of the Unit

An LP gas tanker must be operated in compliance with the licence requirements and regulations of the relevant state and territory roads and traffic authority pertaining to heavy vehicles.

An LP gas tanker is operated with limited or minimum supervision, with accountability and responsibility for self and others in achieving the prescribed outcomes.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Prerequisite Unit TLILIC3013A Preparation to transport dangerous goods by road

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the Performance criteria describe the required performance needed

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essential outcomes of a unit of competency.	to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Recognise the characteristics of LP gas and LP gas tankers to ensure the safe transfer and transport of LP gas	1.1 Properties of the LP gas being transported are identified in accordance with emergency response documentation 1.2 Hazards associated with the transport of LP gas are clarified in accordance with emergency response documentation 1.3 Hazardous atmosphere zones are determined in accordance with organisational requirements 1.4 Functions of equipment fitted to an LP gas tanker are identified 1.5 Factors that cause static electricity are identified
Comply with legislative and organisational requirements for safe transfer and transport of LP gas	2.1 UN number, product class, its packaging group and any sub-risks of the LP gas being transported are identified in accordance with emergency response documentation 2.2 Requirements for the LP gas being transported are identified in accordance with the current Australian Dangerous Goods (ADG) Code and legislative requirements
Conduct pre-trip inspection	3.1 Tanker is checked to ensure Dangerous Goods (DG) compliance plate is attached to the tanker in accordance with current ADG Code requirements 3.2 Tanker load transfer equipment is checked to confirm security and state of repair, and that all hoses are tested and tagged in accordance with current ADG Code requirements 3.3 Tanker is checked to ensure safety equipment is accessible, properly maintained, and stowed and secured in accordance with current ADG Code requirements 3.4 Tanker is checked to ensure personal protective equipment (PPE) is available, ready for use and meets current ADG Code requirements 3.5 Tanker is checked to ensure dangerous goods placards are correct for the load and displayed in accordance with current ADG Code requirements 3.6 Fire extinguisher is checked for current date and pressure gauge

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	3.7 Shipping documentation is checked for accuracy and carried with emergency information in accordance with current ADG Code requirements
	3.8 Non-compliant vehicles and equipment are reported in accordance with organisational procedures
Supervise loading	4.1 Tanker is driven into the loading site in accordance with site procedures
	4.2 Tanker is positioned to enable loading to be carried out in accordance with site procedures without injury to people or damage to property
	4.3 Park brake is applied, engine turned off and, where applicable, battery is isolated
	4.4 PPE is used in accordance with site and organisational procedures
	4.5 Transfer equipment is checked for compatibility
	4.6 Loading activities are controlled within level of responsibility
	4.7 Emergency procedures are followed in the event of a spill or leak during loading
	4.8 Strategies to minimise risks associated with static electricity are employed in accordance with organisational requirements
Transport load to a customer site	5.1 Routes are planned to maximise efficiency between delivery sites
	5.2 Any planned or prescribed routes are followed in accordance with regulatory and organisational requirements
	5.3 Tanker is driven and manoeuvred in accordance with legal requirements, taking into consideration eco-driving techniques and exhibiting courtesy and professionalism toward other road users
	5.4 Action is taken to deal with traffic delays and diversions
	5.5 Legislative and organisational procedures are adhered to in driving, parking and leaving the tanker standing, or in the event of the tanker breaking down or stopping on a road
Prepare site to accept delivery	6.1 Pre-delivery assessment is made before entering the delivery site
	6.2 Site features that present a hazard and/or prevent delivery are rectified or reported in accordance with organisational requirements
	6.3 Any site instructions and/or restrictions are complied with
	6.4 Tanker is manoeuvred and positioned to ensure product can be

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	delivered safely and efficiently
	6.5 Park brake is applied, engine turned off and, where applicable, battery is isolated
	6.6 PPE is used in accordance with site and organisational procedures and steps are taken to apply personal safety measures and manage potential hazards
	6.7 Delivery site is marked with signs and/or cones
Manage the delivery	7.1 Receiving vessel and components are checked for damage
	7.2 Contents are checked to ensure sufficient ullage exists for delivery
	7.3 Product type and quantity are confirmed against delivery documents
	7.4 Pressure gauges, valves, hoses and connections are checked for serviceability and leaks
	7.5 Product is delivered in accordance with organisational and site procedures and special delivery instructions are observed
	7.6 Emergency procedures are followed in the event of a leak during delivery
	7.7 Strategies to minimise risks associated with static electricity are employed in accordance with organisational requirements
Complete post-delivery operations	8.1 Product transfer equipment is disconnected in accordance with product type and organisational procedures
	8.2 Site is secured and restored to a clean and tidy condition in accordance with site procedures
	8.3 Delivery documentation is completed in accordance with organisational procedures
	8.4 Shipping documentation is amended to reflect changes in vehicle load
	8.5 Pre-departure inspection of tanker is conducted in accordance with organisational procedures
	8.6 Tanker is driven safely from site in accordance with site procedures

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Follow procedures in emergencies	9.1 Incident is reported to police or fire services as soon as possible 9.2 Incident is reported to nominated person as soon as practicable in accordance with emergency plan 9.3 Reasonable assistance with load content is provided to authorised officer and emergency management supervisor (EMS) 9.4 Warnings are provided to other vehicles and persons in the vicinity who may be at risk 9.5 Escape of gas is prevented or minimised 9.6 Incident is reported in accordance within legislative requirements or as nominated in emergency plan

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills required at the completion of this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements of the relevant state and territory roads and traffic authority
- Relevant OH&S and environmental procedures and regulations relating to LP gas tanker operations
- Relevant dangerous goods information pertaining to the operation of an LP gas tanker
- Procedures to be followed in the event of a driving emergency and in response to an emergency using a company transport emergency response plan (TERP)
- Workplace driving and operational instructions
- Efficient driving techniques and eco-driving considerations
- Safe delivery of LP gas to a customer site
- Factors that may cause traffic delays and diversions and related action that can be taken
- Techniques and procedures for loading and unloading an LP gas tanker safely
- Factors involved in trip preparation
- Workplace documentation

Required skills:

- Communicate effectively with others operating an LP gas tanker
- Read and interpret instructions, procedures, information and signs relevant to operating an

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LP gas tanker
- Interpret and follow operational instructions and prioritise work
- Complete documentation relating to operating an LP gas tanker
- Work collaboratively with others when operating an LP gas tanker
- Adapt appropriately to cultural differences in the workplace and customer sites, including modes of behaviour and interaction with others
- Implement contingency plans for unexpected events when operating an LP gas tanker
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when operating an LP gas tanker
- Monitor and anticipate traffic hazards and take appropriate action
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required PPE, conforming to industry and OH&S standards
- Monitor performance of vehicle, its trailers and its equipment, and take appropriate action where required
- Service tanker ancillary equipment in terms of maintenance schedule and standard operating procedures
- Identify volume of goods
- Make accurate estimates in a range of situations

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
  - applying techniques for loading and unloading an LP gas tanker
  - applying correct placarding for the product being loaded

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- identifying the required PPE for the product being transported
- identifying eco-driving techniques when operating an LP gas tanker
- understanding relevant legislation and workplace procedures for transporting LP gas
- understanding customer requirements when delivering LP gas to a customer's site

Context of and specific resources for assessment

- Access is required to:
  - relevant and appropriate materials and equipment to meet the performance criteria
  - applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Practical assessment must occur:
  - in three different aspects of the job function in the workplace or as it would apply in the workplace.
- A simulator is not suitable for final assessment of this unit of competency

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Properties and hazards of LP gas include:

- effect of heat and pressure on the LP gas when stored in a container
- causes of a boiling liquid expanding vapour explosion (BLEVE)
- characteristics of the LP gas in a leak, fire situation, or in the presence of static electricity
- density
- odour
- expansion rates
- upper and lower explosive limits

Equipment fitted to an LP gas tanker includes:

- emergency information holder
- eyewash facility
- fire extinguishers
- emergency shutdown controls
- fire alarm

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	• deluge system • evacuation procedures
LP gas tanker vehicle includes:	• B-Double • B-Triple • AAB-Quad
Loading and unloading site may include:	• refinery • customer site • depot
Personal safety measures include:	• manual-lifting techniques • three points of contact when using ladders • correct use of walkways • safety glasses • safety footwear • high visibility clothing • hearing protection
Product transfer equipment includes:	• external piping and fittings • bonding devices • pressure vessels • master switch • valves • warning devices • brake interlock • pressure and ullage gauges
Eco driving includes:	• observing speed limits • ensuring transmission control • using auxiliary braking systems
Factors that can cause traffic delays and diversions may include:	• traffic accidents • flooded sections of road • road damage • bridge or tunnel damage • road works • building construction • emergency situations, such as bushfires • livestock movement • holiday traffic • road closures for utility works, such as electricity, water, sewerage, telecommunications and LP gas
Depending on the type of organisation concerned and the local terminology used, workplace	• company procedures • enterprise procedures • organisational procedures

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procedures may include:	• established procedures
Documentation and records may include:	• state and territory heavy vehicle driving licence or permit requirements • state and territory road rules • workplace driving instructions and procedures • vehicle manufacturer instructions, specifications and recommended driving procedures, including pre-operational checks of vehicle • emergency procedures • TERP • vehicle work diaries or record books

Applicable procedures and codes may include:	• relevant state and territory:
	  • roads and traffic authority driving regulations and licence or permit requirements pertaining to operating heavy vehicles on unsealed roads
	  • road rules
	  • OH&S legislation
	  • fatigue management regulations
	  • environmental protection legislation

Unit Sector(s)

Not applicable.

Competency Field

C – Vehicle Operation

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TLID2003A Handle dangerous goods/hazardous substances

Modification History

Release 2. This is the second release of this unit in the TLI10 Transport and Logistics Training Package Version 4.0.

Minor change to Range Statement 'Requirements for work'.

This release is equivalent to the previous release.

Unit Descriptor

This unit involves the skills and knowledge required to handle dangerous goods and hazardous substances, including identifying requirements for working with dangerous goods and/or hazardous substances; confirming site incident procedures; and selecting handling techniques. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

This unit covers anyone working in the transport, warehousing, distribution and storage industries who may handle dangerous goods and/or hazardous substances.

Work must be carried out in compliance with the relevant OH&S regulations concerning the safe handling of dangerous goods and hazardous substances.

Work is performed under general supervision. It involves the application of the codes of practice and established procedures for the safe handling of dangerous goods and hazardous substances.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Nil.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1 Identify requirements for working with dangerous goods and/or hazardous substances	1.1	Dangerous goods and/or hazardous substances are identified from information including class labels, manifests and other documentation
	1.2	Storage requirements for hazardous substances and/or dangerous goods are identified and applied
	1.3	Legislative requirements for hazardous substances and/or dangerous goods are known and used to plan work activities
	1.4	Handling procedures for different classes and characteristics of goods are observed
	1.5	Confirmation is sought from relevant personnel where dangerous goods or hazardous materials do not appear to be appropriately marked
2 Confirm site incident procedures	2.1	Incident reporting processes are identified
	2.2	Emergency equipment is located and checked according to workplace procedures and statutory regulations
	2.3	Emergency procedures are identified and confirmed
3 Select handling techniques	3.1	Load handling and shifting procedures are selected in accordance with identified requirements for particular goods
	3.2	Handling equipment is checked for conformity with workplace requirements and manufacturers guidelines
	3.3	Where relevant, suitable signage is checked for compliance with workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

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REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- All relevant regulations and codes concerning the handling of dangerous goods and hazardous substances
- Application of relevant aspects of current Australian Dangerous Goods Code and relevant Australian Standards
- Permit and licence requirements
- Workplace procedures for handling and storing dangerous goods/hazardous substances
- Problems that may arise during the handling of dangerous goods and hazardous substances and actions that should be taken to prevent or solve them
- Risks when handling dangerous goods and hazardous substances and related precautions to control the risk
- Equipment applications, capacities, configurations, safety hazards and control mechanisms
- Housekeeping standards procedures required in the workplace

Required skills:

- Communicate effectively with others when handling dangerous goods and hazardous substances
- Read and interpret instructions, procedures, regulations, information and signs relevant to the handling of dangerous goods and hazardous substances
- Identify containers and goods coding, markings and, where applicable, emergency information panels for the mode of transport storage selected
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to work activities
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when handling dangerous goods and hazardous substances
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when handling dangerous goods and hazardous substances in accordance with regulatory requirements and workplace procedures
- Plan own work including predicting consequences and identifying improvements
- Implement contingency plans for unanticipated situations that may arise when handling dangerous goods and hazardous substances
- Recognise hazards and apply precautions and required action to minimise, control or eliminate hazards that may exist during the handling of dangerous goods and hazardous substances
- Monitor work activities in terms of planned schedule

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Required skills:

- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of : • identifying dangerous goods/hazardous substances (from labels, IMDG markings, HAZCHEM signs and other relevant identification criteria) • identifying and selecting the safely requirements for handling dangerous goods/hazardous substances • maintaining workplace records and documentation • determining (any) required permits • identifying job and site hazards and planning work to minimise risks • selecting appropriate equipment and work systems including personal protection equipment • estimating weight and dimensions of load and any special requirements • identifying and assessing handling and storage precautions and requirements for dangerous goods/hazardous substances
Context of and specific resources for assessment	Performance is demonstrated consistently over a period of time and in a suitable range of contexts. Resources for assessment include: • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or

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- access to an appropriate range of relevant operational situations in the workplace.

In both real and simulated environments, access is required to:

- relevant and appropriate materials and equipment, and
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

Assessment of this unit must be undertaken by a registered training organisation.

As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests.

Practical assessment must occur:

- through activities in an appropriately simulated environment at the registered training organisation, and/or
- in an appropriate range of situations in the workplace.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

The dangerous goods may be handled in a range of work environments by day or night and may be:	• for short-term storage • for long-term storage • in transit
Customers may be:	• internal or external
Workplace environment may include:	• movement of equipment • movement of goods • materials and vehicular traffic
Requirements for work may include:	• site restrictions and procedures • use of safety and personal protective equipment • communications equipment • specialised lifting and/or handling equipment • incident breakdown procedures • authorities and permits • hours of operations • noise restrictions • additional gear and equipment • segregation procedures

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RANGE STATEMENT

	• emergency procedures, including response to spillage/leaks, evacuation and firefighting
Hazards may include:	• hazardous or dangerous materials • contamination of, or from, materials being handled • noise, light, energy sources • stationary and moving machinery, parts or components • service lines • spills, leakages, ruptures • fire or ignition • dust/vapours
Hazard management is:	• consistent with the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
Consultative processes may involve:	• other employees and supervisors • suppliers, potential customers and existing clients • representatives of regulatory authorities with jurisdiction over OH&S, dangerous goods and hazardous substances • management and union representatives • industrial relations and OH&S specialists • other maintenance, professional or technical staff
Personnel in the work area may include:	• workplace personnel • site visitors • contractors • official representatives
Identification of goods may be from:	• material safety data sheets • packaging labels • manifests • stock lists • HAZCHEM interpretative advice
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Personal protective equipment may include:	• gloves • safety headwear and footwear • safety glasses • mask and respirator • protective clothing • breathing apparatus

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RANGE STATEMENT

Information/documents may include:	• goods identification numbers and codes • manifests, stock lists, packaging labels, bar codes, stock lists • goods and container identification • workplace procedures and policies concerning the handling of dangerous goods and hazardous substances • supplier and/or client instructions • material safety data sheets (MSDS) • current Australian Dangerous Goods Code • HAZCHEM interpretative advice • relevant legislation, codes, regulations and related documentation concerning the handling of dangerous goods and hazardous substances • award, enterprise bargaining agreement, other industrial arrangements • standards and certification requirements • quality assurance procedures • emergency procedures pertaining to dangerous goods and hazardous substances

Applicable regulations and legislation may include:	• relevant Australian and state/territory regulations relating to the handling of dangerous goods and hazardous substances
	• current Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
	  • Australian and International Dangerous Goods Codes
	  • Australian Marine Orders and the International Maritime Dangerous Goods Code
	  • IATA Dangerous Goods by Air regulations
	  • Australian and International Explosives Codes
	• all relevant Australian Standards
	• relevant state/territory OH&S legislation
	• workplace relations regulations
	• equal employment opportunity and affirmative action legislation
	• equal opportunity legislation
	• relevant state/territory environmental protection legislation

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Unit Sector(s)

Not Applicable.

Competency Field

D - Load Handling

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TLID2010A Operate a forklift

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to operate a forklift, including checking forklift condition, driving the forklift to fulfil operational requirements, monitoring site conditions, and monitoring and maintaining forklift performance. Assessment of this unit will usually be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory OH&S authority. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Operation of a forklift must be carried out in compliance with the licence requirements and regulations of the relevant state/territory authority.

Operation of a forklift is performed under some supervision, generally within a team environment. It involves the application of routine equipment operation principles and procedures to maintain the safety and operation of a forklift in a variety of operational contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Check forklift condition	1.1 Condition of forklift is checked for compliance with OH&S and workplace requirements for warning devices, manufacturers specifications and the nature of the load shifting task
	1.2 Attachments are checked to ensure appropriate adjustment and operation
	1.3 Mirrors and seats are adjusted for safe operation by the driver
	1.4 Log books are checked and appropriate workplace documentation is completed in accordance with workplace requirements
2 Drive the forklift	2.1 Forklift is started, steered, manoeuvred, positioned and stopped in accordance with regulations and manufacturers instructions
	2.2 Engine power is managed to ensure efficiency and performance and to minimise engine and gear damage
	2.3 Operational hazards are identified and/or anticipated and avoided or controlled through defensive driving and appropriate hazard control techniques
	2.4 Forklift is driven in reverse, maintaining visibility and achieving accurate positioning
	2.5 The forklift is parked, shut down and secured in accordance with manufacturers specifications, regulations and workplace procedures
3 Operate a forklift to handle loads	3.1 The lifting task to be undertaken is appropriately planned and the correct lifting truck and attachments are selected
	3.2 The load is lifted, carried, lowered and set down in accordance with OH&S legislation, manufacturers specifications and company procedures

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ELEMENT	PERFORMANCE CRITERIA
4 Monitor site conditions	4.1 When selecting the most efficient route, hazards and traffic flow are identified and appropriate adjustments are made 4.2 Site conditions are assessed to enable safe operations and to ensure no injury to people or damage to property, equipment, loads or facilities occurs
5 Monitor and maintain forklift performance	5.1 Performance and efficiency of vehicle operation is monitored during use 5.2 Defective/irregular performance and malfunctions reported to relevant personnel 5.3 Forklift records are maintained/updated in accordance with workplace procedures and legislative requirements

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant duty of care requirements pertaining to the operation of a forklift
- Relevant OH&S and environmental procedures and regulations
- Workplace operating procedures
- Forklift controls, instruments and indicators and their use
- Forklift handling procedures
- Procedures to be followed in the event of an operational emergency
- Engine power management and safe operating strategies
- Efficient driving techniques
- Operating hazards and related defensive driving and hazard control techniques
- Pre-operational checks carried out on forklift and related action
- Principles of stress management when driving a forklift
- Site layout and obstacles

Required skills:

- Communicate effectively with others when operating a forklift
- Read and interpret instructions, procedures, information and signs relevant to the operation of a forklift

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Required skills:

- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the operation of a forklift
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when operating a forklift
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events when operating a forklift
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the operation of a forklift
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Identify points of balance and safe lifting positions on a range of loads when operating a forklift (including accessories)
- Monitor performance of forklift and its equipment and take appropriate action where required
- Ensure that a forklift and its equipment are maintained in terms of service schedule and standard operating procedures
- Check and replenish fluids and carry out lubrication processes in the course of work activities

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the

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EVIDENCE GUIDE

demonstrate competency in this unit	requirements of the elements and performance criteria of this unit and include demonstration of applying: • the underpinning knowledge and skills • relevant legislation and workplace procedures • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Types of forklift may include:	• counterbalance trucks • reach trucks • pallet trucks

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RANGE STATEMENT

Operations may be carried out in typical forklift operational situations, including:	• operations conducted at day or night • typical weather conditions • on the open road • on a private road or worksite • while at a workplace
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Loads to be shifted may require:	• special precautions
Loads to be shifted may be:	• irregularly shaped • packaged or unpackaged • labelled or unlabelled • palleted or unpalleted
Hazards in the work area may include exposure to:	• chemicals • dangerous or hazardous substances • movements of equipment, goods and materials
Personnel in the work area may include:	• workplace personnel • site visitors • contractors • official representatives
Forklift handling procedures may include:	• starting a forklift • steering and manoeuvring a forklift • accelerating and braking • positioning and stopping a forklift • reversing a forklift • operating forklift controls, instruments and indicators • using defensive driving techniques • managing engine performance
Pre-operational checks may include:	• visual check of forklift • checking and topping up of fluid levels • checks of tyres • checks of operation of forklift lights and indicators • checks of brakes
Hazards may include (examples only):	• wet and iced operating surfaces • oil on operating surface

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RANGE STATEMENT

	• faulty brakes • workplace obstacles and other operational equipment and vehicles • damaged loads and pallets • other personnel in work area
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Personal protection equipment may include:	• gloves • safety headwear and footwear • safety glasses • two-way radios • high visibility clothing
Information/documents may include:	• goods identification numbers and codes, including IMDG markings and HAZCHEM signs • manifests, bar codes, picking slips, merchandise transfers, stock requisitions, goods and container identification • Australian Standard 2359 - Industrial Truck Code • manufacturers specifications for forklift and associated equipment • operations and service record book or log • workplace procedures and policies for the operation of forklifts • supplier and/or client instructions • ADG Code and material safety data sheets • regulatory requirements concerning the use of forklifts • award, enterprise bargaining agreement, other industrial arrangements • standards and certification requirements • quality assurance procedures • emergency procedures
Applicable procedures and codes may include:	• relevant state/territory regulations pertaining to the operation of forklifts • relevant codes and standards, including Australian Standard 2359 - Industrial Truck Code • relevant state/territory OH&S legislation • relevant state/territory fatigue management regulations • relevant state/territory environmental protection legislation

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Unit Sector(s)

Not Applicable

Competency Field

Competency Field D - Load Handling

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TLID2016A Load and unload explosives and dangerous goods

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to load and unload explosives and dangerous goods, including identifying explosives/dangerous goods; loading and unloading explosives/dangerous goods using appropriate equipment; securing and protecting the vehicle load; and checking the vehicle to ensure the load is secure and the vehicle is marked in accordance with regulatory requirements. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant Australian and state/territory regulations including the current Australian Dangerous Goods (ADG) Code, the current Australian Explosives Code, and mass and loading regulations.

Work is performed under limited or minimum supervision. It involves the application of the basic principles, routine procedures and specific regulatory requirements to the loading and unloading of explosives and dangerous goods in a range of operational situations.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to load and unload vehicle	1.1 Explosives and/or dangerous goods are identified and their characteristics taken into account when determining appropriate handling, loading and storage procedures including confirmation that the relevant emergency procedures are being carried out
	1.2 Compatibility of explosives and/or dangerous goods is taken into account when assembling and segregating cargo for loading
	1.3 Vehicle and/or loading equipment is checked to ensure it is suitable to handle/carry load
2 Load/unload vehicle	2.1 Vehicle is loaded/unloaded in accordance with workplace procedures and the current ADG/Australian Explosives Code as applicable
	2.2 The load is segregated according to class and subsidiary risk, and the distribution of the load is checked in accordance with workplace procedures, relevant mass and loading regulations and the current ADG/Australian Explosives Code as applicable
	2.3 Personal protective equipment is used during the loading/unloading operations as required for the type of dangerous goods/explosive concerned
	2.4 Emergency procedures are followed in the event of an incident or accident when loading or unloading explosives and/or dangerous goods
3 Secure and protect vehicle load	3.1 The vehicle load is secured using the correct load restraint and protection equipment for different loads, vehicles and carriage conditions concerned
	3.2 The load is protected in accordance with legal and workplace

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ELEMENT	PERFORMANCE CRITERIA
	safety requirements
	3.3 The distribution of the load is checked to ensure that it is even, legal and within the safe working capacity of the vehicle
	3.4 Vehicle is clearly marked/placarded to indicate the carriage of explosives and/or dangerous goods, in accordance with government regulations and company procedures
4 Check the vehicle	4.1 The loaded vehicle is inspected and checked to ensure that it is suitable to carry explosives and/or dangerous goods and the load weight and dimensions are within the vehicle's safe carrying capacity and equipment capability
	4.2 The loaded vehicle is checked to ensure that it can be safely parked and secured
	4.3 Dangerous goods declaration and all required transportation documentation for the cargo is completed in accordance with workplace requirements

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant Australian and state/territory regulations and codes pertaining to the identification, handling and marking of explosives and dangerous goods
- Relevant state/territory mass and loading regulations
- OH&S procedures and guidelines concerning the lifting and movement of loads
- Risks and hazards when loading, unloading and handling explosives and dangerous goods, and related precautions to control the risk
- Workplace procedures and policies for the loading and unloading of explosives and dangerous goods
- Characteristics of various classes of explosives and dangerous goods relevant to handling and transport
- Compatibility of various types of explosives and dangerous goods
- Housekeeping standards procedures required in the workplace
- Manual handling techniques and manually-operated load shifting equipment required for the loading, unloading and handling of explosives and dangerous goods
- Methods of securing a load on a vehicle
- Methods of placarding or marking a vehicle carrying explosives/dangerous goods

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Required skills:

- Communicate effectively with others when loading, unloading and handling explosives and dangerous goods
- Read and interpret instructions, procedures, information and signs relevant to the loading, unloading and handling of explosives and dangerous goods
- Identify and interpret containers and goods coding, markings and, where applicable, emergency information panels for the mode of transport/storage selected
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to work activities
- Operate electronic communication equipment to required protocol
- Estimate the size, shape and special requirements of loads
- Work collaboratively with others when loading, unloading and handling explosives and dangerous goods
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events when loading, unloading and handling explosives and dangerous goods
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the loading, unloading and handling of explosives and dangerous goods
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Use manual handling techniques and operate manually-operated load shifting equipment when loading, unloading and handling explosives and dangerous goods
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the

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EVIDENCE GUIDE

performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
  - identifying load characteristics, loading equipment and related practices
  - identifying load label in accordance with identified classification and subsidiary risk information
  - identifying markings/placards for vehicle in accordance with relevant regulatory requirements
  - segregating, distributing and securing load for safe transport in accordance with regulations and current ADG/AEG Code requirements
  - safely loading and unloading explosives and dangerous goods in accordance with workplace procedures and current ADG/AEG Code requirements

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
  - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
  - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
  - relevant and appropriate materials and equipment, and
  - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or

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- in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• in a range of work environments and weather conditions • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• limited and restricted spaces • exposed conditions • controlled or open environments • a workplace, warehouse or depot • in a vehicle on the road • at a client's workplace
Goods/cargo to be loaded and unloaded may require:	• special precautions for handling and stacking
Classes of dangerous goods and explosives are:	• as defined in the respective Australian codes
Standard placarding, marking and signage for identified explosives and dangerous goods are:	• as required in the respective Australian codes, including HAZCHEM Codes
Personnel in the work area may include:	• workplace personnel • site visitors • contractors • official representatives
Communication in the work area may include:	• phone • electronic data interchange • fax • email • internet • radio

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RANGE STATEMENT

Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• oral, aural or signed communications • company procedures • enterprise procedures • organisational procedures • established procedures
Loading operations may be carried out:	• manually • with the aid of lifting equipment and/or appliances
Load restraint procedures and equipment are:	• as specified in mass and loading regulations and guidelines and current ADG Code/Australian Explosives Code as applicable
Personal protective equipment may include:	• gloves • safety headwear and footwear • safety glasses • two-way radios • high visibility clothing
Information/documents may include:	• goods identification numbers and codes, including current ADG Code and IMDG markings and HAZCHEM signs • relevant codes of practice, including the Australian Dangerous Goods Code, the Australian Explosives Code, the Industry Safety Code, and National Standards for Manual Handling • manifests, bar codes, goods and container identification/serial number • material safety data sheets • manufacturers specifications for equipment/tools • workplace procedures and policies for the loading and unloading of vehicles • supplier and/or client instructions • National Load Restraint Guide • Australian Truck Drivers Manual • award, enterprise bargaining agreement, other industrial arrangements • standards and certification requirements • quality assurance procedures • emergency procedures
Applicable regulations and legislation may include:	• Australian and state/territory mass and loading regulations • Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including: • Australian and International Dangerous Goods Codes

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RANGE STATEMENT

- Australian Marine Orders and the International Maritime Dangerous Goods Code
- IATA Dangerous Goods by Air regulations
- Australian and International Explosives Codes
- Code of Practice for the Safe Transport of Radioactive Substances
- state/territory legislation covering the safe handling of infectious substances

- relevant state/territory environmental protection legislation
- workplace relations regulations
- equal opportunity legislation
- equal employment opportunity and affirmative action legislation
- relevant state/territory OH&S legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field D - Load Handling

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TLID3015A Identify and label explosives and dangerous goods

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to identify and label explosives and dangerous goods, including assessing explosives/dangerous goods; handling explosives/dangerous goods in accordance with regulatory requirements; labelling explosives/dangerous goods in accordance with regulatory requirements; and complying with all required documentation. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the regulatory requirements of the relevant Australian state/territory authorities concerned with the carriage of explosives and dangerous goods including the current Australian Dangerous Goods and Australian Explosives Codes.

Work is performed under limited or minimum supervision. It involves the application of standard procedures and regulatory requirements for the identification and labelling of explosives and dangerous goods.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Assess explosives/dangerous goods	1.1 Load is checked for explosives/dangerous goods in accordance with the relevant codes and government regulations
	1.2 Types of explosives/dangerous goods are identified from labels, DG declarations and placarding in accordance with workplace procedures, and all required action is taken to ensure compliance with relevant government regulations and ADG/Australian Explosives Codes as applicable
	1.3 Hazards posed by load are identified from labels and material safety data sheets (MSDS)
2 Handle explosives/dangerous goods	2.1 Identified explosives/dangerous goods are handled and loaded/unloaded in accordance with regulatory requirements, codes, National Load Restraint Guide, and employer policy
	2.2 Appropriate personal protective equipment is used when handling explosives/dangerous goods in accordance with class, subsidiary risk and MSDS information
	2.3 Handling of different types of load takes into account the identified hazards posed by the explosives/dangerous goods concerned
	2.4 When loading/storing explosives/dangerous goods, segregation procedures are followed according to the class and subsidiary risk information
3 Label explosives/dangerous goods	3.1 All packages/containers are labelled with the class and subsidiary risk in accordance with current ADG/Australian Explosives Codes as applicable
	3.2 A dangerous goods declaration is included with manifest and other shipping documents

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ELEMENT	PERFORMANCE CRITERIA
	3.3 Vehicles carrying explosives and/or dangerous goods are placarded in accordance with current ADG/Australian Explosives Codes as applicable
4 Complete documentation	4.1 All required transport documents are completed in accordance with current ADG/Australian Explosives Codes as applicable

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant Australian and state/territory regulations and codes pertaining to the identification and labelling of explosives and dangerous goods including the current ADG and Australian Explosives Codes
- OH&S procedures and guidelines concerning the lifting and movement of loads
- Risks and hazards when loading, unloading and handling explosives and dangerous goods, and related precautions to control the risk
- Workplace procedures and policies for the identification and labelling of explosives and dangerous goods
- Characteristics of explosives and dangerous goods relevant to handling and transport
- Compatibility of various types of explosives and dangerous goods
- Site layout and obstacles
- Housekeeping standards procedures required in the workplace

Required skills:

- Communicate effectively with others when loading, unloading and handling explosives and dangerous goods
- Read and interpret instructions, procedures, information and signs relevant to the loading, unloading and handling of explosives and dangerous goods
- Interpret material safety data sheets, containers and goods coding, markings and other information describing explosives and dangerous goods including, where applicable, emergency information panels for the mode of transport/storage selected
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the loading, unloading and handling of explosives and dangerous goods

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Required skills:

- Correctly mark/label explosives and dangerous goods
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when loading, unloading and handling explosives and dangerous goods
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may occur when loading, unloading and handling explosives and dangerous goods in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when loading, unloading and handling explosives and dangerous goods
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the loading, unloading and handling of explosives and dangerous goods
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of: • identifying explosives and dangerous goods from labels in accordance with regulatory requirements and practices

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EVIDENCE GUIDE

	• handling explosives and dangerous goods according to regulatory requirements, codes, National Load Restraint Guide and employer policy as appropriate • locating, interpreting and applying relevant codes and regulations • indentifying the hazards from labels of explosives and dangerous goods • identifying the personal protective equipment required when handling explosives and dangerous goods • maintaining workplace records for the explosives and dangerous goods

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

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Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• in a range of work environments and weather conditions • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments • a workplace, warehouse or depot • in a vehicle on the road • at a client's workplace
Goods/cargo to be identified and classified may:	• require special precautions for handling and storage
Classes of dangerous goods and explosives are:	• as defined in the respective Australian codes
Standard marking and signage for identified explosives and dangerous goods is:	• as required in the respective Australian codes
Personnel in the work area may include:	• workplace personnel • site visitors • contractors • official representatives
Communication in the work area may include:	• phone • electronic data interchange • fax • email • internet • radio • oral, aural or signed communications
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Personal protective equipment	• gloves

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RANGE STATEMENT

may include:	• safety headwear and footwear • safety glasses • two-way radios • high visibility clothing
Information/documents may include:	• goods identification numbers, codes, markings and signs • codes of practice including the Australian/International Dangerous Goods Codes and the Australian/International Explosives Codes • manifests, bar codes, goods and container identification • manufacturers specifications for equipment/tools • workplace procedures and policies for the loading and unloading of vehicles • supplier and/or client instructions • material safety data sheets • award, enterprise bargaining agreement, other industrial arrangements • standards and certification requirements • quality assurance procedures • emergency procedures

Applicable regulations and legislation may include:	• current Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
	  • Australian and International Dangerous Goods Codes
	  • Australian Marine Orders and the International Maritime Dangerous Goods Code
	  • IATA Dangerous Goods by Air regulations
	  • Australian and International Explosives Codes
	• relevant state/territory environmental protection legislation
	• equal opportunity legislation
	• workplace relations regulations
	• equal employment and affirmative action legislation
	• relevant state/territory OH&S legislation

Unit Sector(s)

Not Applicable

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Competency Field

Competency Field D - Load Handling

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TLID3023A Use specialised liquid bulk gas transfer equipment

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to use specialised bulk gas transfer equipment including planning the work; transferring the gas according to regulatory and operational requirements; monitoring and operating controls; and completing all operations, as required. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the ADG Code and relevant state/territory regulations concerning the use of specialised equipment for the transfer of liquid bulk gas.

Work is performed under general supervision. It involves the application of basic principles, routine procedures and regulatory requirements to the use of specialised bulk transfer equipment to load and unload liquid bulk gas.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan work	1.1 Gas transfer method is identified for loading and unloading as liquefied or gaseous state
	1.2 Precautions are undertaken to eliminate all ignition sources
	1.3 Specialised handling requirements for the particular gas are identified and relevant procedures are taken into account when planning the work
	1.4 Traffic flow, vehicle positioning and work area conditions are assessed to ensure safe operation and no injury to people, or damage to equipment, loads or facilities
	1.5 Characteristics of the gas, transfer and holding method are taken into account when evaluating procedural requirements, special precautions for method, equipment and, where applicable, appropriate attachments to transfer the load
	1.6 Any potential occurrences in the work area that may affect the safety and efficiency of operations are reported to the appropriate personnel
	1.7 Gas transfer is planned, taking into account the requirements of the load, transfer method, storage facility and transport mode, load weight, volume and viscosity and the capacity of the equipment
	1.8 Load is checked prior to and at the completion of transfer to ensure ullage and/or maximum permitted capacity complies with ADG Code
	1.9 Adjustments are made to process to accommodate special requirements such as temperature control, combustion, etc.
	1.10 Required personal protective equipment, signage, barriers and special precautions are identified in the plan and utilised
	1.11 Procedures to deal with leakages and ruptures are identified
2 Transfer material	2.1 Equipment is prepared and any appropriate attachment fitted
	2.2 Equipment controls are checked for correct operational status

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ELEMENT	PERFORMANCE CRITERIA
	before commencing transfer
	2.3 Instruments and gauges are monitored during operations to ensure that operation is within manufacturers specifications and enterprise schedule and safety requirements
	2.4 Speed of operation is managed for safety and efficiency of materials movement and equipment operations
	2.5 Any faults or damage to equipment are immediately reported to the appropriate personnel
3 Monitor and operate controls	3.1 Equipment controls are monitored and operated in accordance with manufacturers operating instructions
	3.2 Control systems are monitored in accordance with statutory authority regulations, manufacturers guidelines and site operating procedures
	3.3 Gas is transferred ensuring no injury to personnel or damage to equipment or goods
	3.4 Faults are identified and reported in accordance with enterprise guidelines
4 Complete operations	4.1 Equipment is shut down within manufacturers guidelines without injury to personnel or damage to equipment, loads or facilities in accordance with enterprise procedures
	4.2 Clean up methods for transfer equipment are completed following workplace procedures
	4.3 Equipment is secured in accordance with securing procedures for the appropriate equipment
	4.4 Workplace documentation is completed and filed following enterprise procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Australian Dangerous Goods Code and relevant state/territory mass and loading regulations as they apply to vehicles transporting liquid bulk gas
- OH&S procedures and guidelines concerning the use of specialised bulk transfer equipment
- Risks when transferring liquid bulk gas and related precautions to control the risk
- Workplace procedures and policies for the efficient use of specialised equipment to transfer

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REQUIRED KNOWLEDGE AND SKILLS

liquid bulk gas

- Housekeeping standards procedures required in the workplace
- Methods of securing a vehicle following transfer of liquid bulk gas
- Relevant permit and licence requirements

Required skills:

- Communicate effectively with others when using specialised equipment to transfer liquid bulk gas
- Read and interpret instructions, procedures, information and signs relevant to the transfer of liquid bulk gas using specialised equipment
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the transfer of liquid bulk gas using specialised equipment
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when using specialised equipment to transfer liquid bulk gas
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when using specialised equipment to transfer liquid bulk gas in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when using specialised equipment to transfer liquid bulk gas
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the transfer of liquid bulk gas using specialised equipment
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to product or equipment
- Operate and adapt to differences in transfer equipment in accordance with standard operating procedures
- Monitor performance of transfer equipment
- Service transfer equipment in terms of maintenance schedule and standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards

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Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
  - the underpinning knowledge and skills
  - relevant legislation and workplace procedures
  - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
  - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
  - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
  - relevant and appropriate materials and equipment, and
  - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or
  - in an appropriate range of situations in the workplace

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Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• in a range of work environments • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Liquid bulk gas to be transferred may:	• require special precautions
Hazards in the work area may include exposure to:	• hazardous or dangerous materials • contamination of, or from, materials being handled • noise, light, energy sources • stationary and moving machinery, parts or components • service lines • spills, leakages, ruptures • dust/vapours
Hazard management is:	• consistent with the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
Personal protective equipment may include:	• gloves • safety headwear and footwear • safety glasses • mask or respirator • high visibility clothing
Exposure during work operations may be to:	• corrosive chemicals • solvents and adhesives • toxic, explosive and other harmful substances • movement of equipment, goods, vehicles
Regulatory controls and enterprise procedures may govern requirements for:	• transport • storage • volume • mass • required controls

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RANGE STATEMENT

Ignition sources include:	• naked flames and static sources
Requirements for work may include:	• site restrictions and procedures • use of safety and personal protective equipment • communications equipment • specialised lifting and/or handling equipment • incident breakdown procedures • additional gear and equipment • noise restrictions • hours of operation • authorities and permits
Consultative processes may involve:	• other employees and supervisors • suppliers, potential customers and existing clients • management and union representatives • industrial relations, OH&S specialists, and other maintenance, professional or technical staff
Communication in the work area may include:	• phone • electronic data interchange • fax • email • internet • radio • oral, aural or signed communications
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures • site procedures
Information/documents may include:	• Safe Working Load (SWL) and Working Load Limit (WLL) • manifests, bar codes, goods and product identification • manufacturers specifications for equipment/tools • workplace procedures and policies for the transfer of liquid bulk gas • goods identification numbers and codes, including ADG and IMDG markings and HAZCHEM signs • supplier and/or client instructions • codes of practice including the Australian Dangerous Goods Code, relevant Australian Standards and the Industry Safety Code • award, enterprise bargaining agreement, other industrial

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RANGE STATEMENT

	arrangements • relevant standards and certification requirements • quality assurance procedures • emergency procedures • material safety data sheets

Applicable regulations and legislation may include:	• state/territory mass and loading regulations
	• Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
	  • Australian and International Dangerous Goods Codes
	  • Australian Marine Orders and the International Maritime Dangerous Goods Code
	  • IATA Dangerous Goods by Air regulations
	  • Australian and International Explosives Codes
	• Australian and state/territory regulations related to the transfer of liquid bulk gas
	• relevant Australian Standards, including AS 2809.1, AS 2809.3, AS 2931, AS 2430.1, AS 2430.3.4, AS 2430.3.7
	• relevant state/territory environmental protection legislation
	• relevant state/territory OH&S legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field D - Load Handling

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TLID3027A Prepare for transport of dangerous goods

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to prepare for the transport of dangerous goods, including checking the dangerous goods load; assessing vehicle suitability to transport the intended load; checking emergency procedures and equipment; evaluating documented route plan; and completing required assessment process. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant state/territory regulations concerning the transport of dangerous goods, including the current ADG Code.

Work is performed under general supervision. It involves the application of basic principles, routine procedures and regulatory requirements to the preparation of dangerous goods for transport.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Check dangerous goods load	1.1 Load is compared against transport documentation and discrepancies are noted 1.2 Load is checked to ensure that dangerous goods labels are clearly visible and legible, and that packaged goods are correctly labelled 1.3 Load is checked to ensure containers are not damaged 1.4 Vehicle load is checked for compatibility or, where not compatible, is checked for appropriate segregation in accordance with regulatory requirements 1.5 Load is assessed to ensure that it is stowed and secured in or on vehicles in accordance with the current ADG Code and the National Load Restraint Guide 1.6 Shipping documentation and other relevant documents are located in the cabin in accordance with regulatory requirements
2 Assess vehicle suitability to transport intended load	2.1 Vehicle is assessed for suitability and appropriateness to carry designated dangerous goods including classification, mass and configuration 2.2 Licence and insurance requirements (where relevant) are checked for conformity with the current Australian Code for the Transport of Dangerous Goods by Road and Rail and/or other applicable regulatory requirements 2.3 Load restraint system(s) is/are checked for serviceability and appropriateness to secure intended load 2.4 Vehicle is checked to ensure that it is correctly and clearly marked/placarded for the load being carried
3 Check emergency procedures and equipment	3.1 Emergency information for each type of transported dangerous good is noted 3.2 Regulatory and workplace procedures for an incident are noted including notification of relevant personnel and authorities and, where appropriate, use of equipment for containment, clean up

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ELEMENT	PERFORMANCE CRITERIA
	or recovery
	3.3 Personal protective equipment and safety equipment are checked for operational capability and appropriateness to the proposed load
	3.4 Emergency information is located in the cabin in accordance with current ADG Code requirements
4 Evaluate documented route plan	4.1 Selected route plan and potential difficulties including regulatory restrictions, traffic flow and conditions, obstacles, road standards and construction activities are assessed
	4.2 Regulatory and workplace procedures for driving, parking, loading and unloading are identified including actions for disengaging and/or securing the vehicle
5 Complete documentation	5.1 The load is inspected and checked for security to travel in accordance with relevant regulations/permit requirements and the current ADG Code
	5.2 All required documentation for the dangerous goods is completed in accordance with regulatory and workplace requirements

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Current Australian Dangerous Goods Code and relevant state/territory mass and loading regulations as they apply to vehicles transporting dangerous goods
- OH&S procedures and guidelines concerning the transport of dangerous goods
- Risks when transporting dangerous goods and related precautions to control the risk
- Workplace procedures and policies for the preparation of dangerous goods
- Problems that may occur when preparing for the transport of dangerous goods and action that should be taken to prevent or solve them
- Housekeeping standards procedures required in the workplace
- Methods of securing a vehicle following loading of dangerous goods
- Relevant permit and licence requirements

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Required skills:

- Communicate effectively with others when preparing for the transport dangerous goods
- Read and interpret instructions, procedures, information and signs relevant to the preparation of dangerous goods for transport
- Identify goods coding, markings and, where applicable, emergency information panels for the mode of transport/storage selected
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the preparation of dangerous goods for transport
- Operate electronic communication equipment to required protocol
- Estimate the mass, volume and special requirements of a load
- Work collaboratively with others when preparing for the transport of dangerous goods
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may occur when preparing for the transport of dangerous goods in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when preparing for the transport of dangerous goods
- Recognise the hazards and apply precautions and required action to minimise, control or eliminate hazards that may exist during the preparation of dangerous goods for transport
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Identify and correctly use equipment required to load dangerous goods
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment

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EVIDENCE GUIDE

guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
  - assessing operational suitability of equipment and vehicles pertinent to dangerous goods transportation
  - estimating weight and dimensions of load and any special requirements
  - applying hierarchy of hazard control
  - maintaining workplace records and documentation including completion of dangerous goods declaration
  - determining (any) required permits
  - identifying hazards and planning work to minimise risks when transporting dangerous goods
  - selecting appropriate equipment and work systems to enable safe, efficient work

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
  - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
  - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
  - relevant and appropriate materials and equipment, and
  - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or
  - in an appropriate range of situations in the workplace

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Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• in a range of work environments and weather conditions • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Vehicle refers to:	• all applicable transportation modes
Hazards in the work area may include exposure to:	• hazardous or dangerous materials • contamination of, or from, materials being handled • noise, light, energy sources • stationary and moving machinery, parts or components • service lines • spills, leakages, ruptures • dust/vapours
Hazard management is:	• consistent with the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
Personal protective equipment may include:	• gloves • safety headwear and footwear • safety glasses • mask or respirator • breathing apparatus • high visibility clothing
Load restraint systems are:	• as detailed in the National Load Restraint Guide
Preparation of packaged dangerous goods for transport may:	• require special precautions as specified by the manufacturer
Transport documentation may	• Initial Emergency Response Guide

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RANGE STATEMENT

include:	• Emergency Procedure Guide • Material Safety Data Sheet (MSDS) • descriptions for dangerous goods (i.e. proper shipping name, class and division number, packing group, subsidiary risk(s) if any) • UN or ID number
Requirements for work may include:	• site restrictions and procedures • use of safety and personal protective equipment • communications equipment • specialised lifting and/or handling equipment • incident breakdown procedures • additional gear and equipment • noise restrictions • hours of operation • authorities and permits
Consultative processes may involve:	• other employees and supervisors • suppliers, potential customers and existing clients • management and union representatives • industrial relations, OH&S specialists, and other maintenance, professional or technical staff
Communication in the work area may include:	• phone • electronic data interchange • fax • email • internet • radio • oral, aural or signed communications
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures • site procedures
Safety equipment on vehicle may include:	• fire extinguishers • portable warning devices • eye wash kit
Information/documents may include:	• current Australian Dangerous Goods Code, relevant Australian Standards and International Standards • Safe Working Load (SWL) and Working Load Limit (WLL) • manifests, bar codes, goods and product identification

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RANGE STATEMENT

	• manufacturers specifications for equipment/tools • workplace procedures and policies for the transfer of product • goods identification numbers, codes and signs • supplier and/or client instructions • award, enterprise bargaining agreement, other industrial arrangements • relevant standards and certification requirements • quality assurance procedures • emergency procedures • manufacturers specifications, instructions and labelling advice for the packaged dangerous goods, including material safety data sheets

Applicable regulations and legislation may include:	• state/territory mass and loading regulations
	• current Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including:
	  • Australian and International Dangerous Goods Codes
	  • Australian Marine Orders and the International Maritime Dangerous Goods Code
	  • International Air Transport Association (IATA) Dangerous Goods by Air regulations
	• Australian and state/territory regulations related to the carriage of dangerous goods
	• workplace relations regulations
	• equal opportunity legislation
	• equal employment opportunity and affirmative action legislation
	• relevant Australian and International Standards
	• relevant state/territory environmental protection legislation
	• relevant state/territory OH&S legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field D - Load Handling

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TLID3033A Operate a vehicle-mounted loading crane

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to operate a vehicle-mounted loading crane to shift loads, including positioning and stabilising the crane, operating the vehicle-mounted crane, monitoring lift conditions, packing up the crane after operations, and completing all required job records. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the licence/permit requirements and regulations of the relevant state/territory authorities pertaining to vehicle-mounted loading cranes.

Work is performed under general supervision. It involves the application of routine principles and procedures to the operation of a vehicle-mounted loading crane in a variety of operational contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Position and stabilise crane	1.1 Crane is driven to position as per job plan to ensure safe operation in accordance with applicable Australian standards, codes of practice, manufacturers specifications and, where applicable, regulatory and local government requirements
	1.2 Where appropriate, barriers, fencing, temporary boundaries, signage and the like are used to isolate working area in accordance with safe working practice and lift requirements
	1.3 Ground is checked to ensure it is firm enough to bear the load
	1.4 Appropriate plates or packing are correctly used to adequately distribute the load
	1.5 Any outriggers and stabilisers are correctly deployed and positioned in accordance with manufacturers instructions and the appropriate Australian standard and other relevant statutory regulations or local authority requirements
	1.6 Outrigger packing is checked for adequacy prior to and after load is taken
2 Operate vehicle-mounted crane	2.1 Planned hazard control strategies are implemented
	2.2 Required signals are correctly given, interpreted and followed in accordance with appropriate Australian standards
	2.3 Load mass is assessed and correlated with lifting capacity of crane throughout proposed radii of operation
	2.4 Appropriate lifting gear is selected and load secured
	2.5 Load is hoisted and lowered into position using crane movements in accordance with the appropriate Australian standard
	2.6 Crane controls are operated smoothly
	2.7 Crane is shut down and secured during periods of non-operation according to manufacturers specifications and workplace procedures

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ELEMENT	PERFORMANCE CRITERIA
3 Monitor lift conditions	3.1 Load is constantly monitored to ensure load and structural stability
	3.2 Conditions which may affect the continuing stability of the crane are identified and monitored
	3.3 Unplanned situations are responded to in line with workplace procedures in a manner that minimises risk to personnel and equipment
	3.4 Advice is sought from supervisor where there is doubt about correct response to unanticipated conditions, or conflict with customer request
	3.5 Supervisor/allocator is advised of any concern about completing the job within timeframe
	3.6 Shut-down procedures are implemented in accordance with manufacturers instructions in the event of an emergency
	3.7 The relevant motion locks and brakes are applied
	3.8 Crane is shut down using the correct sequence of procedures in accordance with manufacturers specifications and workplace procedures
	3.9 Routine post-operational equipment checks are carried out in accordance with manufacturers specifications
4 Pack up crane	4.1 All lifting equipment and crane components are checked for any signs of deterioration or damage in accordance with the appropriate Australian standard
	4.2 Damaged or worn equipment is segregated and reported to an authorised person for testing/repair/destruction
	4.3 Crane equipment is correctly stowed and secured in accordance with manufacturers instructions and the appropriate Australian standard
	4.4 Crane is immobilised and secured for travel in accordance with manufacturers instructions, workplace guidelines and regulatory requirements
5 Complete job records	5.1 Customer feedback is sought regarding satisfaction with the completed job and any areas of concern reported according to workplace procedures
	5.2 Customer's signature on job completion documentation is obtained
	5.3 Required workplace records are updated accurately and promptly and processed according to workplace procedures

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements pertaining to mobile crane operation
- Relevant OH&S and environmental procedures and regulations
- Mobile crane applications, capacities, configurations, safety hazards and control mechanisms
- Operational procedures for crane crews
- Prioritising and multi-tasking work
- Company work procedures concerning the setting up and rigging of a mobile crane at a work site
- Problems that may arise when operating a vehicle-mounted loading crane and actions that should be taken to prevent or solve them
- Focus of operation of work systems and equipment
- Application of relevant agreements, codes of practice or other legislative requirements

Required skills:

- Communicate effectively with others when operating a vehicle-mounted loading crane
- Read and interpret instructions, procedures, information and signs relevant to the operation of a vehicle-mounted loading crane
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the operation of a vehicle-mounted loading crane
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when operating a vehicle-mounted loading crane
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when operating a vehicle-mounted loading crane in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unanticipated situations that may arise when operating a vehicle-mounted loading crane
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the operation of a vehicle-mounted loading crane
- Plan own work including predicting consequences and identifying improvements
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and

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Required skills:

environments

- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of crane and its equipment and take appropriate action where required
- Service equipment in terms of maintenance schedule and standard operating procedures
- Check and replenish fluids and carry out lubrication processes in the course of work activities

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
  - the underpinning knowledge and skills
  - relevant legislation and workplace procedures
  - other relevant aspects of the range statement

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
  - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
  - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
  - relevant and appropriate materials and equipment, and

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EVIDENCE GUIDE

	• applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• day or night • in a variety of weather conditions
Environment may include movement of:	• equipment • goods • materials • vehicular traffic
Customers may be:	• internal or external
Mobile crane may be involved in work in a range of industry sectors including:	• construction and demolition • manufacturing • waterfront • mining • primary industry • utilities (electricity, gas, water) • arboricultural • swimming pool • quarrying
Hazards may include:	• power lines • noise, light, energy sources

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RANGE STATEMENT

	• overhead service lines • surrounding buildings, structures, facilities • underground services • obstructions • uneven or unstable ground and recently filled trenches • stationary and moving machinery and equipment • hazardous or dangerous materials • traffic hazards and congestion
Hazard management is:	• consistent with the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
Consultative processes may involve:	• other employees and supervisors • management • union representatives • clients • industrial relations and OH&S specialists • other professional or technical staff
Requirements for access and/or lift may include:	• site restrictions and procedures • authorities and permits • hours of operation • induction • slings, chains, nets, brackets and other specialised lifting equipment • noise restrictions • personal protective equipment • support trucks • additional gear and equipment • communications equipment
Personal protective equipment may include:	• gloves • safety headwear and footwear • sunscreen, sunglasses and safety glasses • two-way radios • high visibility clothing
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures • site procedures
Documentation/records may	• operations manuals for vehicle-mounted loading cranes

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RANGE STATEMENT

include:	• Safe Working Load (SWL) and Working Load Limit (WLL)
	• material safety data sheets
	• induction documentation
	• competency standards and training materials
	• job specifications and procedures
	• manufacturers specifications for vehicle-mounted loading cranes
	• workplace operating procedures and policies
	• supplier and/or client instructions
	• communications technology equipment, oral, aural or signed communications
	• personal and work area work procedures and practices
	• conditions of service, legislation and industrial agreements including:
	  • workplace agreements and awards
	  • occupational health and safety procedures
	  • standards and certification requirements
	  • quality assurance procedures
	  • emergency procedures

Applicable procedures and codes may include:	• relevant state/territory regulations and licence/permit requirements pertaining to vehicle-mounted loading cranes • relevant state/territory road rules • relevant state/territory OH&S legislation • relevant state/territory fatigue management regulations • relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field D - Load Handling

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TLID3036A Lift and move load using a mobile crane

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to lift and move a load using a non-slewing mobile crane or a slewing mobile crane. It includes operating the mobile crane to complete job requirements, monitoring lift conditions, implementing shut-down procedures, packing up crane after operations, and completing all required job records. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the licence/permit requirements and regulations of the relevant state/territory authorities pertaining to operations of mobile cranes.

Work is performed with limited or minimum supervision, with limited accountability and responsibility for self and others in achieving the prescribed outcomes. It involves the application of routine principles, procedures and regulations to lift and move loads using slewing and non-slewing mobile cranes in a variety of operational contexts.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Operate mobile crane	1.1 In ascent and descent to/from crane correct use is made of the means provided in accordance with codes of practice and workplace procedures 1.2 Planned hazard control strategies are implemented 1.3 Required signals are correctly given, interpreted and followed in accordance with appropriate workplace procedures 1.4 Boom is positioned to ensure load to be lifted is plumbed under hook 1.5 Load is hoisted and lowered into position using crane movements in accordance with the appropriate workplace procedures 1.6 Crane controls are operated smoothly 1.7 Crane is shut down and secured during periods of non-operation according to manufacturers specifications and workplace procedures
2 Monitor lift conditions	2.1 Load is constantly monitored to ensure load and structural stability 2.2 Conditions which may affect the continuing stability of the crane are identified and monitored 2.3 Unplanned situations are responded to in line with workplace procedures in a manner that minimises risk to personnel and equipment 2.4 Dogger is advised of any new information which affects the lift 2.5 Any necessary changes to job plan are discussed and confirmed with rest of crew 2.6 Advice is sought from supervisor where there is doubt about

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ELEMENT	PERFORMANCE CRITERIA
	correct response to unanticipated conditions, or conflict with customer request
	2.7 Supervisor/allocator is advised of any concern about completing the job within timeframe
3 Implement shut-down procedures	3.1 The relevant motion locks and brakes are applied
	3.2 Crane is shut down using the correct sequence of procedures in accordance with manufacturers specifications and workplace procedures
	3.3 Routine post-operational equipment checks are carried out in accordance with manufacturers specifications
4 Pack up crane	4.1 Crane is de-rigged with other crane personnel in accordance with manufacturers instructions
	4.2 All lifting equipment and crane components are checked in consultation with crane personnel for any signs of deterioration or damage in accordance with the appropriate Australian Standard
	4.3 Damaged or worn equipment is segregated and reported to an authorised person for testing/repair/destruction
	4.4 Crane and equipment are correctly stowed and secured in accordance with manufacturers instructions and the appropriate Australian Standard
5 Complete job records	5.1 Customer feedback is sought regarding satisfaction with the completed job, and any areas of concern are reported according to workplace procedures
	5.2 Customer's signature on job completion documentation is obtained
	5.3 Required workplace records are updated accurately and promptly and processed according to workplace procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant road rules, regulations, permit and licence requirements pertaining to mobile crane operation
- Relevant OH&S and environmental procedures and regulations

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REQUIRED KNOWLEDGE AND SKILLS

- Mobile crane applications, capacities, configurations, safety hazards and control mechanisms
- Risks and hazards involved in mobile crane operation, and associated action that can be taken to eliminate or minimise the risk
- Workplace procedures concerning the operation of a mobile crane at a worksite
- Problems that may occur during a lift, and associated action that can be taken to address the problems concerned
- Communication systems used during a lift
- Focus of operation of work systems and equipment

Required skills:

- Communicate effectively with others when lifting and moving a load using a mobile crane
- Read and interpret instructions, procedures, information and signs relevant to the lifting and moving of a load using a mobile crane
- Complete documentation related to the lifting and moving of a load using a mobile crane
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when lifting and moving a load using a mobile crane
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when lifting and moving a load using a mobile crane in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unanticipated situations that may arise when lifting and moving a load using a mobile crane
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the lifting and moving of a load using a mobile crane
- Plan own work including predicting consequences and identifying improvements
- Prioritise and multi-task work
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Monitor performance of equipment

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Required skills:

- Service equipment in terms of maintenance schedule and standard operating procedures
- Check and replenish fluids and carry out lubrication processes in the course of work activities

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
	  • applying the underpinning knowledge and skills
	  • applying relevant legislation and workplace procedures
	  • complying with OH&S licensing legislation
	  • applying risk assessment and management procedures for mobile crane operations
	  • effectively completing the pre-operational checks, positioning, stabilising, set-up, post-operational checks of a mobile crane
	  • using mathematical procedures to determine the weight of a load and the lifting equipment required for the lift
	  • using load charts to determine the limitations of the crane and/or crane set-up required
	  • operating the crane including all functions to their maximum extension in the lifting and moving of a load

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace

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EVIDENCE GUIDE

	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through appropriately simulated activities at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• by day or night • in a variety of weather conditions
Environment may include movement of:	• equipment • goods • materials and vehicular traffic
Customers may be:	• internal or external
Mobile crane may be any slewing and non-slewing crane and may be involved in work in a range of industry sectors including:	• construction and demolition • manufacturing • waterfront • mining • primary industry • utilities (electricity, gas, water) • arboricultural • swimming pool • quarrying
Hazards may include:	• power lines • noise, light, energy sources

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RANGE STATEMENT

	• overhead service lines • surrounding buildings, structures, facilities • underground services • obstructions • uneven or unstable ground and recently filled trenches • stationary and moving machinery and equipment • hazardous or dangerous materials • traffic hazards and congestion
Hazard management is consistent with:	• the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
Personal protective equipment may include:	• gloves • safety headwear and footwear • sunscreen, sunglasses and safety glasses • two-way radios • high visibility clothing
Consultative processes may involve:	• other employees and supervisors • management • union representatives • clients • industrial relations and OH&S specialists • other professional or technical staff
Requirements for access and/or lift may include:	• site restrictions and procedures • authorities and permits • hours of operation • induction • slings, chains, nets, brackets and other specialised lifting equipment • noise restrictions • personal protective equipment • support trucks • additional gear and equipment • communications equipment
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures • site procedures
Documentation/records may	• site plans

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RANGE STATEMENT

include:

- Safe Working Load (SWL) and Working Load Limit (WLL)
- operations manuals including load charts and crane and rigging manuals
- induction documentation
- competency standards and training materials
- job specifications and procedures
- manufacturers specifications
- workplace operating procedures and policies
- supplier and/or client instructions
- communications technology equipment, oral, aural or signed communications
- personal and work area work procedures and practices
- conditions of service, legislation and industrial agreements including:
  - workplace agreements and awards
  - occupational health and safety procedures
  - standards and certification requirements
  - quality assurance procedures
  - emergency procedures

Applicable procedures and codes may include:

- relevant state/territory regulations and licence/permit requirements pertaining to mobile cranes
- relevant Australian Standards and certification requirements
- relevant state/territory road rules
- relevant state/territory OH&S legislation
- relevant state/territory fatigue management regulations
- relevant state/territory environmental protection legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field D - Load Handling

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TLIF2006A Apply accident-emergency procedures

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to apply accident emergency procedures, including responding to an incident, controlling and assisting at an accident or emergency site, finalising accident-emergency processes, and completing records, reports and other required documentation in accordance with regulatory requirements and workplace procedures. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in accordance with OH&S codes/regulations and workplace requirements.

Work is performed under limited supervision. It involves the application of regulatory requirements and workplace procedures when responding to accident/emergencies in the workplace.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Respond to the incident	1.1 Response to the incident or accident is in accordance with workplace emergency procedures and relevant regulatory requirements 1.2 Details of the cause(s) and effects of the incident are identified and reported 1.3 Assistance requirements for accidents and emergencies are clarified and reported immediately to the appropriate parties 1.4 Requests for assistance are made to relevant personnel and emergency services
2 Control and assist at accident or emergency site	2.1 Site is controlled and protected until the arrival of authorised personnel 2.2 Assistance is provided to injured persons, within the limitations of duty of care and workplace procedures 2.3 Relevant authorities at the site are cooperated with and assisted within workplace policies
3 Finalise accident - emergency process and complete records	3.1 Relevant information is exchanged in accordance with state/territory law and workplace procedures 3.2 Documentation and reports are completed and processed in accordance with workplace and relevant regulatory requirements

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

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REQUIRED KNOWLEDGE AND SKILLS

Required knowledge:

- Relevant regulatory and code requirements applicable in accident/emergency situations
- Relevant OH&S and environmental protection policies and procedures
- Workplace procedures for accident-emergency response
- Workplace emergency, fire and accident procedures
- Site layout
- Focus of operation of work systems, equipment or management, site and organisational operating and emergency procedures
- Typical problems that can occur during a safety incident, accident or emergency and related action that can be taken

Required skills:

- Communicate effectively with others when responding to an accident or an emergency
- Read and interpret instructions, procedures and information relevant to a response to an accident or an emergency
- Interpret and follow operational instructions and prioritise work
- Negotiate and resolve issues when responding to an accident or an emergency
- Complete documentation related to a response to an accident or an emergency
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when responding to an accident or an emergency
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unplanned events that may occur when responding to an accident or an emergency
- Analyse the working environment in order to identify hazards, assess safety risks and design and implement appropriate OH&S control procedures
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when responding to an accident or an emergency
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Select and appropriately apply technology, information systems and policies during a safety incident, accident or emergency

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Required skills:

- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation • As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests • Practical assessment must occur:

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EVIDENCE GUIDE

- through activities in an appropriately simulated environment at the registered training organisation, and/or
- in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may be conducted:	• in a range of work environments • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• limited or restricted spaces • exposed conditions • controlled or open environments • even or uneven surfaces • wet or dry surfaces
Workplace hazards may include but are not restricted to:	• moving heavy loads in an unsafe work environment • unsecured machinery, components or repaired equipment • slippery floors • welding equipment • sharp tools and implements • power tools • moving and rotating machinery • flammable liquids, vapours and fuel • faulty machinery equipment handling equipment and lifting gear • using equipment beyond safe working limits • poor housekeeping procedures • non-compliance with safe working procedures • electrical wiring and systems, including exposed electrical circuits • working at heights and in confined spaces • toxic gases and substances

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RANGE STATEMENT

	• chemicals and other harmful substances • damaged goods, pallets and containers • dangerous/hazardous goods
Consultative processes may involve:	• OH&S specialists • trainers • other employees and supervisors • management • union representatives • manufacturers representatives • supplier representatives • customers/clients • other maintenance, professional or technical staff
Depending on the type of organisation concerned and the local terminology used, workplace plans/procedures may include:	• company plans/procedures • enterprise plans/procedures • organisational plans/procedures • established plans/procedures
Information/documentation may include:	• workplace accident-emergency procedures and policies • workplace OH&S management system including hazard/safety risk control strategies • OH&S training notes and materials • journals and work related literature concerning OH&S • competency standards • customer/client instructions • customer service standards and procedures • workplace products and services information • quality assurance standards and procedures • relevant agreements, codes of practice including the national standards for services and operations • manufacturers/suppliers' specifications, advice, recommended procedures, policies and instructions • workplace guidelines on appropriate workplace language and communication strategies and interpretation of relevant information • regulations and policies relating to minimising risks to the environment and ensuring compliance with OH&S requirements • emergency procedures
Applicable regulations and legislation may include:	• relevant regulations, standards and codes of practice • hazardous substances and dangerous goods codes • relevant Australian and state/territory OH&S legislation including regulations and codes of practice relating to

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RANGE STATEMENT

hazards present in the workplace or industry, including:

- general duty of care under OH&S legislation and common law
- requirements for the maintenance and confidentiality of records of occupational injury and disease
- requirements for provision of OH&S information and training
- provisions relating to health and safety representatives and/or OH&S committees
- provisions relating to OH&S issue resolution

- environmental protection regulations
- relevant Australian standards and certification requirements including Australian Standard AS 1885.1

Unit Sector(s)

Not Applicable

Competency Field

Competency Field F - Safety Management

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TLIF2010A Apply fatigue management strategies

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to apply fatigue management strategies, including identifying and acting upon signs of fatigue and implementing appropriate strategies to minimise fatigue during work activities, in accordance with legislative and regulatory requirements. Licensing or certification requirements are not applicable to this unit.

Application of the Unit

Application of the Unit

Persons achieving competence in this unit will need to fulfil the applicable federal and state/territory legislation and relevant regulations covering the management of fatigue in the workplace.

Work is performed under some supervision generally within a team environment. It involves the application of the relevant regulations, codes and guidelines of the federal government and state/territory authorities concerning fatigue management during work activities and in particular when operating equipment, trains, vehicles, load shifting equipment, marine vessels and aircraft.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Identify and act upon signs of fatigue	1.1 Potential causes of fatigue are identified and action is taken to minimise their effects in accordance with company procedures 1.2 Personal warning signs of fatigue are recognised and necessary steps are taken in accordance with workplace procedures to ensure that effective work capability and alertness are maintained
2 Implement strategies to minimise fatigue	2.1 Workplace procedures are assessed to minimise fatigue 2.2 Factors which increase the risk of fatigue-related accidents and safety incidents are understood and minimised 2.3 Strategies to manage fatigue are implemented in accordance with company policy 2.4 Lifestyle choices are made which promote the effective long-term management of fatigue 2.5 Effective practices in combating fatigue are adopted and applied 2.6 Personal fatigue management strategies are communicated to other relevant people 2.7 Appropriate counter measures are planned to combat fatigue

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

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REQUIRED KNOWLEDGE AND SKILLS

Required knowledge:

- Relevant codes, regulations, permit and licence requirements related to fatigue management
- Relevant OH&S regulations as they relate to fatigue
- Workplace policies and procedures related to fatigue management and the control of factors that can contribute to fatigue and fatigue-related accidents
- Sources of information on fatigue
- The risks and hazards created by fatigue in the workplace
- How fatigue affects workplace performance
- How fatigue contributes to workplace accidents
- Ways of recognising fatigue
- Strategies and ways of managing fatigue
- Causes and effects of fatigue on workers/drivers
- Factors which increase fatigue-related accidents
- Lifestyles which promote the effective long-term management of fatigue

Required skills:

- Communicate effectively with others when applying fatigue management strategies
- Read and interpret instructions, procedures, regulations and signs related to fatigue management and apply them to work activities
- Recognise symptoms of fatigue and take appropriate action in accordance with fatigue management regulations and workplace procedures
- Work collaboratively with others to manage and minimise the effects of fatigue during work activities
- Adjust lifestyle patterns to ensure effective fatigue management during work activities
- Modify activities and take appropriate initiatives to manage fatigue in the workplace depending on differing work contexts, risk situations and environments
- Apply precautions and required action to minimise and control the effects of fatigue when carrying out own work functions
- Adapt to changes in rosters and standard operating procedures as they may relate to fatigue management
- Participate in identifying and meeting own learning needs on matters related to fatigue management

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Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and other/or simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and/or equipment, and/or
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

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RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Workplace may include:	• any work environment requiring safety critical operational judgements to be made and in particular when operating equipment, vehicles, load shifting equipment, trains, marine vessels and aircraft at night
The need for fatigue management in a range of industry situations including:	• operations conducted at all times but particularly at night • typical weather conditions • while working and/or driving at a workplace, depot, base or warehouse • while working and/or driving at a client's workplace or worksite • driving a motor vehicle on the open road • driving a motor vehicle on a private road • driving a train, locomotive or motive power unit • operating a marine vessel in coastal or international waters • operating an aircraft • operating load shifting equipment • operating safety critical industrial plant and equipment
Work-related factors that may contribute to fatigue include:	• work demands such as: workload, work duration, shift pattern, time of day, frequency and duration of breaks and the type of work (such as working in isolation, repetitive tasks and boring, monotonous or under-challenging tasks) • organisational factors such as: work environment (including temperature, ventilation, continual rhythmic vibration from equipment), payment system, trip and work scheduling, and the predictability of work
Worker/operator-related factors that may contribute to fatigue include:	• lifestyle factors such as: sleep patterns, alcohol and drug use, quantity and timing of food and drink, and opportunities for relaxation with family and friends • working multiple jobs • personal or biological factors such as: state of mental and/or physical health, inadequate sleep, sleep disorders, emotional stress, family responsibilities, relationship difficulties, inadequate competence to complete work tasks, and circadian rhythms
Responsibilities of individual for fatigue risk management may include:	• following the organisation's fatigue management policy and procedures • using time away from work appropriately to rest and recover • checking and ensuring fitness for work • reporting symptoms of fatigue

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RANGE STATEMENT

	• taking action to minimise risk when symptoms of fatigue are recognised
Schedules may include:	• rosters • vehicle schedules • timetabling • workplans
Depending on the organisation, operating procedures may include:	• standard operating procedures • company procedures • enterprise procedures • organisational procedures • established procedures
Information and documents may include:	• federal and state/territory regulations and guidelines concerning fatigue management in various transport and workplace situations • workplace instructions and procedures on fatigue management • relevant OH&S regulations and procedures • work schedules and shift rosters • emergency procedures • log book or record book (where required) • records and reports of fatigue-related errors and safety incidents • relevant standards and certification requirements • quality assurance procedures
Applicable legislation, regulations and codes may include:	• relevant regulations and codes of the federal government and the state/territory regulatory authorities concerning fatigue management • relevant state/territory road rules • relevant rail industry safe working codes and regulations (where applicable) • relevant state/territory permit regulations and requirements • relevant state/territory OH&S legislation

Unit Sector(s)

Not Applicable

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Competency Field

Competency Field F - Safety Management

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TLIF2012A Apply safe procedures when handling/transporting dangerous goods or explosives

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to apply safe handling strategies when handling dangerous goods or explosives, including driving the vehicle concerned in a safe manner and consulting with relevant authorities/persons in accordance with regulatory requirements. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant Australian and state/territory regulations and codes, including the current Australian Dangerous Goods Code, the Australian Explosives Code, and the Code of Practice for the Safe Transport of Radioactive Substances.

Work is performed under limited or minimum supervision. It involves the application of the basic principles, routine procedures and regulatory requirements to safe handling/transport of dangerous goods/explosives/hazardous substances in a range of operational situations.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Operate equipment and/or vehicle in a safe manner	1.1 Safety equipment is checked for serviceability and required quantities and types 1.2 Equipment/vehicle is operated safely in accordance with the relevant industry regulations, licence/permit requirements/or standards and as directed by police and/ or competent authority 1.3 Safety guidelines and codes are correctly applied 1.4 Dangerous goods/explosives/hazardous substances are handled/conveyed in accordance with the relevant government regulations and codes 1.5 Relevant emergency procedures are assessed relative to the dangerous goods/explosives/hazardous substances concerned 1.6 Emergency procedures are instigated in accordance with the relevant codes and government regulations to ensure precautions are taken consistent with directions set out in the emergency procedures 1.7 Procedures are implemented to minimise damage to equipment, facilities and the environment and minimise injury to personnel
2 Consult with relevant authorities/persons	2.1 Dangerous goods occurrences are reported to the competent authority, fire brigade and/or police using appropriate workplace procedures, in specified timeframes in accordance with relevant regulatory requirements 2.2 Assistance is provided to the competent authority as requested 2.3 Other persons within affected emergency area are warned about the hazard in accordance with workplace procedures

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant Australian and state/territory regulations and codes pertaining to the identification, handling and marking of dangerous goods, explosives or hazardous substances including the current Australian Dangerous Goods Code
- OH&S procedures and guidelines concerning the lifting and movement of loads
- The company's incident reporting system, and the responsibility of the employer to report incidents to the relevant State or Government authority
- Risks and hazards when handling and conveying dangerous goods, explosives or hazardous substances, and related precautions to control the risk
- Workplace procedures and policies for the handling and transport of dangerous goods, explosives or hazardous substances
- Characteristics of various dangerous goods, explosives or hazardous substances and their implications for handling and transport
- Compatibility of various types of dangerous goods, explosives or hazardous substances
- Housekeeping standards procedures required in the workplace
- Site layout and obstacles

Required skills:

- Communicate effectively with others when handling or transporting dangerous goods or explosives
- Read and interpret instructions, procedures, information and signs relevant to the handling or transporting of dangerous goods or explosives
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the handling or transporting of dangerous goods or explosives
- Operate electronic communication equipment to required protocol
- Work collaboratively with others handling or transporting dangerous goods or explosives
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when handling or transporting dangerous or hazardous goods or explosives in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unanticipated situations that may arise during the handling or

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Required skills:

transporting of dangerous goods or explosives

- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the handling or transporting of dangerous goods or explosives
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Apply fatigue management knowledge and techniques
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in handling and transportation equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
	  • identifying characteristics and hazards of the dangerous goods/explosives/hazardous substances being handled
	  • interpreting relevant signs, labels and codes
	  • locating, interpreting and applying relevant information
	  • safely handling/transporting dangerous goods/explosives/hazardous substances in accordance with workplace procedures and regulatory requirements
	  • identifying, selecting and using appropriate handling/transport equipment, vehicles, personal protection equipment and related procedures

Context of and specific resources	• Performance is demonstrated consistently over a period

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EVIDENCE GUIDE

for assessment	of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• in a range of work environments and weather conditions • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• internal or external
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments

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RANGE STATEMENT

	• a workplace, warehouse or depot • a vehicle on the road • client's workplace • convoy of a group of vehicles
Goods/cargo being handled/conveyed may require:	• special precautions for handling, stacking and transport
Classes of dangerous goods/explosives/hazardous substances are:	• as defined in the respective Australian Codes
Standard marking and signage for identified explosives and dangerous goods is as required:	• in the respective Australian Codes
Personnel in the work area may include:	• workplace personnel • site visitors • contractors • official representatives
Communication in the work area may include:	• phone • electronic data interchange • fax • email • internet • radio • oral, aural or signed communications
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Handling operations may be carried out:	• both manually and with the aid of lifting equipment and/or appliances
Load restraint procedures and equipment are:	• as specified in mass and loading regulations and guidelines
Personal protective equipment may include:	• gloves • safety headwear and footwear • safety glasses • two-way radios • high visibility clothing • protective clothing

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RANGE STATEMENT

Information/documents may include:	• goods/materials identification numbers, codes and signs • manifests, bar codes, goods and container identification • manufacturers specifications for equipment/tools • workplace procedures and policies for the handling of dangerous goods, explosives and radioactive and other hazardous substances, and incident reporting • supplier and/or client instructions • material safety data sheets • relevant codes of practice, including the Australian Dangerous Goods Code, the Australian Explosives Code, the Code of Practice for the Safe Transport of Radioactive Substances, the Industry Safety Code, and National Standards for Manual Handling • National Load Restraint Guide • award, enterprise bargaining agreement, other industrial arrangements • standards and certification requirements • quality assurance procedures • emergency procedures

Applicable regulations and legislation may include:	• Australian and state/territory regulations pertaining to the handling of dangerous goods/explosives/hazardous substances
	• Australian and international regulations and codes of practice for the handling and transport of explosives, dangerous goods and hazardous substances, including:
	  • Australian and International Dangerous Goods Codes
	  • Australian Marine Orders and the International Maritime Dangerous Goods Code
	  • IATA Dangerous Goods by Air regulations
	  • Australian and International Explosives Codes
	  • Code of Practice for the Safe Transport of Radioactive Substances
	  • state/territory legislation covering the safe handling of infectious substances
	• relevant state/territory environmental protection legislation
	• equal opportunity
	• workplace relations regulations
	• equal employment opportunity and affirmative action legislation
	• relevant state/territory OH&S legislation

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Unit Sector(s)

Not Applicable

Competency Field

Competency Field F - Safety Management

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TLIF3063A Administer the implementation of fatigue management strategies

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to administer the implementation of fatigue management strategies, including monitoring the implementation of fatigue management strategies; and recognising breaches of fatigue management policies, procedures and regulations. It also includes developing and assessing staff competence in fatigue management; providing feedback to staff on any shortcomings in their fatigue management skills and knowledge; and reporting to management on the implementation of fatigue management policy. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Persons achieving competence in this unit will need to fulfil the requirements of the applicable Commonwealth and state/territory legislation and relevant regulations covering the management of fatigue in the workplace.

Work is performed under limited supervision generally as a team leader or supervisor. It involves the application of relevant regulations and the principles of fatigue management when administering the implementation of an organisation's fatigue management strategies during work operations in a defined workplace.

Licensing/Regulatory Information

Refer to Unit Descriptor

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Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Monitor the implementation of fatigue management strategies	1.1 Work activities of employees, subcontractors and suppliers in the supply chain of products and services are monitored in accordance with the organisation's fatigue risk management implementation plan 1.2 Reviews are undertaken of scheduled versus actual hours of work and where a compliance breach is identified, appropriate action is taken to analyse the reasons concerned and to rectify the situation
2 Recognise breaches of fatigue management policies, procedures and regulations	2.1 Signs and symptoms of fatigue in employees are identified in accordance with operational procedures 2.2 Breaches of fatigue management policies, procedures and regulations in the work activities of employees, subcontractors and suppliers are recognised and reported as per standard procedures 2.3 Errors and incidents traceable to non-compliance with fatigue management procedures and regulations are investigated and reported in accordance with operational procedures 2.4 Appropriate action is taken in conjunction with employees, subcontractors or suppliers concerned to ensure ongoing and future compliance with the organisation's fatigue management policy and procedures
3 Develop and assess staff	3.1 Appropriate training programs and learning resources are

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ELEMENT	PERFORMANCE CRITERIA
competence in fatigue management	developed and provided to ensure that employees understand the organisation's fatigue management policies and procedures and the risks, causes and consequences of fatigue
	3.2 Employees are assessed to confirm that they are competent in their understanding of the organisation's fatigue management strategies and can apply them to their day-to-day work activities and responsibilities
	3.3 Any deficiencies in the competence of individual employees to apply the organisation's fatigue management strategies to their work activities are identified, and appropriate learning opportunities are provided to the employee to enable her or him to achieve the competence required
4 Provide feedback to employees on any shortcomings in fatigue management skills and knowledge	4.1 Evidence of any shortcomings in an employee's implementation of fatigue management strategies is obtained and interpreted from observation of signs and symptoms of fatigue in their work activities, periodic evaluations of work performance, and assessments of competence carried out as part of training and learning activities
	4.2 Employees are provided with feedback on any identified shortcomings in their implementation of fatigue management strategies and appropriate support and counselling is provided on how they might address these shortcomings
	4.3 Where appropriate, further learning opportunities and information are provided to the employees to assist them in implementation of organisation's fatigue management strategies in their area of work activity
5 Report on the implementation of fatigue management policy	5.1 Periodic audits of the implementation of fatigue management strategies in the work areas of responsibility are carried out as per standard procedures
	5.2 Accidents and safety incidents are investigated and analysed to identify the extent to which fatigue might have been a contributing factor
	5.3 Reports on the implementation of the organisation's fatigue risk management system are prepared and submitted to designated personnel as per standard procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

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REQUIRED KNOWLEDGE AND SKILLS

Required knowledge:

- Relevant codes, regulations, permit and licence requirements related to fatigue management
- Relevant OH&S regulations as they relate to fatigue
- Organisation's fatigue risk management system as it relates to the operational areas being administered
- Organisation's fatigue risk management system and the workplace policies and procedures related to fatigue management and the control of factors that can contribute to fatigue and fatigue-related accidents
- Responsibilities of both the organisation and individual employees for the implementation of fatigue management regulations and policies in an organisation including suppliers and sub-contractors in the supply chain of the organisation's services and products
- Procedures for the auditing and review of an organisation's fatigue risk management rystem and related policy and procedures, and for reporting the outcomes of audits
- The risks and hazards created by fatigue in the workplace
- Causes and consequences of fatigue on both employees and an organisation
- How fatigue affects workplace performance
- How fatigue contributes to workplace accidents
- Ways of recognising fatigue
- Strategies and ways of managing fatigue
- Factors which increase fatigue-related accidents
- Lifestyles which promote the effective long-term management of fatigue
- Ways of assisting individuals to assess their own sleep patterns and to evaluate their own fitness for work. This may include information on identifying sleep disorders and obtaining appropriate treatment
- Options and resources for providing training and learning opportunities for employees on fatigue management and the implementation of an organisation's fatigue risk management system, including initial induction training, in-depth training on fatigue and fatigue management techniques, remedial training where existing competence is assessed as being insufficient, and refresher training on fatigue management
- Processes and resources for assessing employees' competence in fatigue management
- Ways of providing feedback to employees on any identified deficiencies in their competence to implement fatigue management strategies

Required skills:

- Communicate effectively with others when implementing the organisation's fatigue risk management system
- Read and interpret documentation on an organisation's fatigue risk management system and related policy, instructions, procedures and regulations related to fatigue management and

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Required skills:

apply them to supervisory activities

- Recognise breaches of fatigue management strategies and regulations and take appropriate action in accordance with organisation's fatigue risk management system
- Work collaboratively with employees and other management staff others to implement the organisation's fatigue risk management system
- Plan and organise training and learning opportunities for employees on fatigue management and the implementation of an organisation's fatigue risk management system
- Plan and carry out audits and reviews of an organisation's fatigue risk management system
- Modify activities and take appropriate initiatives to administer the implementation of an organisation's fatigue risk management system depending on differing contexts, risk situations and environments
- Adapt to any changes in regulations policies and procedures as they may relate to fatigue management
- Assist employees to identify their own learning needs on matters related to fatigue management

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is

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EVIDENCE GUIDE

	required to: • relevant and appropriate materials and equipment, and • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Workplace may include:	• any work environment requiring safety critical operational judgements to be made and in particular when operating equipment, vehicles, load shifting equipment, trains, marine vessels and aircraft at night
Components of a fatigue risk management system include:	• risk management policy documents • risk management procedures • risk management competence assessment processes • risk management training and learning opportunities • hazard control system
The need for fatigue management in a range of industry situations including:	• operations conducted at all times but particularly at night • typical weather conditions • while working and/or driving at a workplace, depot, base or warehouse • while working and/or driving at a client's workplace or work site • driving a motor vehicle on the open road • driving a motor vehicle on a private road

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RANGE STATEMENT

	• driving a train, locomotive or motive power unit • operating a marine vessel in coastal or international waters • operating an aircraft • operating load shifting equipment • operating safety critical industrial plant and equipment
Work-related factors that may contribute to fatigue include:	• work demands such as: workload, work duration, shift pattern, time of day, frequency and duration of breaks and the type of work (e.g. .working in isolation, repetitive tasks and boring, monotonous or under-challenging tasks) • organisational factors such as: work environment (including temperature, ventilation, continual rhythmic vibration from equipment), payment system, trip and work scheduling, and the predictability of work
Worker/operator-related factors that may contribute to fatigue include:	• lifestyle factors such as: sleep patterns, alcohol and drug use, quantity and timing of food and drink, and opportunities for relaxation with family and friends • working multiple jobs • personal or biological factors such as: state of mental and/or physical health, inadequate sleep, sleep disorders, emotional stress, family responsibilities, relationship difficulties, inadequate competence to complete work tasks, and circadian rhythms
Responsibilities of organisation for fatigue risk management may include:	• providing support such as: complying with fatigue management regulations, developing and implementing appropriate policy and procedures, providing assessment, training and learning opportunities, and establishing and implementing error and incident reporting systems • ensuring work schedules provide adequate opportunity for rest and recovery between shifts • assessing work tasks for fatigue related risk and redesigning if necessary • managing fatigued employees
Responsibilities of individual for fatigue risk management may include:	• following the organisation's fatigue management policy and procedures • using time away from work appropriately to rest and recover • checking and ensuring fitness for work • reporting symptoms of fatigue
Fatigue management competency-based training may include:	• initial induction training (incorporating a basic fatigue management component) • fatigue management awareness training • in-depth training on fatigue and fatigue management techniques

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RANGE STATEMENT

	• remedial training where existing competence is assessed as being insufficient • refresher training on fatigue management
Depending on the organisation operating procedures may include:	• standard operating procedures • company procedures • enterprise procedures • organisational procedures • established procedures
Information and documents may include:	• Commonwealth and state/territory regulations and guidelines concerning fatigue management in various transport and workplace situations • fatigue risk management system documents • workplace instructions and procedures on fatigue management • reports of audits of fatigue risk management system • error and safety incident reports • relevant OH&S regulations and procedures • relevant standards and certification requirements • quality assurance procedures
Applicable legislation, regulations and codes may include:	• relevant regulations and codes of the Commonwealth Government and the state/territory roads and traffic authorities concerning fatigue management • relevant state/territory road rules • relevant rail industry safe working codes and regulations (where applicable) • relevant state/territory permit regulations and requirements • relevant state/territory OH&S legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field F - Safety Management

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TLIF3093A Implement chain of responsibility regulations

Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to implement chain of responsibility regulations.

It includes identifying and interpreting relevant regulations, and reviewing operations in line with chain of responsibility regulations.

Licensing, legislative, regulatory and certification requirements are applicable to this unit.

Application of the Unit

Work may be undertaken in various contexts within the transport and logistics industry.

The unit generally applies to those who provide leadership of others, individually or in teams.

Associated units relating to chain of responsibility can be found in TLI10 Transport and Logistics Training Package.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Interpret chain of responsibility regulations	1.1 State or territory chain of responsibility regulations are identified as they apply to the workplace 1.2 Individual chain of responsibility regulations are identified for job roles/functions within the workplace 1.3 Information on chain of responsibility regulations is clearly explained to parties and responsible persons 1.4 Responsibilities of all job roles within chain of responsibility are determined within work environment
2 Implement and review workplace procedures	2.1 Chain of responsibility workplace policy and procedures are regularly reviewed to ensure they meet regulatory requirements 2.2 Workplace policy and procedures are continually updated to ensure chain of responsibility regulations are followed 2.3 Chain of responsibility workplace policy and procedure plans are implemented for relevant parties 2.4 Records relating to chain of responsibility are completed and maintained
3 Complete reporting for chain of responsibility policy	3.1 Records and information relevant to chain of responsibility requirements are collected 3.2 Records and information relevant to chain of responsibility are analysed 3.3 Findings are developed and reported

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant state or territory regulations relating to job function
- Regulations, and workplace policy and procedures relating to job function
- Effects of a breach on applicable job role and related penalties
- Job roles and functions in the workplace that are affected by chain of responsibility
- Reporting systems within the organisation
- Consequences of non-compliance with chain of responsibility regulations
- Where to locate current chain of responsibility information
- Action required within limits of own job role or function when possible breaches are identified
- Required workplace documentation
- Understanding of the five key aspects: load restraint, mass, dimensions, speed, and fatigue management

Required skills:

- Apply strategies to prevent breaches of chain of responsibility
- Recognise a breach of the workplace policy and procedure
- Take appropriate action if a breach takes place
- Complete relevant documentation in relation to chain of responsibility
- Implement change as it relates to chain of responsibility
- Review and implement updates to the chain of responsibility regulations as they occur
- Apply communication strategies within the organisation for chain of responsibility

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and

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demonstrate competency in this unit	include demonstration of: • an understanding of chain of responsibility • an understanding of associated state or territory regulations in which the job is, relative to chain of responsibility • techniques used to implement relevant workplace policy and procedures as they pertain to chain of responsibility • an analysis of records relevant to chain of responsibility as they apply at a company level

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment
	  • applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• As a minimum, assessment of knowledge must be conducted through appropriate assessments using written, practical and oral assessments
	• Practical assessment must occur:
	  • through appropriately simulated activities at the training organisation, and/or
	  • in an appropriate range of situations in the workplace
	• Online assessment is not suitable for final assessment of this unit of competency

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Parties and responsible persons within the chain include:	• consigner • consignee

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- packer
- loader
- scheduler
- driver
- receiver
- carrier
- manufacturer
- employee
- employer
- owner
- board of directors
- senior official
- dispatch officer
- operator
- person in charge or apparently in charge of a vehicle
- agent
- subcontractor
- authorised officer
- elected councillor

Customers may include:

- external customer
- receiver
- forwarder
- dispatcher
- yard foreman
- safety regulator
- police or enforcement official
- public
- subcontractor

Depending on the organisation concerned, workplace procedures may be called:

- standard operating procedures (SOPs)
- company procedures
- enterprise procedures
- organisational procedures
- established procedures

Work environment includes:

- company
- site
- depot
- loading dock
- warehouse
- customer premises
- terminal
- storage or loading facility
- equipment

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Communication in the work area may include:	• phone • electronic data interchange (EDI) • fax • email • internet • oral, aural or signed communications
Documentation and records may include:	• transport regulations as they apply to the enterprise, including local authority regulations and procedures • relevant OH&S regulations • workplace policies and procedures relating to chain of responsibility regulations • relevant Australian standards and certification requirements • relevant internal data entry books, including work diaries, data sheets and load sheets • transport and journey documentation
Applicable legislation and regulations may include:	• relevant transport regulations for the enterprise, including Australian and international regulations and codes of practice for the transport of dangerous goods and hazardous substances • relevant state and territory OH&S and environmental protection legislation • workplace relations regulations

Unit Sector(s)

Not applicable.

Competency Field

F – Safety Management

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TLIF3096A Carry out emergency response to a dangerous goods incident

Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to carry out an emergency response in the event of a dangerous goods incident, including responding to the incident, controlling and assisting at the site, identifying the product being carried, and completing reports and other required documentation in accordance with regulatory requirements and workplace procedures.

Licensing, legislative, regulatory and certification requirements are applicable to this unit.

Application of the Unit

Work must be carried out in accordance with OH&S codes and regulations and workplace requirements.

Work is performed under limited supervision. It involves the application of regulatory requirements and workplace emergency response procedures when responding to accidents and emergencies.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Identify incident response procedures	1.1 Company procedures for responding to incidents and emergencies are identified and explained
	1.2 Procedures for accessing first aid are determined
	1.3 Relevant personal protective equipment (PPE) is selected and used
	1.4 Familiarisation with the use of fire safety equipment is demonstrated
Respond to the incident	2.1 Nature, extent and degree of threat from the incident are assessed in accordance with emergency procedures
	2.2 Guides for product being carried are located and UN number and shipping/technical name are obtained from available documents
	2.3 Resources and vulnerability of the situation are analysed
	2.4 Key people and relevant support agencies are identified and notified of the incident and the product details
	2.5 Instructions and support are sought from key people and support agencies in accordance with emergency procedures and transport emergency response plan (TERP)
Apply emergency strategies	3.1 Safety and security procedures are complied with in all actions
	3.2 PPE is selected and used according to the requirements of the situation in accordance with OH&S and emergency procedures
	3.3 Welfare of people is guarded and protected as the first priority in any action
	3.4 Exclusion zone is established around the incident site

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	3.5 Safe access and exit are maintained for emergency services in accordance with emergency procedures and situational analysis
	3.6 Controls are selected and applied to achieve objectives with minimum damage to people and the environment
	3.7 Immediate response to threat or danger to people is provided while preserving personal safety in accordance with emergency procedures
	3.8 Emergency first aid treatment of minor injuries is carried out correctly and details of any treatment administered are reported accurately to incident response leader
Communicate with and complement other personnel	4.1 Effective communication and documentation with key people and support agencies are constantly maintained
	4.2 Activities are consistent with the incident response leader's plan of action
	4.3 Activities support the work of other key people and support agencies
Monitor the environment and the incident	5.1 Factors that may create or increase risk of injury or damage are constantly assessed and reported to incident response leader
	5.2 Hazard controls are monitored to ensure continued effectiveness
	5.3 Own and others' health and morale are monitored and maintained
	5.4 Changes in conditions and behaviour are identified and reported
Assist with recovery from incident	6.1 Evidence relating to the cause of the incident is preserved and recorded as far as possible
	6.2 Appropriate assistance is provided in accordance with emergency procedures
	6.3 Emergency equipment is returned to a state of readiness as soon as is reasonably possible
	6.4 Debriefings are attended and participated in as appropriate

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills required at the completion of this unit.

Required knowledge:

- Appropriate PPE and clothing
- Concept of dynamic risk assessment
- Emergency equipment operating characteristics, limitations, hazards, precautions, procedures and general care
- General emergency priorities and strategies
- Hazard analysis
- Hazards and the precautions necessary during control activities
- Survival, rescue and recovery procedures
- Tactics for safely handling emergencies involving dangerous goods
- Organisational emergency procedures

Required skills:

- Access and use PPE and clothing safely and effectively under emergency conditions
- Use communication skills during emergencies
- Care for protective clothing and equipment
- Re-stow response equipment

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment section in Section B of the accreditation submission.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of: • applying own responsibilities in line with company procedures

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- communicating understanding of own responsibility in control of various incidents until authorities arrive
- clearly describing an incident

Context of and specific resources for assessment

- Assessment must ensure access to:
  - relevant and appropriate materials and equipment to meet the performance criteria
  - applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended
- In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge
- Assessment processes and techniques must be appropriate to the language and literacy capacity of the candidate and the work being performed

Range Statement

RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Company procedures include:

- TERP
- standard operating procedures (SOP)
- emergency procedures guide (EPG)
- emergency information procedure (EIP)

Types of incidents include:

- recovery
- in depot
- on road
- at unloading point

Personal safety measures include:

- gloves
- safety headwear and footwear
- safety glasses
- two-way radios
- protective clothing
- high visibility clothing

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	• eye wash kit • emergency shutdown controls • evacuation controls
Key people and support agencies include:	• fire brigade/CFA • ambulance • government agencies
Evidence to be preserved or recorded includes:	• workplace documentation • load documentation • details of incident

Applicable legislative procedures and codes include:	• Australian code for the transport of dangerous goods by road or rail: the Australian Dangerous Goods (ADG) Code
	• relevant state and territory:
	  • roads and traffic authority driving regulations and licence or permit requirements pertaining to operating heavy vehicles on unsealed roads
	  • road rules
	  • OH&S legislation
	  • fatigue management regulations
	  • environmental protection legislation and regulations

Documentation and records include:	• transport regulations as they apply to the enterprise, including local authority regulations and procedures • workplace policies and procedures • relevant Australian standards and certification requirements • relevant internal data entry books, including log books, data sheets and load sheets • TERP

Unit Sector(s)

Not applicable.

Competency Field

F – Safety Management

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TLIF4007A Implement and coordinate accident-emergency procedures

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to implement and coordinate accident-emergency procedures, including responding to the incident, conducting on-site activities, and completing follow-up actions. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work must be carried out in compliance with the relevant regulations and workplace procedures concerning action to be taken in the event of an emergency, fire or accident.

Work is performed under some supervision generally within a team environment. It involves the application of the basic emergency response principles to the implementation of accident-emergency procedures including the provision of assistance ranging from simple injuries to the application of life support systems.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Respond to the incident	1.1 Details of incidents, accidents and emergencies are received, analysed and confirmed 1.2 Immediate coordination requirements are identified and actioned in accordance with organisation procedures 1.3 Travel to the incident site is by the shortest, fastest, legal means and routes
2 Coordinate on-site activities	2.1 Control of site activities is assumed on arrival and the operator and other authorities present are informed of this action 2.2 Assistance is provided to clients and operators within the limitations of duty of care and organisation requirements 2.3 Details of personnel, including names and nature of injuries, are notified to relevant personnel, following enterprise procedures 2.4 Assistance is provided to relevant authorities within legal and policy limitations
3 Complete follow-up actions	3.1 Details of affected personnel, including names, nature of injuries and follow-up treatments are notified to next-of-kin in accordance with organisation procedures 3.2 Incidents resulting in a near miss, accident or emergency are investigated and a report, including recommendations, is completed in accordance with enterprise policies and procedures 3.3 Accident procedures and emergency plans are reviewed for effectiveness and recommendations for changes are prepared and submitted to appropriate persons

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant OH&S and other regulatory codes, procedures and guidelines concerning response to accidents and emergencies
- Risks and hazards in the workplace and related precautions to control the risk
- Workplace procedures and policies for responding to accident/emergency situations
- Types of accidents and emergencies that can occur in a workplace and the appropriate action to be taken in each case
- Types of emergency equipment in the workplace and instructions for its use
- Site layout and obstacles
- Means to control and organise the accident scene, provide practical assistance and cooperate with others at the scene
- Focus of operation of work systems, equipment, management and site operating systems

Required skills:

- Communicate effectively with others when implementing and coordinating accident and emergency procedures
- Read and interpret instructions, procedures, information and signs relevant to the implementation and coordination of accident and emergency procedures
- Identify containers and goods coding, ADG and IMDG markings and where applicable emergency information panels
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to the implementation and coordination of accident and emergency procedures
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when implementing and coordinating accident and emergency procedures
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may arise when implementing and coordinating accident and emergency procedures in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unplanned events that may occur when implementing and coordinating accident and emergency procedures
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities

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Required skills:

- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Identify, select and use emergency equipment, processes and procedures
- Operate and adapt to differences in equipment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and

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EVIDENCE GUIDE

	operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Work may be conducted:	• in a range of work environments and weather conditions • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Action to be taken in the event of an accident-emergency may include:	• identifying and following established emergency procedures • assessing the nature and extent of the emergency • rendering assistance and first aid • isolating and coordinating safety of the scene • alerting relevant organisational personnel and emergency services • recording relevant information and reporting on accident/emergency situation in accordance with regulatory and workplace requirements
Emergency equipment may include:	• first aid kit • fire extinguishers • fire hose

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RANGE STATEMENT

	• fire blanket • resuscitation equipment
Hazards in the work area may include:	• exposure to chemicals • exposure to dangerous or hazardous substances • movements of equipment, goods and materials • accidents involving chemicals, toxic substances and other harmful substances • accidents involving equipment and vehicles • explosion and/or fire • personal accidents including lifting injuries • waste management and disposal • violent incidents such as armed robberies
Consultative processes may include:	• workplace personnel and management • designated workplace emergency officers • emergency services personnel including ambulance, police, fire services, etc. • union representatives • industrial relations and OH&S specialists • other professional or technical staff • site visitors • contractors • official representatives
Communication in the work area may include:	• phone • electronic data interchange • fax • email • internet • radio • oral, aural or signed communications
Personal protective equipment may include:	• gloves • safety headwear and footwear • safety glasses • two-way radios • high visibility clothing • breathing apparatus
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Information/documents may	• workplace emergency/fire/accident procedures

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RANGE STATEMENT

include:	• workplace procedures for the use of emergency equipment and personal protection equipment • first aid instructions and procedures • manufacturers instructions concerning the use and servicing of equipment • manifests, bar codes, goods and container identification goods identification numbers and codes • material safety data sheets • codes of practice including the Dangerous Goods Code • IMDG code markings, HAZCHEM codes and where applicable emergency information panels • relevant legislation, regulations and related documentation related to emergency response situations • award, enterprise bargaining agreement, other industrial arrangements • relevant Australian standards and certification requirements • quality assurance procedures • supplier and/or client advice on the hazards involved with goods or cargo
Applicable regulations and legislation may include:	• relevant state/territory OH&S legislation • relevant state/territory environmental protection legislation • emergency procedures regulations • dangerous goods and hazardous goods regulations • relevant Australian standards and certification including Australian Standard AS 2865 - Safe Working in a Confined Space Code • workplace relations regulations • workers compensation regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field F - Safety Management

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TLIF4065A Ensure compliance with Australian Dangerous Goods Code

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to ensure compliance with the current Australian Dangerous Goods Code (ADG code). It includes ensuring responsibilities for the handling and transport of dangerous goods are defined; managing performance and controlling risks; maintaining records; and evaluating effectiveness. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work may be undertaken in various contexts within the transport and distribution industry.

The unit generally applies to those who provide leadership of others individually or in teams.

This unit is normally packaged at AQF IV or above.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Ensure responsibilities for handling dangerous goods are defined	1.1 Responsibilities and duties for the transport and handling of dangerous goods are clearly defined, and allocated and included in job descriptions and duty statements for all relevant positions
	1.2 Any relevant licensing requirements for employees are confirmed
2 Manage performance and control risks	2.1 Ongoing system for the control of risks, based on a hierarchy of control is developed and integrated within general work procedures
	2.2 Measures to control assessed risks and monitor conformance are developed and implemented, in accordance with relevant dangerous goods transport regulations, code of practice and priorities identified in the workplace
	2.3 Non-conformance is investigated and procedures for rectification instituted
	2.4 Inadequacies in dangerous goods transport procedures are identified and measures are implemented to improve workplace practice
3 Maintain records	3.1 A dangerous goods records system is established in accordance with relevant legislative framework
	3.2 Accurate and legible records for operation within the workplace are completed in accordance with dangerous goods transport enterprise policies and legislative requirements
4 Evaluate effectiveness	4.1 Feedback about the effectiveness of the dangerous goods transport policies, procedures and programs is collected from the workgroup and provided to senior management
	4.2 Improvements to dangerous goods transport procedures are proposed to senior management

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant sections of national and state or territory regulatory requirements and codes of practice, including detailed knowledge and understanding of the Australian Dangerous Goods Code, the conditions and the employees to whom it applies
- Relevant OH&S and environmental procedures and regulations particularly as they overlap with the current ADG Code
- Operational procedures for safe transfer and storage of dangerous goods and hazardous materials
- Requirements for completing relevant documentation in line with requirements of the current ADG Code
- Code of practice for working collaboratively with others
- Procedures to be followed in the event of an emergency
- Procedures for managing and controlling hazardous situations when carrying out work activities

Required skills:

- Communicate effectively with others when completing work activities, particularly in order to ensure their understanding of the current ADG Code and their responsibilities in relation to it
- Read and interpret the current ADG Code, related documents and procedures, and information materials provided as guidance notes
- Complete documentation related to work activities
- Work collaboratively with others to ensure compliance and safety
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Implement contingency plans for unplanned events, particularly to deal with any potential breaches of the current ADG Code
- Recognise hazards and apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities and engage others in the process
- Modify activities depending on differing operational contingencies, risk situations and environments
- Monitor work activities of team members in terms of planned schedule
- Select and use required personal protective clothing and equipment conforming to industry and OH&S standards

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Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of:
  - complying with the applicable regulations and the current ADG Code
  - complying with the relevant and current documentation for compliance of the current ADG Code
  - demonstrating an understanding of the hierarchy of control
  - demonstrating the using of effective communication techniques to give clear and accurate information in a form which is preferred and understood by the receiver

Context of and specific resources for assessment

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
  - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
  - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
  - relevant and appropriate materials and equipment, and
  - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:

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EVIDENCE GUIDE

- through activities in an appropriately simulated environment at the registered training organisation, and/or
- in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Licensing requirements may include:	• specific licences to deal with named dangerous goods • specific licences or permits required by states, territories or regions to transport dangerous goods into or through their jurisdiction
Documentation and records may include:	• regulations and codes of practice relevant to the current ADG code, including safeworking and local authority regulations and procedures • relevant OH&S and environmental protection regulations • workplace policies and procedures related to the current ADG code • quality assurance procedures • emergency procedures • operations manuals, job specifications and induction documentation • technical instructions • dangerous goods declarations and material safety data sheets, where applicable • goods manifest • relevant Australian Standards and certification requirements
Applicable legislation and regulations may include:	• Australian and international regulations and codes of practice for the transport of dangerous goods and hazardous substances, specifically the ADG Code • relevant state/territory OH&S and environmental protection legislation • workplace relations regulations • equal opportunity legislation • equal employment opportunity and affirmative action

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RANGE STATEMENT

legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field F - Safety Management

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TLIF4066A Implement and supervise transport regulations compliance systems

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to implement and supervise transport regulations compliance systems. It includes identifying and interpreting relevant regulations; carrying out operations in a compliant manner; and reviewing operations in line with transport regulations. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work may be undertaken in various contexts within the transport and distribution industry.

The unit generally applies to those who provide leadership of others individually or in teams.

This unit is normally packaged at AQF IV or above.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Identify and interpret relevant regulations	1.1 Types of goods to be transported are correctly identified in accordance with workplace procedures and regulatory requirements 1.2 Sources of relevant state/territories transport regulations are identified 1.3 Information is accessed regarding state/territories transport regulations 1.4 Information is accurately interpreted 1.5 Responsibilities and duties according to state/territories regulations of the transport of goods are clearly identified
2 Carry out operations complying to transport regulations	2.1 Procedures for the transportation of goods are carried out in accordance with requirements for the type of goods 2.2 Activities are carried out according to industry regulations/guidelines, and OH&S, environmental and enterprise legislation, policies/procedures 2.3 Accurate and legible records for operation within the workplace are completed in accordance with transport regulations and enterprise policies and legislative requirements 2.4 Compliance with transport regulations and codes of practice are assessed to ensure legal requirements are maintained as a minimum and exceeded where possible
3 Review operations according to transport regulations	3.1 Improvements to transport procedures are identified 3.2 Improvements to the effectiveness of the transport regulations, policies, procedures and programs are suggested 3.3 Compliance with transport regulations is assessed and modifications made if required

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Relevant sections of transport regulations as they apply to the enterprise, including state or territory and national regulations
- Relevant OH&S and environmental procedures and regulations
- Procedures for operating electronic communications equipment
- Requirements for completing relevant documentation
- Code of practice for working collaboratively with others
- Typical defects that can occur and related action that should be taken
- Procedures for identifying equipment defects and assessing for appropriate action
- Steps involved in planning the work activities
- Procedures to be followed in the event of an emergency
- Procedures for managing and controlling hazardous situations when carrying out work activities

Required skills:

- Communicate effectively with others when completing work activities
- Read and interpret instructions, procedures, information and signs relevant to work activities, including the relevant parts of transport regulations, or related implementation materials
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to work activities
- Operate electronic communication equipment to required protocol
- Work collaboratively with others
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unplanned events, particularly any breaches, or threatened breaches of the relevant transport regulations
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
- Modify activities depending on differing operational contingencies, risk situations and environments
- Monitor work activities in terms of planned schedule
- Operate equipment in accordance with standard operating procedures

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Required skills:

- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Select and use required personal protective clothing and equipment conforming to industry and OH&S standards
- Monitor performance of equipment in terms of its potential effect on compliance

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation • As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests

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EVIDENCE GUIDE

- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or
  - in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Goods may include:	• livestock • perishables • dangerous goods • liquid • solids • non-perishable materials
Depending on the organisation concerned, workplace procedures may be called:	• standard operating procedures (SOPs) • company procedures • enterprise procedures • organisational procedures • established procedures
Communication in the work area may include:	• phone • electronic data interchange (EDI) • fax • email • internet • RF systems • oral, aural or signed communications
Consultative processes may involve:	• other employees and supervisors • relevant authorities and institutions • management and union representatives • industrial relations and OH&S specialists
Documentation and records may include:	• transport regulations as they apply to the enterprise, including local authority regulations and procedures • relevant OH&S and environmental protection regulations • workplace policies and procedures related to transport

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RANGE STATEMENT

	regulations • quality assurance procedures • emergency procedures • electrified territory regulations • dangerous goods declarations and material safety data sheets, where applicable • goods manifest • relevant Australian Standards and certification requirements
Applicable legislation and regulations may include:	• relevant transport regulations for the enterprise, including Australian and international regulations and codes of practice for the transport of dangerous goods and hazardous substances • relevant state/territory OH&S and environmental protection legislation • workplace relations regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field F - Safety Management

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TLIF4094A Ensure compliance with chain of responsibility

Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to ensure workplace compliance with chain of responsibility legislation.

It includes the ability to identify the requirements, undertake the appropriate activity, and monitor and review procedures.

Licensing, legislative, regulatory and certification requirements are applicable to this unit.

Application of the Unit

Work may be undertaken in various contexts within the transport and logistics industry.

The unit generally applies to people in a management level position in an organisation with responsibility for ensuring the entire organisation or work place is compliant with the relevant state or territory regulations around chain of responsibility.

Associated units relating to chain of responsibility can be found in TLI10 Transport and Logistics Training Package.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Understand chain of responsibility requirements	1.1 State or territory chain of responsibility regulations as they apply to the workplace and the organisation are identified 1.2 Impact of chain of responsibility requirements as they apply to all parties and responsible persons are analysed 1.3 Responsibilities of all parties and responsible persons are identified and explained to relevant persons
2 Undertake appropriate action to achieve compliance	2.1 Compliance requirements for individual job roles in the workplace or organisation relating to chain of responsibility are developed 2.2 Risk assessment is undertaken to guide the development of workplace chain of responsibility policy and procedures 2.3 Accurate records relating to chain of responsibility are completed and maintained
3 Monitor and review workplace policy and procedures	3.1 Workplace compliance with chain of responsibility is monitored and reviewed 3.2 Organisational records and information relevant to chain of responsibility are analysed and audited 3.3 Changes and amendments are made to organisational procedures to maintain chain of responsibility compliance

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- How to access and interpret relevant state and territory regulations
- State and territory regulations and workplace procedures relating to job function
- Range of penalties relevant to the workplace
- Consequences of non-compliance with chain of responsibility regulations
- Where to access updated chain of responsibility state or territory regulations
- Understanding of the five key aspects: load restraint, mass, dimensions, speed and fatigue management
- Required workplace documentation

Required skills:

- Use basic interpersonal and communication skills to ensure compliance within the workplace.
- Apply strategies to prevent breaches of chain of responsibility regulations
- Identify warning signs of a possible breach
- Take appropriate action when breach occurs
- Review updates to the chain of responsibility regulations as they occur
- Undertake an audit of organisational requirements for chain of responsibility
- Conduct risk assessment of organisational policy and procedures

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of: • an understanding of chain of responsibility • an understanding of regulations of state or territory in

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	which the company operates relating to chain of responsibility • establishing relevant workplace policy and procedures around chain of responsibility • conducting a risk assessment of organisational policy and procedure to ensure they meet current chain of responsibility regulations • maintaining and reviewing policy and procedures to ensure they meet current regulation around chain of responsibility

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment
	  • applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• As a minimum, assessment of knowledge must be conducted through appropriate assessments using written, practical and oral assessments
	• Practical assessment must occur:
	  • through appropriately simulated activities at the training organisation, and/or
	  • in an appropriate range of situations in the workplace
	• Online assessment is not suitable for final assessment of this unit of competency

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Parties and responsible persons within the chain may include:	• consigner • consignee

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	• packer • loader • scheduler • driver • receiver • carrier • manufacturer • employee • employer • owner • board of directors • senior official • dispatch officer • operator • person in charge or apparently in charge of a vehicle • agent • subcontractor • authorised officer • elected councillor
Customers may include:	• external customer • receiver • forwarder • dispatcher • yard foreman • safety regulator • police or enforcement official • public • subcontractor
Depending on the organisation concerned, workplace procedures may be called:	• standard operating procedures (SOPs) • company procedures • enterprise procedures • organisational procedures • established procedures
Communication in the work area may include:	• telephone • electronic data interchange (EDI) • fax • email • internet • oral, aural or signed communications
Documentation and records may include:	• transport regulations as they apply to the enterprise, including local authority regulations and procedures • relevant OH&S regulations

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Applicable legislation and regulations may include:	• workplace policies and procedures relating to chain of responsibility regulations • relevant Australian standards and certification requirements • relevant internal data entry books, including work diaries, data sheets and load sheets • transport and journey documentation • relevant transport regulations for the enterprise, including Australian and international regulations and codes of practice for the transport of dangerous goods and hazardous substances • relevant state and territory OH&S and environmental protection legislation • workplace relations regulations

Unit Sector(s)

Not applicable.

Competency Field

F – Safety Management

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TLIL4059A Implement asset management systems

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to implement asset management systems. It includes determining management control processes; implementing existing practices, procedures and systems; and reviewing service levels. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

Work may be undertaken in various contexts within the transport and logistics industry.

The unit generally applies to those who provide leadership of others individually or in teams and have responsibility for the implementation and monitoring of asset management systems.

This unit is normally packaged at AQF IV or above.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills

This unit contains employability skills.

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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Determine management control process	1.1 Roles and responsibilities of business units or departments are clarified to ensure effective management of assets in line with organisation policy and procedures
	1.2 Specific reporting and monitoring standards required by enterprise requirements are understood and complied with
	1.3 Information systems that provide the information necessary for effective and efficient asset management for all levels within the organisation are maintained
	1.4 Regular audits are arranged, where appropriate to the organisation, to establish a continuous improvement cycle
2 Implement existing practices, procedures and systems	2.1 Assessments of current status of asset management activities within business units or departments are conducted regularly in accordance with asset management plan
	2.2 Milestones and targets are adhered to by the groups responsible
	2.3 Areas of difficulty are identified and strategies are followed to overcome these difficulties
3 Review service levels	3.1 Current levels of service provided by asset stock are critically examined
	3.2 Areas of possible improvement in the effectiveness and efficiencies of owning and operating assets are identified in consultation with relevant personnel
	3.3 Appropriate benchmarking is undertaken to enable continuous improvement in asset management strategies and practices

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

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REQUIRED KNOWLEDGE AND SKILLS

Required knowledge:

- Relevant sections of national and state or territory regulatory requirements and codes of practice
- Code of practice for working collaboratively with others particularly with those involved in inputting data into asset management systems
- Requirements for completing relevant documentation including asset management reports
- Benchmarking practices
- Quality management principles and procedures
- Organisational and industry functions
- Detail of different approaches to asset management, including theoretical knowledge
- Characteristics of different types of information systems used to provide and assist in asset management
- Procedures for operating electronic communications equipment
- Procedures for identifying equipment defects and assessing for appropriate action

Required skills:

- Communicate effectively with others when implementing asset management systems
- Consult and liaise as required when working with a team of staff
- Manage team and encourage team participation
- Use critical analysis in order to determine the best approach to asset management for the enterprise
- Use lateral thinking in order to solve problems as they arise, or to generate ideas
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to work activities and convey reports to senior management
- Operate electronic communication equipment to required protocol
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

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EVIDENCE GUIDE

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
	  • the underpinning knowledge and skills
	  • relevant legislation and workplace procedures
	  • other relevant aspects of the range statement

Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts
	• Resources for assessment include:
	  • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
	  • access to an appropriate range of relevant operational situations in the workplace
	• In both real and simulated environments, access is required to:
	  • relevant and appropriate materials and equipment, and
	  • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation
	• As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
	• Practical assessment must occur:
	  • through activities in an appropriately simulated environment at the registered training organisation, and/or
	  • in an appropriate range of situations in the workplace

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Asset management activities may	• introduction of information systems

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RANGE STATEMENT

include:	• data capture program • studies
Areas of possible improvement may include:	• spot checks • number of assets • complexity of assets, including their sophistication and issues involved • age of the asset base • quality of the assets constructed • levels of service provided or demanded
Regular audits may include:	• internal • external
Assets may include:	• equipment • buildings • employees • enterprise relationships
Depending on the organisation concerned, workplace procedures may be called:	• standard operating procedures (SOPs) • company procedures • enterprise procedures • organisational procedures • established procedures
Communication in the work area may include:	• phone • electronic data interchange (EDI) • fax • email • internet • RF systems • oral, aural or signed communications
Consultative processes may involve:	• other employees and supervisors • relevant authorities and institutions • management and union representatives • industrial relations and OH&S specialists
Documentation and records may include:	• reports of assets held and their status • relevant OH&S and environmental protection regulations • quality assurance procedures • emergency procedures • technical instructions • relevant Australian Standards and certification requirements
Applicable legislation and	• relevant national, state/territory legislation, including OH&S and environmental protection requirements

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RANGE STATEMENT

regulations may include:	• workplace relations regulations

Unit Sector(s)

Not Applicable

Competency Field

Competency Field L - Resource Management

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TLILIC0012A Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required to operate a vehicle loading crane with a capacity of 10 metre tonnes or more, mounted on a vehicle for the principle purpose of loading and unloading such a vehicle, including the application of load estimation and slinging techniques to move a load, for licensing purposes.

Application of the Unit

Application of the Unit	This unit requires the operator to plan the work, conduct routine checks, set up crane, transfer loads and shut down and secure crane. This unit is based on the requirements of the National Standard for Licensing Persons Performing High Risk Work. This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency	*Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan work	1.1 Potential workplace ***hazards*** are identified 1.2 ***Hazard control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment 1.3 The weight of the load is identified and estimated in consultation with ***associated personnel*** (where applicable) 1.4 Suitable lifting points on the load are identified in consultation with ***associated personnel*** 1.5 Appropriate ***lifting equipment*** is obtained following consultation with ***associated personnel*** 1.6 ***Crane*** is ***appropriate*** to the load/s and workplace conditions 1.7 Appropriate paths for the movement of loads in the work area are inspected and determined 1.8 Appropriate ***communication methods*** are identified with ***associated personnel***
2. Conduct routine checks	2.1 ***Crane*** is visually checked for any damage or defects 2.2 All ***signage and labels*** are visible and legible according to the ***appropriate standard***. 2.3 Routine pre-operational crane checks are carried out according to ***procedures***

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ELEMENT	PERFORMANCE CRITERIA
	2.4 All ***controls*** are located and identified 2.5 Crane ***service logbook*** is checked for compliance 2.6 ***Crane*** is started according to ***procedures*** and checked for any abnormal noises 2.7 All crane ***safety devices*** are tested according to ***procedures*** 2.8 Post-start operational checks are carried out according to ***procedures*** 2.9 All ***communication equipment*** is checked for serviceability 2.10 All damage and defects are reported and recorded according to ***procedures***, and appropriate action is taken
3. Set up crane	3.1 ***Ground suitability*** is checked 3.2 ***Crane*** is driven to the work area according to ***procedures*** 3.3 ***Crane*** is positioned for work application and ***stability*** according to ***procedures*** 3.4 Boom/jib and configuration data is input into the crane computer (as required) 3.5 Appropriate ***hazard prevention***/***control measures*** are applied to the work area according to ***procedures*** 3.6 All ***communications equipment*** is tested for functionality 3.7 ***Lifting equipment*** is prepared for load according to ***procedures*** 3.8 ***Load destination*** is prepared
4. Transfer loads	4.1 Loads are determined within the capacity of the crane 4.2 Boom/jib and hoist block is positioned over load following directions from ***associated personnel*** 4.3 ***Lifting equipment*** is attached and secured using ***defined techniques*** according to ***procedures*** 4.4 ***Test lift*** is carried out according to ***procedures*** 4.5 Loads are transferred using all ***relevant crane movements*** according to ***procedures*** and the ***appropriate standard*** 4.6 All required ***communication signals*** are correctly interpreted according to ***procedures*** and the ***appropriate standard***

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ELEMENT	PERFORMANCE CRITERIA
	4.7 The load is landed ensuring stability and security from movement 4.8 ***Lifting equipment*** is removed or disconnected from load and/or lifting hook according to ***procedures*** (where applicable) 4.9 ***Crane*** is operated according to ***procedures*** 4.10 Load movement is monitored constantly ensuring safety to personnel and load, and crane stability 4.11 ***Unplanned and/or unsafe*** situations are responded to in line with ***procedures***
5. Shut down and secure crane	5.1 ***Crane*** boom/jib and equipment are stowed and secured according to ***procedures*** and the ***appropriate standard*** 5.2 Relevant motion locks and brakes are applied (where applicable) 5.3 Outriggers/stabilisers are stowed and secured according to ***procedures*** 5.4 Plates or packing are stowed and secured. 5.5 ***Crane*** is ***shut down*** according to ***procedures*** 5.6 Routine post-operational crane checks are carried out according to ***procedures*** 5.7 ***Lifting equipment*** is stored according to ***procedures*** and the ***appropriate standards*** 5.8 All damage and defects are reported and recorded according to ***procedures***, and appropriate action is taken

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level required for this unit.
Required skills:
• Accurately record and maintain information relating to crane operations • Use communication techniques in the workplace including hand signals, whistles and two-way radios • Use interpersonal communication skills at a level sufficient to communicate with

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REQUIRED SKILLS AND KNOWLEDGE
other site personnel • Operate crane including all functions to their maximum extension in the loading and unloading of loads to the safe working rated capacity of the crane, in conjunction with other associated personnel • Use of lifting equipment and basic slinging techniques suitable for the loads to be loaded/unloaded as defined by workplace procedures • Apply risk assessment and hazard control strategies, including hierarchy of control as applied to the positioning and safe operation of the vehicle loading crane (particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions and vehicle tipping) • Use and interpret crane manufacturer's specifications and data, including load charts to enable the vehicle loading crane to be configured for the load • Verify problems and equipment faults and demonstrate appropriate response procedures
Required knowledge:
• Appropriate mathematical procedures for estimation of loads • Assessment of ground conditions to confirm that the site is suitable (e.g. firm, level and safe) to operate the crane • Awareness of the boom/jib movements and particularly the safe positioning of the operator for any lift • Commonwealth, state or territory OH&S legislation, standards and codes of practice relevant to the full range of processes for the crane class • Use of lifting equipment and basic slinging techniques suitable for the loads to be loaded/unloaded as defined by workplace procedures • Understanding of the hierarchy of hazard identification and control • Level of literacy to be able to read and comprehend manufacturer's instructions, procedures and safety signs • Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class • Procedures for the recording, reporting and maintenance of workplace records and information • Typical routine problems encountered in the process and with equipment and adjustments required for correction • Crane characteristics and capabilities to allow the configuration of the crane to suit the range of loads

Evidence Guide

EVIDENCE GUIDE

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EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for the Training Package.	
Overview of assessment	• Successful assessment of this unit meets the competency requirement of the National Standard for Licensing Persons Performing High Risk Work. • State/territory OH&S regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body responsible for OH&S matters.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Compliance with OH&S licensing legislation. • Communicate and work safely with others in the work area. • Assessment of ground conditions to confirm that the site is suitable (e.g. firm, level and safe) to operate the vehicle loading crane. • Risk assessment and hazard control strategies, including hierarchy of control as applied to the positioning and safe operation of the vehicle loading crane (particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions, wind, pedestrians and tipping). • Set up, position stabilise and operate a vehicle loading crane including all functions to their maximum extension in the loading and unloading of loads to the safe working rated capacity. • Move loads from the vehicle to the ground and/or ground to the vehicle as described in the endorsed assessment tool. • Appropriate mathematical procedures for estimation of loads. • Use of lifting equipment and basic slinging techniques suitable for the loads to be loaded/unloaded as defined in the workplace procedures. • Awareness of the boom/jib movements and particularly the safe positioning of the operator for any lift.
Context of and specific resources for assessment	• Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the endorsed Assessment Instrument. • Assessment of performance must be undertaken

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EVIDENCE GUIDE	

	either in the workplace or in a realistically simulated workplace setting.
	• Assessors must ensure that the assessment in the workplace is organised to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace.
	• Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints.
	• Assessment is to comply with appropriate standard requirements.
	• Applicants must have access to:
	  • Personal Protective Equipment (PPE) for the purpose of the Performance Assessment
	  • appropriate vehicle loading crane (10 metre tonne or more) and associated equipment in safe condition
	  • appropriate lifting gear in safe condition
	  • Suitable loads as specified by the endorsed Assessment Instrument
	  • communication equipment (e.g. two-way radios, whistles, etc.)
	  • other associated personnel to sling and direct the loads.

Method of assessment	• Assessment must be conducted using the endorsed Assessment Instruments. These Instruments provide advice on their application. • The use of '**simulators**' in the assessment of this unit of competency is **not acceptable**. • Assessment may be in conjunction with the assessment of other units of competency. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
Guidance information for assessment	• Further information about endorsed Assessment Instruments may be obtained from state/territory OH&S regulators.

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Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.	
Hazards	May include but not limited to: • ground stability (e.g. ground condition, recently filled trenches, slopes) • overhead hazards (e.g. powerlines, service pipes) • traffic (e.g. pedestrians, vehicles, other plant) • Insufficient lighting • environmental conditions (e.g. wind, lightning, storms, etc.) • positioning of crane operator • other specific hazards (e.g. dangerous materials)
Hazard control measures	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls It includes the application of the hierarchy of control, the six-step preference of control measures to manage and control risk: 1 elimination 2 substitution 3 isolation 4 engineering control measures 5 using safe work practices 6 personal protective equipment
Appropriate standards	May include but not limited to: • codes of practice • legislation • Australian standards especially AS2550.1 - 2002 (6.5) • manufacturer's specifications • industry standards
Associated personnel	May include but not limited to: • doggers

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RANGE STATEMENT	
	• riggers
Lifting equipment	May include but not be limited to: • chain slings • wire and synthetic slings • shackles • eyebolts
Crane	A crane with a capacity of 10 metre tonnes and above mounted on a vehicle for the principle purpose of loading and unloading such a vehicle
Appropriate	May include but not limited to: • crane capabilities • environmental conditions (e.g. wind, lightning, storms, etc.)
Communication method	May include but not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol
Signage and labels	May include but not limited to: • crane data plates/labels • load charts • crane decals • control labels
Procedures	May include but not limited to: • manufacturer's guidelines (instructions, specifications or checklists) • industry operating procedures • workplace procedures (work instructions, operating procedures, checklists)
Controls	May include but not limited to: • luffing levers • knuckling levers • hoisting and lowering levers

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RANGE STATEMENT	
	• slewing levers including brake • boom extension levers (where fitted)
Service logbook	May include but not limited to: • any logbook • service book • history record system where the service and maintenance history is kept
Crane safety devices	May include but not limited to: • horns/sirens • audible and visual warning devices • lights
Communication equipment	May include but not limited to: • fixed frequency two-way radios • whistles
Ground suitability	May include but not limited to: • rough uneven ground • backfilled ground • soft soils • hard compacted soil • rock • bitumen • concrete
Stability	May include but not limited to: • deploying outriggers • establishing correct size plates or packing • correctly positioning plates or packing
Hazard prevention/control measures	May include but not limited to: • safety tags on electrical switches/isolators • insulated powerlines • safety observer used inside exclusion zone • disconnected power • traffic barricades and controls • pedestrian controls • trench covers • movement of obstructions • personal protective equipment

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RANGE STATEMENT	
	• adequate illumination
Load destination	May include but not limited to: • ground • vehicles
Defined techniques	May include but not limited to: • fixed lifting points • basic reeved slings
Test lift	The load is lifted just clear of the lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure that: • near capacity loads do not overload the crane • loads of unusual shape or weight distribution are correctly slung • load measuring equipment can be used to verify the calculated weight of the load • all equipment is functioning properly • adjustments to the slinging can be made in a safe manner
Relevant crane movements	May include but not limited to: • luffing • slewing • knuckling • telescoping • raise and lower hoist
Communication signals	May include but not limited to: • stop - hand • stop - whistle • hoist up - hand • hoist up - whistle • hoist down - hand • hoist down - whistle • luff boom down - hand • luff boom down - whistle • luff boom up - hand • luff boom up - whistle • telescope out - hand • telescope out - whistle

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RANGE STATEMENT	
	• telescope in - hand • telescope in - whistle
Unplanned and/or unsafe situations	May include but not limited to: • failure/loss of control (e.g. brakes and steering) • failure of equipment (e.g. hydraulic system) • environmental conditions (e.g. wind, lightning, storms, etc.)
Shut down	May include but not limited to: • retracting boom/jib (where applicable) • retracting hoist rope and hook block • folding boom/jib into the transport position • retracting outriggers/stabilisers • idling engine to stabilise temperature • turning off engine (where applicable) • removing key from ignition (where applicable) • locking and securing cabin (where applicable) • securing crane for travel

Unit Sector(s)

Not Applicable

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TLILIC2001A Licence to operate a forklift truck

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required for the operation of a powered industrial truck equipped with a mast and an elevating load carriage to which is attached a pair of fork arms or other attachment, for licensing purposes. This definition also includes a truck on which the operator is raised with the attachment for order-picking.

Application of the Unit

Application of the Unit	THIS UNIT REQUIRES THE OPERATOR TO BE ABLE PLAN THE WORK, CONDUCT ROUTINE CHECKS ON THE FORKLIFT, SHIFT LOADS IN A SAFE MANNER, AND SHUT DOWN AND SECURE THE EQUIPMENT AFTER THE COMPLETION OF OPERATIONS. This unit is based on the National Standard for Licensing Persons Performing High Risk Work. This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT *Elements describe the essential outcomes of a unit of competency.*	**PERFORMANCE CRITERIA** *Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.*
1. Plan work	1.1 Potential workplace ***hazards*** are identified 1.2 ***Hazard control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment 1.3 Appropriate ***forklift*** truck is selected according to the load and workplace conditions 1.4 Working area is inspected to determine appropriate path of movement for loads and forklift truck 1.5 ***Communication methods*** are identified according to ***procedures***
2. Conduct routine checks	2.1 Forklift is visually checked for any damage or defects 2.2 All ***signage and labels*** are visible and legible according to the ***appropriate standard*** 2.3 All controls are located and identified 2.4 ***Pre-start operational checks*** are carried out according to ***procedures*** 2.5 ***Forklift*** is started according to ***procedures*** and checked for any abnormal noise 2.6 ***Post-start operational checks*** are carried out according to ***procedures*** 2.7 All forklift functions and safety devices are tested to their maximum according to ***procedures***

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	2.8 Defects and damage are reported and recorded according to ***procedures***, and appropriate action is taken
3. Shift load	3.1 The weight of load is assessed to ensure compliance with ***forklift*** truck data plate specifications 3.2 Appropriate ***hazard prevention***/***control measures*** are implemented and communicated with personnel in the work area 3.3 ***Forklift*** is operated at a safe speed and according to ***procedures*** 3.4 Loads are moved and placed to ensure stability of material and avoidance of hazards 3.5 Load movement is monitored constantly ensuring safety to personnel and load, and structural stability 3.6 ***Unplanned and***/***or unsafe situations*** are responded to in line with ***procedures***
4. Shut down and secure forklift truck	4.1 ***Forklift*** truck is parked to avoid hazards 4.2 Forklift is ***shut down*** according to ***procedures*** 4.3 Routine post-operational forklift checks are carried out according to ***procedures*** 4.4 Forklift is secured to prevent unauthorised access/use 4.5 All defects and damage are reported and recorded according to ***procedures***, and appropriate action is taken

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level required for this unit.
Required skills:
• Accurately interpret information relating to conducting forklift truck operations (e.g. procedures) • Safely conduct forklift truck operations including all functions to the maximum height and load capacity • Identify hazards associated with the operation of the forklift truck, assess risks and put into place effective hazard prevention/control measures for those hazards identified • Use communication skills at a level sufficient to communicate with other site personnel (e.g. receive and interpret work instructions, safety information, emergency procedures)

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REQUIRED SKILLS AND KNOWLEDGE
• Drive forklift with load in forward and reverse, maintaining visibility • Verify problems and equipment faults and demonstrate appropriate response procedures
Required knowledge:
• Methodology of determining the weight of a load • Commonwealth, state or territory OH&S legislation, standards relevant to the safe operation for the forklift trucks • Understanding of forklift characteristics and capabilities (including use of load data plates) • Understanding of the hierarchy of hazard identification and control • Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class • Procedures for the recording, reporting and maintenance of workplace records and information • Forklift truck operations and safe operating techniques • Typical routine problems encountered in the operation of the crane and equipment and adjustments required for correction

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for the Training Package.	
Overview of assessment	• Successful assessment of this unit meets the competency requirement of the National Standard for Licensing Persons Performing High Risk Work. • State/territory OH&S regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body responsible for OH&S matters.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Compliance with OH&S licensing legislation. • Communicate and work safely with others in the work area. • Identify hazards associated with the operation of the forklift truck and put in place effective hazard controls for those hazards identified.

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EVIDENCE GUIDE	
	• Conduct pre-start-up, operational, moving loads and shut down and secure checks of the forklift truck according to procedures. • Operate the forklift truck and move loads safely, including driving and manoeuvring, picking up and placing of loads at various stack heights. • Drive forklift truck with load in forward and reverse, maintaining visibility.

Context of and specific resources for assessment	• Assessment of the safe application of knowledge and skills to workplace tasks (performance) must be undertaken using the endorsed Assessment Instrument.
	• Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting.
	• Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints.
	• Applicants must have access to:
	  • Personal Protective Equipment (PPE) for the purpose of the Performance Assessment
	  • associated equipment appropriate to forklift truck operations
	  • suitable loads as described by the endorsed Assessment Instrument
	  • manufacturers specifications
	  • appropriate forklift truck in a safe condition.

Method of assessment	• Assessment must be conducted using the endorsed Assessment Instrument. These Instruments provide instruction on their application. • The use of '**simulators**' in the assessment of this unit of competency is **not acceptable**. • Assessment may be in conjunction with the assessment of other units of competency. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
Guidance information for	• Further information about endorsed Assessment Instruments may be obtained from state/territory

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EVIDENCE GUIDE	
assessment	OH&S regulators.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.	
Hazards	May include but not limited to: • ground conditions (e.g. condition of pavement, slopes) • overhead hazards (e.g. powerlines, service pipes) • insufficient lighting • traffic (e.g. pedestrians, vehicles, other plant) • weather (e.g. wind, lightning, rain) • forklift instability (e.g. overloading, poor load placement, irregular loads) • other hazards (e.g. dangerous materials)
Hazard control measures	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls It includes the application of the hierarchy of control, the six-step preference of control measures to manage and control risk: 1 elimination 2 substitution 3 isolation 4 engineering control measures 5 using safe work practices 6 personal protective equipment
Appropriate standards	May include but not limited to: • legislation • Australian standards • manufacturer's specifications • industry standards (where applicable)

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RANGE STATEMENT	
Forklift truck	May include but not be limited to: • counterbalanced • reach trucks • rough terrain • internal combustion petrol, diesel, gas • electric
Communications methods	May include but not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol
Procedures	May include but not limited to: • manufacturer's guidelines (instructions, specifications or checklists) • industry operating procedures • workplace procedures (work instructions, operating procedures, checklists)
Pre-start operational checks	May include but not limited to: • safety devices fitted where appropriate • forklift data plate fitted and interpreted • logbook, handbook or operating manuals available • external visual check including, evidence of damage, leaks, visual evidence of structural weaknesses (including paint separation or stressed welds) is carried out • forklift attachment is checked for security • approved modifications and/or attachments fitted to manufacturer's specifications (e.g. as per forklift or attachment data plate) are identified • checks for adaptations or modifications outside manufacturer's specifications (e.g. not listed on the forklift or attachment data plate) are carried out • maintenance logbook/records checked

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RANGE STATEMENT	
Post-start operational checks	May include checks of the forklift truck and equipment after start-up to ensure: • hazard warning systems (for example lights and horns), are functional • attachment movements and control functions are smooth and comply with operating requirements • steering, transmission and brake functions comply with operating requirements
Hazard prevention/control measures	May include but not limited to: • barricades and traffic control • safety tags on electrical switches/isolators • insulated powerlines • safety observer used inside exclusion zone • disconnected power • pedestrian control (barricades, signs, etc.) • excavation safeguards • movement of obstructions • personal protective equipment • adequate illumination
Unplanned and/or unsafe situations	May include but not limited: • failure/loss of control (e.g. brakes and steering) • failure of equipment (e.g. hydraulic system) • environmental condition
Shut down	May include, but is not limited to: • parking in a suitable location away from dangerous areas • fork arms are correctly positioned (tips down, tilted forward, lowered to ground) • appropriate transmission/gear is selected for parking (relevant to transmission type) • hand/parking brake is applied • engine power is turned off • ignition key is removed (if applicable) • LPG gas cylinder valve is shut off (where fitted) • securing equipment against unauthorised operation • securing the site • ensuring access ways are clear • identifying and segregating defective equipment

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RANGE STATEMENT	
	and reporting to authorised personnel • batteries are connected to the charger (if applicable)

Unit Sector(s)

Not Applicable

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TLILIC2014B Licence to drive a light rigid vehicle

Modification History

New release. THis unit replaces and is equivalent to TLILIC2014A.

Unit Descriptor

This unit involves the skills and knowledge required to obtain a licence to drive a light rigid vehicle. It includes systematically and efficiently controlling all vehicle functions, monitoring traffic and road conditions, managing vehicle condition and performance, and effectively managing hazardous situations.

Assessment of this unit will be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory driver licensing authority.

Application of the Unit

This unit applies to driving that is carried out in compliance with the licence requirements and regulations of the relevant state/territory driver licensing authority pertaining to light rigid vehicles.

Driving is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain safety and operate a light rigid vehicle across a variety of driving contexts.

The primary legislative requirements applicable to this unit of competency are state/territory legislation in relation to road use and driver licensing.

This unit addresses the knowledge and skills necessary for the granting of a Light Rigid Driver Licence.

Being awarded this unit of competency is a necessary requirement to obtain a Light Rigid Driver Licence but is only one of several criteria. Prospective licence applicants should check with the state/territory driver licensing authority for other criteria (such as licence tenure and medical fitness) to confirm compliance with other eligibility requirements before undertaking training and/or assessment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	**Drive a light rigid vehicle**	1.1 Light rigid vehicle is started, steered, manoeuvred, positioned and stopped according to traffic regulations, manufacturer instructions and relevant vehicle handling procedures
		1.2 Engine power is managed to ensure efficiency and performance, and to minimise engine and transmission damage
		1.3 Braking system of light rigid vehicle is managed and operated efficiently to ensure effective control of vehicle under all conditions
		1.4 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
		1.5 Light rigid vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
		1.6 Light rigid vehicle is parked, shutdown and safely secured according to traffic regulations
		1.7 Load is safely and effectively restrained
2	**Monitor traffic and road conditions**	2.1 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and to ensure no injury to people or damage to property, equipment, loads and facilities
		2.2 Interaction with other road users is conducted courteously according to road rules to ensure safe and efficient traffic flow
3	**Monitor and maintain vehicle performance**	3.1 Vehicle performance is maintained through pre-operational inspections and vehicle checks
		3.2 Appropriate signage, lights and equipment are checked for operational effectiveness and for conformity to prescribed traffic regulations

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Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Driving hazards and related defensive driving techniques
- Efficient driving techniques
- Engine power management and safe driving strategies
- Light rigid vehicle controls, instruments and indicators and their use
- Light rigid vehicle handling procedures
- Pre-operational checks carried out on vehicle and related action
- Relevant state/territory driver licensing authority road rules, regulations, permit and licence requirements

Required skills:

- Anticipate and monitor and traffic hazards and take appropriate action
- Apply precautions and required action to eliminate, minimise or control hazards that may exist when driving a light rigid vehicle
- Carry out pre-operational vehicle checks
- Communicate effectively with others when driving a light rigid vehicle
- Read and interpret instructions, procedures, information and signs relevant to driving a light rigid vehicle

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include: • applying relevant procedures that reflect legislative requirements • negotiating a range of complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings).

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Context of and specific resources for assessment	Resources for assessment include access to: • range of relevant exercises, case studies and/or other simulated practical and knowledge assessment • appropriate range of relevant on-road operational situations or in the workplace • relevant and appropriate materials and equipment • applicable documentation such as workplace procedures, regulations, codes of practice and operation manuals.
Method of assessment	Practical driving aspects must be assessed in a vehicle typical of the class as approved by the state/territory driver licensing authority. The use of simulators for driver testing is not permitted. The assessor must use the mandatory assessment tool provided by the state/territory driver licensing authority to conduct the assessment for this unit according to licensing authority requirements. The state/territory driver licensing authority may prescribe approved routes, which must be used for the final assessment.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Light rigid vehicle includes:	• Rigid truck above 4.5 tonnes GVM but less than or equal to 8 tonnes GVM • Rigid bus with less than or equal to 8 tonnes GVM or seats more than 12 adults, including driver
Vehicle handling procedures may include:	• Accelerating and braking • Managing engine performance • Operating vehicle controls, instruments and indicators • Positioning and stopping a vehicle • Reversing a vehicle • Starting a vehicle • Steering and manoeuvring a vehicle • Using defensive driving techniques
Driving hazards may include:	• Animals and objects on road • Faulty: • brakes • steering mechanism on vehicle • Fire in vehicle

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	• Flooded sections of road • Foggy conditions • Leaking fuel • Oil on road • Parked vehicles on road • Pedestrians crossing road • Wet and iced roads • Windy sections of road
Traffic and road conditions may include:	• Negotiating a range of more complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings) • On open or private roads including roads with moderate inclines and declines • Operations conducted during the day or night • Typical weather conditions • While at a depot, base or warehouse • While at a client workplace or work site

Pre-operational inspections and equipment checks may include:	• Checking and topping up fluid levels
	• Checking:
	  • brakes
	  • operation of vehicle lights and indicators
	  • tyre pressures
	• Visually checking vehicle

Unit Sector(s)

Not applicable.

Competency Field

LIC - Licensing

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TLILIC2015B Licence to drive a medium rigid vehicle

Modification History

NEw release. THis unit replaces and is equivalent to TLILIC2015A.

Unit Descriptor

This unit involves the skills and knowledge required to obtain a licence to drive a medium rigid vehicle. It includes systematically and efficiently controlling all vehicle functions, monitoring traffic and road conditions, managing vehicle condition and performance, and effectively managing hazardous situations.

Assessment of this unit will be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory driver licensing authority.

Application of the Unit

This unit applies to driving that is carried out in compliance with the licence requirements and regulations of the relevant state/territory driver licensing authority pertaining to medium rigid vehicles.

Driving is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain safety and operate a medium rigid vehicle across a variety of driving contexts.

The primary legislative requirements applicable to this unit of competency are state/territory legislation in relation to road use and driver licensing.

This unit addresses the knowledge and skills necessary for the granting of a Medium Rigid Driver Licence.

Being awarded this unit of competency is a necessary requirement to obtain a Medium Rigid Driver Licence but is only one of several criteria. Prospective licence applicants should check with the state/territory driver licensing authority for other criteria (such as licence tenure and medical fitness) to confirm compliance with other eligibility requirements before undertaking training and/or assessment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1 Drive a medium rigid vehicle	1.1	Medium rigid vehicle is started, steered, manoeuvred, positioned and stopped according to traffic regulations, manufacturer instructions and relevant vehicle handling procedures
	1.2	Engine power is managed to ensure efficiency and performance, and to minimise engine and transmission damage
	1.3	Braking system of medium rigid vehicle is managed and operated efficiently to ensure effective control of vehicle under all conditions
	1.4	Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
	1.5	Medium rigid vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
	1.6	Medium rigid vehicle is parked, shutdown and safely secured according to traffic regulations
	1.7	Load is safely and effectively restrained
2 Monitor traffic and road conditions	2.1	Traffic and road conditions are constantly monitored and acted upon to enable safe operation and ensure no injury to people or damage to property, equipment, loads and facilities
	2.2	Interaction with other road users is conducted courteously according to road rules to ensure safe and efficient traffic flow
3 Monitor and maintain vehicle performance	3.1	Vehicle performance is maintained through pre-operational inspections and vehicle checks
	3.2	Appropriate signage, lights and equipment are checked for operational effectiveness and for conformity to prescribed traffic regulations

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Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Driving hazards and related defensive driving techniques
- Efficient driving techniques
- Engine power management and safe driving strategies
- Medium rigid vehicle controls, instruments and indicators and their use
- Medium rigid vehicle handling procedures
- Pre-operational checks carried out on vehicle and related action
- Relevant state/territory driver licensing authority road rules, regulations, permit and licence requirements

Required skills:

- Anticipate and monitor and traffic hazards and take appropriate action
- Apply precautions and required action to eliminate, minimise or control hazards that may exist when driving a medium rigid vehicle
- Carry out pre-operational vehicle checks
- Communicate effectively with others when driving a medium rigid vehicle
- Read and interpret instructions, procedures, information and signs relevant to driving a medium rigid vehicle

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include: • applying relevant procedures that reflect legislative requirements • negotiating a range of complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings).

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Context of and specific resources for assessment	Resources for assessment include access to: • range of relevant exercises, case studies and/or other simulated practical and knowledge assessment • appropriate range of relevant on-road operational situations or in the workplace • relevant and appropriate materials and equipment • applicable documentation such as workplace procedures, regulations, codes of practice and operation manuals.
Method of assessment	Practical driving aspects must be assessed in a vehicle typical of the class as approved by the state/territory driver licensing authority. The use of simulators for driver testing is not permitted. The assessor must use the mandatory assessment tool provided by the state/territory driver licensing authority to conduct the assessment for this unit according to licensing authority requirements. The state/territory driver licensing authority may prescribe approved routes, which must be used for the final assessment.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Medium rigid vehicle includes:	• Two axle rigid truck, not being a prime mover, above 8 tonnes GVM • Two axle bus above 8 tonnes GVM
Vehicle handling procedures may include:	• Accelerating and braking • Managing engine performance • Operating vehicle controls, instruments and indicators • Positioning and stopping a vehicle • Reversing a vehicle • Starting a vehicle • Steering and manoeuvring a vehicle • Using defensive driving techniques
Driving hazards may include:	• Animals and objects on road • Faulty: • brakes • steering mechanism on vehicle • Fire in vehicle • Flooded sections of road

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	• Foggy conditions • Leaking fuel • Oil on road • Parked vehicles on road • Pedestrians crossing road • Wet and iced roads • Windy sections of road
Traffic and road conditions may include:	• Negotiating a range of more complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railwaylevel crossings) • On open or private roads including roads with moderate inclines and declines • Operations conducted during the day or night • Typical weather conditions • While at a depot, base or warehouse • While at a client workplace or work site

Pre-operational inspections and equipment checks may include:	• Checking and topping up fluid levels
	• Checking:
	  • brakes
	  • operation of vehicle lights and indicators
	  • tyre pressures
	• Visually checking vehicle

Unit Sector(s)

Not applicable.

Competency Field

LIC - Licensing

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TLILIC2016B Licence to drive a heavy rigid vehicle

Modification History

New release. This unit replaces and is equivalent to TLILIC2016A.

Unit Descriptor

This unit involves the skills and knowledge required to obtain a licence to drive a heavy rigid vehicle. It includes systematically and efficiently controlling all vehicle functions, monitoring traffic and road conditions, managing vehicle condition and performance, and effectively managing hazardous situations.

Assessment of this unit will be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory driver licensing authority.

Application of the Unit

This unit applies to driving that is carried out in compliance with the licence requirements and regulations of the relevant state/territory driver licensing authority pertaining to heavy rigid vehicles.

Driving is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain safety and operate a heavy rigid vehicle across a variety of driving contexts.

The primary legislative requirements applicable to this unit of competency are state/territory legislation in relation to road use and driver licensing.

This unit addresses the knowledge and skills necessary for the granting of a Heavy Rigid Driver Licence.

Being awarded this unit of competency is a necessary requirement to obtain a Heavy Rigid Driver Licence but is only one of several criteria. Prospective licence applicants should check with the state/territory driver licensing authority for other criteria (such as licence tenure and medical fitness) to confirm compliance with other eligibility requirements before undertaking training and/or assessment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	**Drive a heavy rigid vehicle**	1.1 Heavy rigid vehicle is started, steered, manoeuvred, positioned and stopped according to traffic regulations, manufacturer instructions and relevant vehicle handling procedures
		1.2 Engine power is managed to ensure efficiency and performance, and to minimise engine and gear damage
		1.3 Braking system of heavy rigid vehicle is managed and operated efficiently to ensure effective control of vehicle under all conditions
		1.4 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
		1.5 Heavy rigid vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
		1.6 Heavy rigid vehicle is parked, shutdown and safely secured according to traffic regulations
		1.7 Load is safely and effectively restrained
2	**Monitor traffic and road conditions**	2.1 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and to ensure no injury to people or damage to property, equipment, loads and facilities
		2.2 Interaction with other road users is conducted courteously according to road rules to ensure safe and efficient traffic flow
3	**Monitor and maintain vehicle performance**	3.1 Vehicle performance is maintained through pre-operational inspections and vehicle checks
		3.2 Appropriate signage, lights and equipment are checked for operational effectiveness and for conformity to prescribed traffic regulations

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Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Driving hazards and related defensive driving techniques
- Efficient driving techniques
- Engine power management and safe driving strategies
- Heavy rigid vehicle controls, instruments and indicators and their use
- Heavy rigid vehicle handling procedures
- Pre-operational checks carried out on vehicle and related action
- Relevant state/territory driver licensing authority road rules, regulations, permit and licence requirements

Required skills:

- Anticipate and monitor and traffic hazards and take appropriate action
- Apply precautions and required action to eliminate, minimise or control hazards that may exist when driving a heavy rigid vehicle
- Carry out pre-operational vehicle checks
- Communicate effectively with others when driving a heavy rigid vehicle
- Read and interpret instructions, procedures, information and signs relevant to driving a heavy rigid vehicle

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include: • applying relevant procedures that reflect legislative requirements • negotiating a range of complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings).

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Context of and specific resources for assessment	Resources for assessment include access to: • range of relevant exercises, case studies and/or other simulated practical and knowledge assessment • appropriate range of relevant on-road operational situations or in the workplace • relevant and appropriate materials and equipment • applicable documentation such as workplace procedures, regulations, codes of practice and operation manuals.
Method of assessment	Practical driving aspects must be assessed in a vehicle typical of the class as approved by the state/territory driver licensing authority. The use of simulators for driver testing is not permitted. The assessor must use the mandatory assessment tool provided by the state/territory driver licensing authority to conduct the assessment for this unit according to licensing authority requirements. The state/territory driver licensing authority may prescribe approved routes, which must be used for the final assessment.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Heavy rigid vehicle includes:	• Rigid vehicle, not being an unladen prime mover, with a minimum of three axles and a minimum 15 tonnes GVM • Modified three axle prime mover with a certified detachable tray (with capacity to carry 75% of its specified GVM) with a GVM of 15 tonnes • Three axle articulated bus • Three axle bus above 15 tonnes GVM
Vehicle handling procedures may include:	• Accelerating and braking • Managing engine performance • Operating vehicle controls, instruments and indicators • Positioning and stopping a vehicle • Reversing a vehicle • Starting a vehicle • Steering and manoeuvring a vehicle • Using defensive driving techniques
Driving hazards may include:	• Animals and objects on road • Faulty:

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	• brakes • steering mechanism on vehicle • Fire in vehicle • Flooded sections of road • Foggy conditions • Leaking fuel • Oil on road • Parked vehicles on road • Pedestrians crossing road • Wet and iced roads • Windy sections of road
Traffic and road conditions may include:	• Negotiating a range of more complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railwaylevel crossings) • On open or private roads including roads with moderate inclines and declines • Operations conducted during the day or night • Typical weather conditions • While at a depot, base or warehouse • While at a client workplace or worksite

Pre-operational inspections and equipment checks may include:	• Checking and topping up fluid levels
	• Checking:
	  • brakes
	  • operation of vehicle lights and indicators
	  • tyre pressures
	• Visually checking vehicle

Unit Sector(s)

Not applicable.

Competency Field

LIC - Licensing

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TLILIC3006A Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required to operate a mobile crane of greater than 3 tonnes capacity that incorporates a boom or jib which includes articulated type mobile cranes and locomotive cranes, but does not include vehicle tow trucks, for licensing purposes.

Application of the Unit

Application of the Unit	This unit requires the operator to plan the work, conduct routine checks, set up crane, transfer loads, mobile loads, and shut down and secure the crane. This unit is based on the requirements of the National Standard for Licensing Persons Performing High Risk Work. This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT *Elements describe the essential outcomes of a unit of competency.*	**PERFORMANCE CRITERIA** *Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.*
1. Plan work	1.1 1.1 Potential workplace ***hazards*** are identified 1.2 ***Hazard control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment 1.3 The weight of the load is identified and estimated in consultation with ***associated personnel*** 1.4 ***Crane*** is ***appropriate*** to the load/s and workplace conditions 1.5 The appropriate path for the movement of loads in the work area is inspected and determined 1.6 Appropriate ***communication methods*** are identified with ***associated personnel***
2. Conduct routine checks	2.1 Crane is visually checked for any damage or defects 2.2 ***Crane*** is accessed in a safe manner 2.3 All ***signage and labels*** are visible and legible according to the ***appropriate standard*** 2.4 Routine pre-operational crane checks are carried out according to ***procedures*** 2.5 All controls are located and identified 2.6 Crane ***service logbook*** is checked for compliance 2.7 Crane is started according to ***procedures*** and checked for any abnormal noises 2.8 All ***crane safety devices*** are tested according to

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	procedures 2.9 Pos-start operational checks are carried out according to ***procedures*** 2.10 All ***communication equipment*** is checked for serviceability 2.11 All damage and defects are reported and recorded according to ***procedures***, and appropriate action is taken
3. Set up crane	3.1 ***Ground suitability*** is checked 3.2 ***Crane*** is driven to the work area according to ***procedures*** 3.3 ***Crane*** is positioned for work application and ***stability*** according to ***procedures*** 3.4 Appropriate ***crane configuration*** for work task is determined according to ***procedures*** (where applicable) 3.5 Boom/jib and counterweight configuration data is input into the crane computer (where applicable) 3.6 Appropriate ***hazard prevention***/***control measures*** are applied to the work area according to ***procedures*** 3.7 All ***communications equipment*** is tested for functionality
4. Transfer load	4.1 Lifts are determined within the capacity of the crane 4.2 Boom/jib and hoist block is positioned over load following directions from ***associated personnel*** 4.3 ***Test lift*** is carried out according to ***procedures*** 4.4 Loads are transferred using all ***relevant crane movements*** according to ***procedures*** and the ***appropriate standard*** 4.5 All required ***communication signals*** are correctly interpreted according to ***procedures*** and the ***appropriate standard*** 4.6 ***Crane*** is operated according to ***procedures*** 4.7 Load movement is monitored constantly ensuring safety to personnel and load, and crane stability 4.8 ***Unplanned and***/***or unsafe*** situations are responded to in line with ***procedures***
5. Mobile load	5.1 Suitability of ***planned route*** is checked for the crane according to ***procedures*** 5.2 ***Crane*** is configured to mobile load according to procedures

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	5.3 Load is moved using ***best mobile practice*** according to the appropriate standard
6 Shut down and secure crane	6.1 ***Crane*** boom/jib and equipment is stowed and secured, where appropriate, according to ***procedures*** and the ***appropriate standard*** 6.2 Relevant motion locks and brakes are applied (where applicable) 6.3 Outriggers/stabilisers are stowed and secured according to ***procedures*** (where applicable) 6.4 Crane is ***shut down*** according to procedures 6.5 Routine post-operational crane checks are carried out according to ***procedures*** 6.6 Plates or packing are stowed and secured (where applicable) 6.7 All damage and defects are recorded and reported according to ***procedures***, and appropriate action is taken

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level, required for this unit.
Required skills:
• Accurately record and maintain information relating to crane operations • Use communication techniques in the workplace including whistles, hand signals and use of two-way radios • Use communication skills at a level sufficient to communicate with other site personnel • Assessment of ground conditions to confirm that the site is suitable (e.g. firm, level and safe) to operate crane • Operate crane including all functions to their maximum extension in the lifting and moving of loads to the safe working rated capacity in conjunction with other associated personnel • Mobile loads using best mobile practice • Apply risk assessment and hazard control strategies, including hierarchy of control as applied to the positioning and safe operation of the crane (particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions, crane tipping and demolition sites) • Use and interpret crane manufacturer's specifications and data, including load charts

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REQUIRED SKILLS AND KNOWLEDGE
to enable the crane to be configured for the load • Verify problems and equipment faults and demonstrate appropriate response procedures
Required knowledge:
• Appropriate mathematical procedures for estimation and measurement of loads • Commonwealth, state or territory OH&S legislation, standards and codes of practice relevant to the full range of processes for the crane class • Ability to read and comprehend manufacturer's instructions, procedures and safety signs • Understanding of crane characteristics and capabilities (including use of load charts) to allow the configuration of the crane to suit the range of loads • Understanding of the hierarchy of hazard identification and control • Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class • Procedures for the recording, reporting and maintenance of workplace records and information • Typical routine problems encountered in the operation of the crane and equipment and adjustments required for correction

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for the Training Package.	
Overview of assessment	Successful assessment of this unit meets the competency requirement of the National Standard for Licensing Persons Performing High Risk Work. State/territory OH&S regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body responsible for OH&S matters.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Compliance with OH&S licensing legislation. • Communicate and work safely with others in the work area. • Risk assessment and management procedures (particular awareness of the risks associated with

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EVIDENCE GUIDE	
	overhead powerlines/electrical cables, ground conditions, crane tipping, other vehicles and personnel). • Operation of a non-slewing mobile crane including all functions to their maximum extension in the lifting and moving of loads to the safe working rated capacity of non-slewing mobile cranes (over 3t capacity) in conjunction with other associated personnel. • Appropriate mathematical procedures for estimation of loads.

Context of and specific resources for assessment	• Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the endorsed Assessment Instrument.
	• Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting.
	• Assessors must ensure that the assessment in the workplace is organised to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace.
	• Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints.
	• Assessment is to comply with relevant appropriate standard requirements.
	• Applicants must have access to:
	  • Personal Protective Equipment (PPE) for the purpose of the Performance Assessment
	  • appropriate non-slewing crane (greater than 3 tonnes) and associated equipment in safe condition
	  • suitable loads as specified by endorsed assessment instrument
	  • communication equipment (e.g. two-way radios, whistles, etc.)
	  • other associated personnel to sling and direct the loads.

Method of assessment	• Assessment must be conducted using the endorsed Assessment Instruments. These Instruments provide advice on their application.

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EVIDENCE GUIDE	
	• The use of '**simulators**' in the assessment of this unit of competency is **not acceptable**. • Assessment may be in conjunction with the assessment of other units of competency. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstances, but is able to be transferred to other circumstances.
Guidance information for assessment	• Further information about endorsed Assessment Instruments may be obtained from state/territory OH&S regulators.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.	
Hazards	May include but not limited to: • ground stability (e.g. ground condition, recently filled trenches, slopes) • overhead hazards (e.g. powerlines, service pipes) • insufficient lighting • traffic (e.g. pedestrians, vehicles, other plant) • environmental conditions (e.g. wind, lightning, storms, etc.) • other specific hazards (e.g. dangerous materials)
Hazard control measures	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls It includes the application of the hierarchy of control, the six-step preference of control measures to manage and control risk: 1 elimination

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RANGE STATEMENT	
	2 substitution 3 isolation 4 engineering control measures 5 using safe work practices 6 personal protective equipment
Appropriate standards	May include but not limited to: • codes of practice • legislation • Australian standards • manufacturer's specifications • industry standards (where applicable)
Associated personnel	May include but not limited to: • doggers • riggers
Appropriate	May include but not limited to: • crane capabilities • environmental conditions (e.g. wind, lightning, storms, etc.)
Crane	May include: • a crane (greater than 3 tonnes capacity) which meets the requirements of AS1418 • articulated type mobile cranes • locomotive cranes Does not include vehicle tow truck operations
Communication method	May include but not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol
Signage and labels	May include but not limited to: • crane data plates/labels • load charts • crane decals

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RANGE STATEMENT	
	• control labels
Procedures	May include but not limited to: • manufacturer's guidelines (instructions, specifications, operators manual or checklists) • industry operating procedures • workplace procedures (work instructions, operating procedures, checklists)
Controls	May include but not limited to: • luffing levers • hoisting and lowering levers • slewing levers including brake • boom extension levers (where fitted)
Service logbook	May include but not limited to: • any logbook • service book • history record system where the service and maintenance history is kept
Crane safety devices	May include but not limited to: • horns/sirens • audible and visual reversing devices • operator restraint devices • lights
Communication equipment	May include but not limited to: • fixed channel two-way radios • whistles • bells • buzzers NB: where radio communication equipment is used the transmitting frequencies of the equipment must be selected to prevent interference to or from other radio equipment being used in the vicinity of the crane
Ground suitability	May include but not limited to: • rough uneven ground • backfilled ground • soft soils • hard compacted soil

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RANGE STATEMENT	
	• rock • bitumen • concrete
Stability	May include but not limited to: • deploying outriggers • establishing correct size plates or packing • correctly positioning plates or packing
Crane configuration	May include but not be limited to: • boom/jib • fly-jib • counterweights
Hazard prevention/control measures	May include but not limited to: • safety tags on electrical switches/isolators • insulated powerlines • safety observer used inside exclusion zone • disconnected power • traffic barricades and control/s • pedestrian controls • trench covers • movement of obstructions • personal protective equipment • adequate illumination
Test lift	The load is lifted just clear of the lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure that: • near capacity loads do not overload the crane • loads of unusual shape or weight distribution are correctly slung • load measuring equipment can be used to verify the calculated weight of the load • all crane equipment is functioning properly • adjustments to the slinging can be made in a safe manner
Relevant crane movements	May include but not limited to: • telescope in and out • boom/jib up and down • articulating (as applicable)

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RANGE STATEMENT	
	• raise and lower hoist (as applicable)
Communication signals	May include but not limited to: • stop - hand • stop - whistle • hoist up - hand • hoist up - whistle • hoist down - hand • hoist down - whistle • luff boom down - hand • luff boom down - whistle • luff boom up - hand • luff boom up - whistle • telescope out - hand • telescope out - whistle • telescope in - hand • telescope in - whistle • slew/articulate right - hand • slew/articulate right - whistle • slew/articulate left - hand • slew/articulate left - whistle
Unplanned and/or unsafe situations	May include but not limited to: • failure/loss of control (e.g. brakes and steering) • failure of equipment (e.g. hydraulic system) • environmental conditions (e.g. wind, lightning, storms, etc.)
Planned route	May include but not limited to: • unusual or difficult terrains • obstacles or obstruction
Best mobile practice	May include but not limited to: • minimum speed • gentle acceleration and braking (to minimise load swing) • minimum boom/jib length • carrying the load near to the ground surface • use of handheld taglines
Shut down	May include but not limited to: • retracting boom/jib/fly (where applicable)

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RANGE STATEMENT	
	• retracting hoist rope and hook block • idling engine to stabilise temperature • retracting outriggers/stabilisers (where applicable) • turning off engine

Unit Sector(s)

Not Applicable

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TLILIC3008A Licence to operate a slewing mobile crane (up to 20 tonnes)

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required to operate a slewing mobile crane (up to 20 tonnes) for licensing purposes. It encompasses the requirement for non-slewing mobile crane licence and the vehicle loading crane licence.

Application of the Unit

Application of the Unit	This unit requires the operator to plan the work, conduct routine checks, set up crane, transfer loads, mobile loads and shut down and secure the crane. This unit is based on the requirements of the National Standard for Licensing Persons Performing High Risk Work. This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency	*Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan work	1.1 Potential workplace ***hazards*** are identified 1.2 ***Hazard prevention***/***control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment 1.3 The weight of the load is identified and estimated in consultation with ***associated personnel*** 1.4 ***Crane*** is ***appropriate*** to the load/s and workplace conditions 1.5 Appropriate path for the movement of loads in the work area is inspected and determined 1.6 Appropriate ***communication methods*** are identified with ***associated personnel***
2. Conduct routine checks	2.1 ***Crane*** is visually checked for any damage or defects 2.2 ***Crane*** is accessed in a safe manner 2.3 All ***signage and labels*** are visible and legible according to the ***appropriate standard*** 2.4 Routine pre-operational crane checks are carried out according to ***procedures*** 2.5 All ***controls*** are located and identified 2.6 Crane ***service logbook*** is checked for compliance 2.7 ***Crane*** is started according to ***procedures*** and checked for any abnormal noise

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ELEMENT	PERFORMANCE CRITERIA
	2.8 All ***crane safety devices*** are tested according to ***procedures*** 2.9 Post-start operational checks are carried out according to ***procedures*** 2.10 All ***communication equipment*** is checked for serviceability 2.11 All damage and defects are reported and recorded according to ***procedures***, and appropriate action is taken
3. Set up crane	3.1 ***Ground suitability*** is checked 3.2 ***Crane*** is driven to the work area according to ***procedures*** 3.3 ***Crane*** is positioned for work application and ***stability*** according to ***procedures*** 3.4 Appropriate ***crane configuration*** for work task is determined according to ***procedures*** (where applicable) 3.5 Boom/jib and counterweight configuration data is input into the crane computer (as required) 3.6 Appropriate ***hazard prevention***/***control measures*** are applied to the work area according to ***procedures*** 3.7 All ***communications equipment*** is tested for functionality
4. Transfer load	4.1 Lifts are determined within the capacity of the crane 4.2 Boom/jib and hoist block is positioned over load following directions from ***associated personnel*** 4.3 ***Test lift*** is carried out according to ***procedures*** 4.4 Loads are transferred using all ***relevant crane movements*** according to ***procedures*** and the ***appropriate standard*** 4.5 All required ***communication signals*** are correctly interpreted according to ***procedures*** and the ***appropriate standard*** 4.6 ***Crane*** is operated according to ***procedures*** 4.7 Load movement is monitored constantly ensuring safety to personnel and load, and crane stability 4.8 ***Unplanned and/or unsafe*** situations are responded to in line with ***procedures***
5. Mobile load	5.1 Suitability of ***planned route*** is checked for the crane according to ***procedures*** 5.2 ***Crane*** is configured to mobile load according to

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ELEMENT	PERFORMANCE CRITERIA
	procedures 5.3 Load is moved using ***best mobile practice*** according to the ***appropriate standard***
6. Shut down and secure crane	6.1 ***Crane*** boom/jib and equipment are stowed and secured where appropriate according to ***procedures*** and the ***appropriate standard*** 6.2 Relevant motion locks and brakes are applied (where applicable) 6.3 Outriggers/stabilisers are stowed and secured according to ***procedures*** 6.4 Crane is ***shut down*** according to ***procedures*** 6.5 Plates or packing are stowed and secured 6.6 Routine post-operational crane checks are carried out according to ***procedures*** 6.7 All damage and defects are reported and recorded according to ***procedures***, and appropriate action is taken

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level required for this unit.
Required skills:
• Accurately record and maintain information relating to crane operations • Use communication techniques in the workplace including whistles, hand signals and use of two-way radios • Use interpersonal communication skills at a level sufficient to communicate with other site personnel • Load data into crane computer (where fitted) and check operation to accurately reflect the crane configuration • Operate a slewing mobile crane (up to 20t capacity) for the lifting and moving of loads to the safe working rated capacity in conjunction with other associated personnel • Apply risk assessment and hazard control strategies, including hierarchy of control as applied to the positioning and safe operation of the crane (particular awareness of the risks associated with overhead powerlines/electrical cables, wind, erection, pack up and crane stability) • Use and interpret crane manufacturer's specifications and data, including load

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REQUIRED SKILLS AND KNOWLEDGE
charts, to enable the crane to be configured for the load • Verify problems and equipment faults and demonstrate appropriate response procedures
Required knowledge:
• Appropriate mathematical procedures for estimation and measurement of loads • Commonwealth, state or territory OH&S legislation, standards and codes of practice relevant to the full range of processes for the crane class • Level of literacy to be able to read and comprehend manufacturer's instructions, procedures and safety signs • Mobile slewing crane characteristics and capabilities to allow the configuration of the crane to suit the range of loads • Mobile slewing crane operating techniques • Understanding of the hierarchy of hazard identification and control • Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class • Procedures for the recording, reporting and maintenance of workplace records and information • Rated capacity and working load limits (including use of crane load charts) • Typical routine problems encountered in the process and with equipment and adjustments required for correction

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for the Training Package.	
Overview of assessment	• Successful assessment of this unit meets the competency requirement of the National Standard for Licensing Persons Performing High Risk Work. • State/territory OH&S regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body responsible for OH&S matters.
Critical aspects for assessment and evidence required to demonstrate	• Compliance with OH&S licensing legislation. • Communicate and work safely with others in the work area.

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EVIDENCE GUIDE	
competency in this unit	• Risk assessment and management procedures (particular awareness of the risks associated with overhead powerlines/electrical cables, ground conditions, crane tipping and demolition sites). • Complete the pre-operational check, positioning, stabilising, set up, operation, post-operational checks of a mobile crane including all functions to their maximum extension in the lifting and moving of loads to the safe working rated capacity of the mobile crane up to 20 tonne capacity in conjunction with other associated personnel. • Appropriate mathematical procedures for estimation of loads.

Context of and specific resources for assessment	• Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the endorsed Assessment Instrument.
	• Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting.
	• Assessors must ensure that the assessment in the workplace is organised to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace.
	• Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints.
	• Assessment is to comply with relevant appropriate standard requirements.
	• Applicants must have access to:
	  • Personal Protective Equipment (PPE) for the purpose of the Performance Assessment
	  • appropriate slewing mobile crane (up to 20 tonne) and associated equipment in safe condition
	  • suitable loads as specified by the endorsed Assessment Instrument
	  • communication equipment (e.g. two-way radios, whistles, etc.)
	  • other associated personnel to sling and direct the loads

Method of assessment	• Assessment must be conducted using the endorsed

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EVIDENCE GUIDE	
	Assessment Instruments. These Instruments provide advice on their application. • Assessment may be in conjunction with the assessment of other units of competency. • The use of '**simulators**' in the assessment of this unit of competency is **not acceptable**. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstances, but is able to be transferred to other circumstances.
Guidance information for assessment	Further information about endorsed Assessment Instruments may be obtained from state/territory OH&S regulators.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.	
Hazards	May include but not limited to: • ground stability (e.g. ground condition, recently filled trenches, slopes) • overhead hazards (e.g. powerlines, service pipes) • traffic (e.g. pedestrians, vehicles, other plant) • insufficient lighting • environmental conditions (e.g. wind, lightning, storms, etc.) • other specific hazards (e.g. dangerous materials)
Hazard control measures	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls It includes the application of the hierarchy of control, the six-step preference of control measures to manage

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RANGE STATEMENT	
	and control risk: 1 elimination 2 substitution 3 isolation 4 engineering control measures 5 using safe work practices 6 personal protective equipment
Appropriate standard	May include but not limited to: • codes of practice (mobile crane) • legislation • Australian standard • manufacturer's specifications • industry standards (where applicable)
Associated personnel	May include but not limited to: • riggers • doggers
Appropriate	May include but not limited to: • crane capabilities • environmental conditions (e.g. wind, lightning, storms, etc.)
Crane	May include a boom or jib, which is capable of being slewed (up to 20 tonnes capacity) The slewing mobile crane up to 20 tonnes classification encompasses the requirements for the non-slewing mobile crane classification and the vehicle loading crane classification NB: This excludes front-end loader, backhoe, excavator or like equipment when configured for crane operation
Communication method	May include but not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol

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RANGE STATEMENT	
Signage and labels	May include but not limited to: • crane data plates/labels • load charts • crane decals • control labels
Procedures	May include but not limited to: • manufacturer's guidelines (instructions, specifications or checklists) • industry operating procedures • workplace procedures (work instructions, operating procedures, checklists)
Controls	May include but not limited to: • luffing levers • hoisting and lowering levers • slewing levers including brake • boom extension levers (where fitted)
Service logbook	May include but not limited to: • any logbook • service book • history record system where the service and maintenance history is kept
Crane safety devices	May include but not limited to: • horns/sirens • audible and visual reversing devices • operator restraint devices • lights
Communication equipment	May include but not limited to: • two-way radios • whistles • bells • buzzers NB: where radio communication equipment is used the transmitting frequencies of the equipment must be selected to prevent interference to or from other radio equipment being used in the vicinity of the crane
Ground suitability	May include but not limited to:

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RANGE STATEMENT	
	• rough uneven ground • backfilled ground • soft soils • hard compacted soil • rock • bitumen • concrete
Stability	May include but not limited to: • deploying outriggers • establishing correct size plates or packing • correctly positioning plates or packing
Crane configuration	May include but not be limited to: • boom/jib • fly-jib • counterweights
Hazard prevention/control measures	May include but not limited to: • safety tags on electrical switches/isolators • insulated powerlines • safety observer used inside exclusion zone • disconnected power • traffic barricades and control • pedestrian barricades • trench covers • movement of obstructions • personal protective equipment • adequate illumination
Test lift	The load is lifted just clear of the lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure that: • near capacity loads do not overload the crane • loads of unusual shape or weight distribution are correctly slung • load measuring equipment can be used to verify the calculated weight of the load • all crane equipment is functioning properly • adjustments to the slinging can be made in a safe manner

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RANGE STATEMENT	
Relevant crane movements	May include but not limited to: • telescope in and out • boom/jib up and down • slew boom/jib • operation of outriggers/stabilisers • raise and lower hoist • travel
Communication signals	May include but not limited to: • stop - hand • stop - whistle • hoist up - hand • hoist up - whistle • hoist down - hand • hoist down - whistle • luff boom down - hand • luff boom down - whistle • luff boom up - hand • luff boom up - whistle • telescope out - hand • telescope out - whistle • telescope in - hand • telescope in - whistle • slew left - hand • slew left - whistle • slew right - hand • slew right - whistle • travel - hand
Unplanned and/or unsafe situations	May include but not limited to: • failure/loss of control (e.g. brakes and steering) • failure of equipment (e.g. hydraulic system) • environmental conditions (e.g. wind, lightning, storms, etc.)
Planned route	May include but not limited to: • unusual or difficult terrains • obstacles or obstruction
Best mobile practice	May include but not limited to: • minimum speed

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RANGE STATEMENT	
	• gentle acceleration and braking (to minimise load swing) • minimum boom/jib length • carrying the load near to the ground surface • boom/jib in line with the crane • boom/jib as low as possible • load faces uphill • use of handheld taglines
Shut Down	May include but not limited to: • retracting boom/jib • retracting hoist rope and hook block • positioning/securing boom/jib • retracting outriggers/stabilisers • idling engine to stabilise temperature • turning off engine (where applicable) • removing key from ignition (where applicable) • locking and securing cabin (where applicable)

Unit Sector(s)

Not Applicable

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TLILIC3013A Preparation to transport dangerous goods by road

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

This unit addresses the skills and knowledge requirements for a driver to obtain a licence for the transport of dangerous goods by road.

Application of the Unit

Application of the Unit

The unit covers preparing to comply with regulatory requirements and does not address all the skills and knowledge for the transportation of dangerous goods. Upon achieving this unit and obtaining a licence, further industry specific training will be required to satisfy legislative requirements for the transportation of dangerous goods.

Licensing/Legislative Requirements

The primary legislative requirements applicable to this unit of competency are state/territory legislation in relation to the transport of dangerous goods, the current version of the Australian code for the Transport of Dangerous Goods by Road and Rail (ADG Code), relevant Australian Standards (AS) and relevant Occupational Health and Safety (OH&S) legislation including licensing and assessment requirements.

Obtaining this competency is a necessary requirement for obtaining a Dangerous Goods Driver Licence. However, it is only one of several criteria for obtaining the licence. Registered training organisations must advise each prospective student that there are a number of non-competency related requirements that must be satisfied to meet the licensing requirements. Depending on the jurisdiction these may include: age limits; relevant and valid driver licence; suitable driver traffic history; satisfactory medical report; criminal history or suitable person check; English standard - Score 5 in International English Language Testing System (IELTS).

It is a licensing requirement that this course be conducted over two or more training days including a minimum of 16 hours of

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supervised training and assessment.

Licensing/Regulatory Information

Refer to Application of the Unit

Pre-Requisites

Not Applicable

Employability Skills Information

Employability Skills This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Identify individual organisations and systems for the transport of dangerous goods	1.1 Responsibilities and duties for the transport of dangerous goods are clearly defined, and allocated and included in job descriptions and duty statements for all relevant positions 1.2 Systems, organisations, and other persons that effect the transport of dangerous goods are identified
2 Identify UN numbers, UN classes and UN divisions of dangerous goods including packing groups	2.1 Proper shipping names and other relevant information from Dangerous Goods List are identified 2.2 UN class and UN division labels for dangerous goods are determined in accordance with the current ADG Code and regulatory requirements 2.3 Packing groups for dangerous goods are identified and assessed for their significance 2.4 The Dangerous Goods List is evaluated in relation to its special

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ELEMENT	PERFORMANCE CRITERIA
	provisions and other instructions
3 Check vehicle	3.1 The suitability of a transport vehicle to carry dangerous goods is assessed including roadworthiness, fittings and accessories, test date tags, knowledge of operation of control systems, awareness of mass, configuration, and other relevant requirements for the intended load
	3.2 The requirements for driver and vehicle licensing and how to check vehicle for licence and registration labels, and conformity with the current ADG Code and other regulatory requirements are identified
	3.3 Checks are made to determine that the transport vehicle has the correct placarding for the class or division of the intended load
4 Assess suitability of transport mode for intended load	4.1 The suitability of dangerous goods packaging is assessed to ensure that it is suitable for purpose, free from obvious defects and residue
	4.2 Ullage in large compartments is identified and assessed for compliance with the current ADG Code and regulatory requirements
	4.3 Transport documentation is checked to ensure that dangerous goods markings and vehicle placards are consistent with the load being carried and are legible and clearly visible
	4.4 Dangerous goods loads are checked for compatibility and segregation in accordance with regulatory requirements
5 Follow emergency procedures	5.1 Hazchem codes are understood and appropriately applied in emergency response situations
	5.2 Hazchem codes for a mixed load of dangerous goods are identified
	5.3 Emergency information required for the dangerous goods being transported is appropriately identified
	5.4 Driver's role and obligations in an emergency situation, are identified in accordance with a Transport Emergency Response Plan
	5.5 Appropriate communication to notify relevant personnel and emergency services is identified and applied
	5.6 Safety equipment is used for containment, clean up or recovery as appropriate
6 Check safety equipment and its use	6.1 Safety equipment is determined according to the type of dangerous goods being transported in accordance with current ADG Code and regulatory requirements
	6.2 The suitability and compliance of personal protective equipment required is assessed
	6.3 Personal protective equipment and safety equipment is used in

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ELEMENT	PERFORMANCE CRITERIA
	accordance with workplace and regulatory requirements
7 Maintain dangerous goods documentation	7.1 Transport documentation is accurate and completed in accordance with workplace and regulatory requirements including the current ADG Code
	7.2 Transport documentation is appropriately amended according to regulations and enterprise procedures
	7.3 Transport documentation is correctly located in the cabin in accordance with regulatory requirements
8 Secure and protect vehicle load	8.1 Load restraint method/s for the transport of dangerous goods in accordance with current ADG Code and other regulatory requirements are appropriately established
	8.2 Load restraint systems and securing points are inspected for suitability, excessive wear, and obvious defects
9 Plan, control and manage transfer of dangerous goods	9.1 Positioning of vehicle for dangerous goods bulk transfer is in accordance with current regulatory and enterprise procedures
	9.2 Suitable safety measures for each class of dangerous goods being transferred are identified
	9.3 Operation of battery isolation switches is clearly identified
	9.4 Transfer equipment and adequacy of lighting levels are identified and checked for compatibility
	9.5 Responsibilities of drivers during transfer of dangerous goods are identified
	9.6 Emergency procedures in the event of a spill or leak during transfer are identified
	9.7 Hoses used to transfer dangerous goods have been appropriately tested in accordance with regulatory requirements
10 Plan and manage safe transport of dangerous goods	10.1 Regulatory procedures for carrying passengers while transporting dangerous goods are identified
	10.2 Prohibited practices and the carrying of prohibited objects during transport are identified
	10.3 Regulatory and enterprise procedures for planning routes covering driving, parking, loading and unloading, uncoupling and/or securing the vehicle are assessed
	10.4 Transport routes are planned to ensure prohibited areas and restricted routes are observed
	10.5 Appropriate parking requirements are identified in accordance with regulatory requirements
	10.6 Regulatory requirements relating to the transport of empty or nominally empty packaging used to transport dangerous goods are identified in accordance with the current ADG code
	10.7 Regulatory and enterprise procedures and driver's role in vehicle breakdown situations are appropriately indentified and

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ELEMENT	PERFORMANCE CRITERIA
	implemented

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- The current ADG Code and relevant state/territory dangerous goods legislation as they apply to vehicles transporting dangerous goods by road
- Procedures and guidelines concerning the transport of dangerous goods
- Risks associated with the transporting of dangerous goods by road and related precautions to control those risks
- Housekeeping standards and procedures required in the workplace
- Assess suitability of transport vehicles intending to carry dangerous goods
- Ability to read and interpret information on transport documentation including consignment/manifest sheets
- Plan appropriate transport routes and appropriate rest stops
- Methods of securing a vehicle following loading and unloading of dangerous goods, including bulk transfer of dangerous goods
- Relevant permit and/or licence requirements
- Ability to complete/amend appropriate documentation

Required skills:

- Ability to identify and correctly use equipment required for the bulk load/transfer of dangerous goods
- Ability to modify activities depending on differing workplace contexts, risk situations and environments
- Ability to read and comprehend simple statements in English (to Level 5, International English Language Testing System)
- Ability to identify dangerous goods labelling and placarding such as emergency information panels
- Ability to select and place appropriate placarding on vehicle/s transporting dangerous goods by road
- Ability to understand mass, volume and special requirements of a load
- Ability to identify and follow emergency procedures in the event of accident/incident

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Required skills:

- Ability to use personal protection and safety equipment including eye wash kit
- Ability to identify/demonstrate appropriate load restraint methods

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying the following:
  - identify UN classes, UN division, packing group, class and subsidiary risk labels for dangerous goods
  - compliance with ADG and relevant dangerous goods legislation
  - determine proper shipping names for UN numbers
  - identify the level of risk within particular dangerous goods classes/divisions
  - identify other persons, organisations, systems involved in the transport of dangerous goods by road
  - identify the required information on a transport document for the transport of dangerous goods
  - identify emergency information document and its storage location
  - apply segregation methods to incompatible dangerous goods
  - demonstrate the ability to appropriately placard dangerous goods vehicles
  - identify required information on an emergency information panel
  - assess operational suitability of equipment and vehicles pertinent to dangerous goods transportation
  - locate, interpret and apply relevant information
  - select appropriate equipment and work systems to enable safe, efficient work

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EVIDENCE GUIDE

	• identify hazards and plan work to minimise risks when transporting dangerous goods • determine (if any) required permits • use appropriate communication strategies and equipment • maintain workplace records and documentation including completing dangerous goods declarations • identify and safely handle equipment and goods • apply hierarchy of hazard control
Context of and specific resources for assessment	• Assessment of this unit must be undertaken by a registered training organisation: • As a minimum, assessment of knowledge must be conducted through appropriate oral and/or written questioning • Appropriate practical assessment must occur at the registered training organisation, and/or in an appropriate work situation or realistic simulated work environment • Assessment is to comply with relevant regulatory requirements and correspond with the current version of the ADG Code and relevant Australian Standards in relation to the transport of dangerous goods by road
Method of assessment	• Assessment must be conducted using the Mandatory Assessment Instrument. This instrument includes requirements for application and is available from the relevant state/territory Competent Authority • Assessment must include questioning (verbal and/or written) • Assessment may be in conjunction with the assessment of other units of competency
Specific resources	• Access is required to opportunities to: • participate in a range of exercises, case studies and other real and/or three dimensional simulated practical and knowledge assessments that demonstrate the skills and knowledge to prepare for the transport of dangerous goods, and/or • prepare for the transport of dangerous goods by road in an appropriate range of operational situations • For the purpose of training and assessment all applicants must be provided or have direct access to a copy of the current ADG Code and relevant dangerous goods legislation for their state/territory • The Competent Authority may require RTOs to provide

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EVIDENCE GUIDE

	copies of learning materials used for training. The Competent Authority may disallow the use of any learning materials it considers unsuitable
Access and equity considerations	• All workers in the transport industry should be aware of access and equity issues in relation to their own area of work • All workers should develop their ability to work in a culturally diverse environment • Assessors and trainers must take into account relevant access and equity issues, in particular relating to factors impacting on Aboriginal and/or Torres Strait Islander transport drivers and communities

Consistency of performance	• Applies underpinning knowledge and skills when:
	  • assessing operational suitability of equipment and vehicles pertinent to the transport of dangerous goods by road
	  • identifying class and subsidiary risk labels for dangerous goods
	  • estimating weight and dimensions of load and any special requirements
	  • selecting appropriate equipment and work systems to enable safe, efficient work
	  • identifying hazards and planning work to minimise risks when transporting dangerous goods by road
	  • determining required permits, approvals or licences to transport dangerous goods by road
	  • using appropriate communication strategies and equipment
	  • locating, interpreting and applying relevant information
	  • maintaining transport documentation, driving records and any other workplace records
	  • identifying and safely handling equipment and goods
	  • applying hierarchy of hazard control
	• Shows evidence of application of relevant transport procedures including:
	  • current state/territory dangerous goods legislation and procedures
	  • current ADG Code and associated Australian Standards
	  • current OH&S regulations and hazard prevention policies and procedures

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EVIDENCE GUIDE

- current workplace procedures and work instructions concerning the preparation and transport of dangerous goods by road
- relevant and current guidelines relating to the use of loading equipment
- current housekeeping procedures
- current environmental protection procedures when transporting dangerous goods by road

- Action is taken promptly to report any accidents, incidents or potential difficulties in the preparation and transport of dangerous goods by road in accordance with legislation and workplace procedures
- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Work is completed systematically with required attention to detail without damage to goods, equipment or personnel

Guidance information for assessment

- Assessors must confirm the identity of the student at the time of each assessment component
- Team based assessment models must not be used for assessment of this competency unit
- The assessment must be conducted using the Mandatory Assessment Instrument nominated by the Competent Authority
- The assessment must be conducted in accordance with the requirements of the Competent Authority as specified in the Mandatory Assessment Instrument document and the accompanying assessment delivery guide
- The Mandatory Assessment Instrument challenge test is required for all forms of assessment including recognition of prior learning
- Further information about the Mandatory Assessment Instrument may be obtained from the Competent Authority in each state/territory
- It is a licensing requirement that assessors must satisfy the following requirements of the Competent Authority in addition to any requirements of the AQTF. Assessors must:
  - Pass an assessment test approved by the Competent Authority; and
  - Have at least 5 years relevant dangerous goods industry and operational experience; and

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EVIDENCE GUIDE

- Meet any additional mandatory skills or qualifications required by the Competent Authority; and
- Must not have been disallowed by a Competent Authority in any jurisdiction

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Operations may be conducted:	• in a range of work environments and weather conditions • by day or night
Customers may be:	• internal or external
Workplaces may comprise:	• large, medium or small worksites
Work may be conducted in:	• restricted spaces • exposed conditions • controlled or open environments
Vehicle refers to:	• all applicable transportation modes
Hazards in the work area may include exposure to:	• hazardous or dangerous materials • contamination of, or from, materials being handled • noise, light, energy sources • stationary and moving machinery, parts or components • service lines • spills, leakages, ruptures • dust/vapours
Hazard management is:	• consistent with the principle of hierarchy of control with elimination, substitution, isolation and engineering control measures being selected before safe working practices and personal protective equipment
Personal protective equipment may include:	• gloves • safety headwear and footwear • safety glasses • mask or respirator • breathing apparatus

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RANGE STATEMENT

	• high visibility clothing
Load restraint systems are:	• as detailed in the National Load Restraint Guide
Preparation of packaged dangerous goods for transport may:	• require special precautions as specified by the manufacturer
Transport documentation may include:	• Transport Emergency Response Plan • Emergency Procedure Guide • Material Safety Data Sheet (MSDS) • descriptions for dangerous goods (i.e. proper shipping name, class and division number, packing group, subsidiary risk(s) if any) • UN or ID number
Requirements for work may include:	• site restrictions and procedures • use of safety and personal protective equipment • communications equipment • specialised lifting and/or handling equipment • incident breakdown procedures • additional gear and equipment • noise restrictions • hours of operation • authorities and permits
Consultative processes may involve:	• other employees and supervisors • suppliers, potential customers and existing clients • management and union representatives • industrial relations, OH&S specialists, and other maintenance, professional or technical staff
Communication in the work area may include:	• phone • electronic data interchange (EDI) • fax • email • internet • radio • oral, aural or signed communications
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures • site procedures
Safety equipment on vehicle may	• fire extinguishers

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RANGE STATEMENT

include:	• portable warning devices • eye wash kit
Information/documents may include:	• current Australian Dangerous Goods Code, relevant Australian and international Standards • manifests, bar codes, goods and product identification • manufacturers specifications for equipment/tools • workplace procedures and policies for the preparation and transport of dangerous goods • goods identification numbers, codes and signs • supplier and/or client instructions • award, enterprise bargaining agreement, other industrial arrangements • relevant standards and certification requirements • quality assurance procedures • emergency procedures • manufacturers specifications, instructions and labelling advice for the transport of dangerous goods, including material safety data sheets
Applicable regulations and legislation may include:	• state/territory mass and loading regulations • Australian and international regulations and codes of practice for the handling and transport of dangerous goods and hazardous substances, including current Australian and International Dangerous Goods Codes, Australian Marine Orders and the International Maritime Dangerous Goods Code and International Air Transport Association (IATA) Dangerous Goods by Air regulations • Australian and state/territory regulations related to the transport of dangerous goods by road • relevant Australian and international Standards • relevant state/territory environmental protection legislation • relevant state/territory OH&S legislation

Unit Sector(s)

Not Applicable

Competency Field

Competency Field LIC - Licensing Units

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TLILIC3017B Licence to drive a heavy combination vehicle

Modification History

New release. This unit replaces and is equivalent to TLILIC3017A.

Unit Descriptor

This unit involves the skills and knowledge required to obtain a licence to drive a heavy combination vehicle. It includes systematically and efficiently controlling all vehicle functions, monitoring traffic and road conditions, managing vehicle condition and performance, coupling and uncoupling of trailer, and effectively managing hazardous situations.

Assessment of this unit will be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory driver licensing authority.

Application of the Unit

This unit applies to driving that is carried out in compliance with the licence requirements and regulations of the relevant state/territory driver licensing authority pertaining to heavy combination vehicles.

Driving is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain safety and operate a heavy combination vehicle across a variety of driving contexts.

The primary legislative requirements applicable to this unit of competency are state/territory legislation in relation to road use and driver licensing.

This unit addresses the knowledge and skills necessary for the granting of a Heavy Combination Driver Licence.

Being awarded this unit of competency is a necessary requirement to obtain a Heavy Combination Driver Licence but is only one of several criteria. Prospective licence applicants should check with the state/territory driver licensing authority for other criteria (such as licence tenure and medical fitness) to confirm compliance with other eligibility requirements before undertaking training and/or assessment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	**Drive a heavy combination vehicle**	1.1 Heavy combination vehicle is started, steered, manoeuvred, positioned and stopped according to traffic regulations, manufacturer instructions and relevant vehicle handling procedures
		1.2 Engine power is managed to ensure efficiency and performance, and to minimise engine and gear damage
		1.3 Braking system of heavy combination vehicle is managed and operated efficiently to ensure effective control of vehicle under all conditions
		1.4 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
		1.5 Heavy combination vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
		1.6 Heavy combination vehicle is parked, shutdown, uncoupled and safely secured according to traffic regulations
		1.7 Load is safely and effectively restrained
2	**Monitor traffic and road conditions**	2.1 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and to ensure no injury to people or damage to property, equipment, loads and facilities
		2.2 Interaction with other road users is conducted courteously according to road rules to ensure safe and efficient traffic flow
3	**Monitor and maintain vehicle**	3.1 Vehicle performance is maintained through pre-operational inspections and vehicle checks

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performance	3.2 Appropriate signage, lights and equipment are checked for operational effectiveness and for conformity to prescribed traffic regulations
	3.3 Prime mover and trailer are correctly aligned and coupled
	3.4 Coupled vehicle is checked and tested to ensure it is correctly secured and to confirm it is fully operational

Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Driving hazards and related defensive driving techniques
- Efficient driving techniques
- Engine power management and safe driving strategies
- Heavy combination vehicle controls, instruments and indicators and their use
- Heavy combination vehicle handling procedures
- Pre-operational checks carried out on vehicle and related action
- Relevant state/territory driver licensing authority road rules, regulations, permit and licence requirements

Required skills:

- Anticipate and monitor and traffic hazards and take appropriate action
- Apply precautions and required action to eliminate, minimise or control hazards that may exist when driving a heavy combination vehicle
- Carry out pre-operational vehicle checks
- Communicate effectively with others when driving a heavy combination vehicle
- Monitor performance of vehicle, its trailers and its equipment, and take appropriate action where required
- Read and interpret instructions, procedures, information and signs relevant to driving a heavy combination vehicle

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

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Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include: • applying relevant procedures that reflect legislative requirements • negotiating a range of complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings).
Context of and specific resources for assessment	Resources for assessment include access to: • range of relevant exercises, case studies and/or other simulated practical and knowledge assessment • appropriate range of relevant on-road operational situations or in the workplace • relevant and appropriate materials and equipment • applicable documentation such as workplace procedures, regulations, codes of practice and operation manuals.
Method of assessment	Practical driving aspects must be assessed in a vehicle typical of the class as approved by the state/territory driver licensing authority. The use of simulators for driver testing is not permitted. The assessor must use the mandatory assessment tool provided by the state/territory driver licensing authority to conduct the assessment for this unit according to licensing authority requirements. The state/territory driver licensing authority may prescribe approved routes, which must be used for the final assessment.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Heavy combination vehicle includes:	• Prime mover with a minimum of three axles and a semi-trailer with a minimum of two axles - vehicle must have a GCM rating of at least 24 tonnes • Heavy rigid vehicle towing a trailer - trailer must have at least two axles and a GVM of 12 tonnes or more
Vehicle handling procedures may include:	• Accelerating and braking • Managing engine performance • Operating vehicle controls, instruments and indicators • Positioning and stopping a vehicle

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	• Reversing a vehicle • Starting a vehicle • Steering and manoeuvring a vehicle • Using defensive driving techniques

Driving hazards may include:	• Animals and objects on road
	• Faulty:
	  • brakes
	  • steering mechanism on vehicle
	• Fire in vehicle
	• Flooded sections of road
	• Foggy conditions
	• Leaking fuel
	• Oil on road
	• Parked vehicles on road
	• Pedestrians crossing road
	• Wet and iced roads
	• Windy sections of road

Traffic and road conditions may include:	• Negotiating a range of more complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings) • On open or private roads including roads with moderate inclines and declines • Operations conducted during the day or night • Typical weather conditions • While at a depot, base or warehouse • While at a client workplace or worksite

Pre-operational inspections and equipment checks may include:	• Checking and topping up fluid levels
	• Checking:
	  • brakes
	  • operation of vehicle lights and indicators
	  • tyre pressures
	• Visually checking vehicle

Unit Sector(s)

Not applicable.

Competency Field

LIC - Licensing

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TLILIC3018B Licence to drive a multi combination vehicle

Modification History

New release. This unit replaces and is equivalent to TLILIC3018A.

Unit Descriptor

This unit involves the skills and knowledge required to obtain a licence to drive a multi-combination vehicle. It includes systematically and efficiently controlling all vehicle functions, monitoring traffic and road conditions, managing vehicle condition and performance, coupling and uncoupling of dollies, and effectively managing hazardous situations.

Assessment of this unit will be undertaken within a licensing examination conducted by, or under the authority of, the relevant state/territory driver licensing authority.

Application of the Unit

This unit applies to driving that is carried out in compliance with the licence requirements and regulations of the relevant state/territory driver licensing authority pertaining to multi-combination vehicles.

Driving is performed with limited or minimum supervision, and with limited accountability and responsibility for self and others in achieving the prescribed outcomes.

Driving involves the application of routine vehicle driving principles and procedures to maintain safety and operate a multi-combination vehicle across a variety of driving contexts.

The primary legislative requirements applicable to this unit of competency are state/territory legislation in relation to road use and driver licensing.

This unit addresses the knowledge and skills necessary for the granting of a Multi-Combination Driver Licence.

Being awarded this unit of competency is a necessary requirement to obtain a Multi-Combination Driver Licence but is only one of several criteria. Prospective licence applicants should check with the state/territory driver licensing authority for other criteria (such as licence tenure and medical fitness) to confirm compliance with other eligibility requirements before undertaking training and/or assessment.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

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Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	**Drive a multi-combination vehicle**	1.1 Multi-combination vehicle is started, steered, manoeuvred, positioned and stopped according to traffic regulations, manufacturer instructions and relevant vehicle handling procedures
		1.2 Engine power is managed to ensure efficiency and performance, and to minimise engine and transmission damage
		1.3 Braking system of multi-combination vehicle is managed and operated efficiently to ensure effective control of vehicle under all conditions
		1.4 Driving hazards are identified and/or anticipated and avoided or controlled through defensive driving
		1.5 Multi-combination vehicle is driven in reverse, maintaining visibility and achieving accurate positioning
		1.6 Multi-combination vehicle is parked, shutdown, uncoupled and safely secured according to traffic regulations
		1.7 Load is safely and effectively restrained
2	**Monitor traffic and road conditions**	2.1 Traffic and road conditions are constantly monitored and acted upon to enable safe operation and to ensure no injury to people or damage to property, equipment, loads and facilities
		2.2 Interaction with other road users is conducted courteously according to road rules to ensure safe and efficient traffic flow
3	**Monitor and maintain vehicle**	3.1 Vehicle performance is maintained through pre-operational inspections and vehicle checks

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performance	3.2 Appropriate signage, lights and equipment are checked for operational effectiveness and for conformity to prescribed traffic regulations
	3.3 Prime mover, dollies and trailer are correctly aligned and coupled in proper sequence
	3.4 Coupled vehicle is checked and tested to ensure it is correctly secured and to confirm it is fully operational

Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Driving hazards and related defensive driving techniques
- Efficient driving techniques
- Engine power management and safe driving strategies
- Multi-combination vehicle controls, instruments and indicators and their use
- Multi-combination vehicle handling procedures
- Pre-operational checks carried out on vehicle and related action
- Relevant state/territory driver licensing authority road rules, regulations, permit and licence requirements

Required skills:

- Anticipate and monitor and traffic hazards and take appropriate action
- Apply precautions and required action to eliminate, minimise or control hazards that may exist when driving a multi-combination vehicle
- Carry out pre-operational vehicle checks
- Communicate effectively with others when driving a multi-combination vehicle
- Monitor performance of vehicle, its trailers and its equipment, and take appropriate action where required
- Read and interpret instructions, procedures, information and signs relevant to driving a multi-combination vehicle

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment

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guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include: • applying relevant procedures that reflect legislative requirements • negotiating a range of complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings).
Context of and specific resources for assessment	Resources for assessment include access to: • range of relevant exercises, case studies and/or other simulated practical and knowledge assessment • appropriate range of relevant on-road operational situations or in the workplace • relevant and appropriate materials and equipment • applicable documentation such as workplace procedures, regulations, codes of practice and operation manuals.
Method of assessment	Practical driving aspects must be assessed in a vehicle typical of the class as approved by the state/territory driver licensing authority. The use of simulators for driver testing is not permitted. The assessor must use the mandatory assessment tool provided by the state/territory driver licensing authority to conduct the assessment for this unit according to licensing authority requirements. The state/territory driver licensing authority may prescribe approved routes, which must be used for the final assessment.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Multi-combination vehicle includes:	• Heavy combination B-double rated vehicle at least 22 metres in length with more than one trailer, which has all pertinent documentation permits etc. • Three axle prime mover with an A and B trailer each with bogie axles
Vehicle handling procedures	• Accelerating and braking • Managing engine performance

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may include:	• Operating vehicle controls, instruments and indicators • Positioning and stopping a vehicle • Reversing a vehicle • Starting a vehicle • Steering and manoeuvring a vehicle • Using defensive driving techniques

Driving hazards may include:	• Animals and objects on road
	• Faulty:
	  • brakes
	  • steering mechanism on vehicle
	• Fire in vehicle
	• Flooded sections of road
	• Foggy conditions
	• Leaking fuel
	• Oil on road
	• Parked vehicles on road
	• Pedestrians crossing road
	• Wet and iced roads
	• Windy sections of road

Traffic and road conditions may include:	• Negotiating a range of more complex traffic infrastructure (such as roundabouts, traffic lights, stalemate intersections, railway level crossings) • On open or private roads including roads with moderate inclines and declines • Operations conducted during the day or night • Typical weather conditions • While at a depot, base or warehouse • While at a client workplace or worksite

Pre-operational inspections and equipment checks may include:	• Checking and topping up fluid levels
	• Checking:
	  • brakes
	  • operation of vehicle lights and indicators
	  • tyre pressures
	• Visually checking vehicle

Unit Sector(s)

Not applicable.

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Competency Field

LIC - Licensing

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TLILIC4009A Licence to operate a slewing mobile crane (up to 60 tonnes)

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor	This unit specifies the outcomes required to operate a slewing mobile crane (up to 60 tonnes) for licensing purposes. It encompasses the requirement for the up to 20 tonnes licence.

Application of the Unit

Application of the Unit	This unit requires the operator to plan the work, conduct routine checks, set up crane, transfer loads, mobile loads and shut down and secure the crane. This unit is based on the requirements of the National Standard for Licensing Persons Performing High Risk Work. This unit in its current form meets state and territory licensing requirements. Any alteration will result in a unit which is not acceptable to regulators for the purpose of licensing.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

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Employability Skills Information

Employability Skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency	*Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan work	1.1 Potential workplace ***hazards*** are identified 1.2 ***Hazard control measures*** are identified consistent with ***appropriate standards*** to ensure the safety of personnel and equipment 1.3 The weight of the load is identified and estimated in consultation with ***associated personnel*** 1.4 The ***crane*** is ***appropriate*** to the load/s and workplace conditions 1.5 Appropriate paths for the movement of loads in the work area are inspected and determined 1.6 Appropriate ***communication methods*** are identified with ***associated personnel***
2. Conduct routine checks	2.1 ***Crane*** is visually checked for any damage or defects 2.2 ***Crane*** is accessed in a safe manner 2.3 All ***signage and labels*** are visible and legible according to the ***appropriate standard*** 2.4 Routine pre-operational crane checks are carried out according to ***procedures*** 2.5 All ***controls*** are located and identified 2.6 Crane ***service logbook*** is checked for compliance 2.7 ***Crane*** is started according to ***procedures*** and checked for any abnormal noises

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ELEMENT	PERFORMANCE CRITERIA
	2.8 All ***crane safety devices*** are tested according to ***procedures***
	2.9 Post-start operational checks are carried out according to ***procedures***
	2.10 All ***communication equipment*** is checked for serviceability
	2.11 All damage and defects are reported and recorded according to ***procedures***, and appropriate action is taken
3. Set up cane	3.1 ***Ground suitability*** is checked
	3.2 ***Crane*** is driven to the work area according to ***procedures***
	3.3 ***Crane*** is positioned for work application and ***stability*** according to ***procedures***
	3.4 Appropriate ***crane configuration*** for work task is determined according to ***procedures*** (where applicable)
	3.5 Boom/jib and counterweight configuration data is input into the crane computer (as required)
	3.6 Appropriate ***hazard prevention***/***control measures*** are applied to the work area according to ***procedures***
	3.7 All ***communications equipment*** is tested for functionality
4. Transfer load	4.1 Lifts are determined within the capacity of the crane
	4.2 Boom/jib and hoist block is positioned over load following directions from ***associated personnel***
	4.3 ***Test lift*** is carried out according to ***procedures***
	4.4 Loads are transferred using all ***relevant crane movements*** according to ***procedures*** and the ***appropriate standard***
	4.5 All required ***communication signals*** are correctly interpreted according to ***procedures*** and the ***appropriate standard***
	4.6 ***Crane*** is operated according to ***procedures***
	4.7 Load movement is monitored constantly ensuring safety to personnel and load, and crane stability
	4.8 ***Unplanned and/or unsafe*** situations are responded to in line with ***procedures***
5. Mobile load	5.1 Suitability of ***planned route*** is checked for the crane according to ***procedures***
	5.2 ***Crane*** is configured to mobile load according to ***procedures***
	5.3 Load is moved using ***best mobile practice*** according to

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ELEMENT	PERFORMANCE CRITERIA
	the ***appropriate standard***
6. Shut down and secure crane	6.1 ***Crane*** boom/jib and equipment are stowed and secured where appropriate according to ***procedures*** and the ***appropriate standard*** 6.2 Relevant motion locks and brakes are applied (where applicable) 6.3 Outriggers/stabilisers are stowed and secured according to ***procedures*** 6.4 Crane is ***shut down*** according to ***procedures*** 6.5 Plates or packing are stowed and secured 6.6 Routine post-operational crane checks are carried out according to ***procedures*** 6.7 All damage and defects are reported and recorded according to ***procedures***, and appropriate action is taken

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This describes the essential skills and knowledge and their level required for this unit.
Required skills:
• Accurately record and maintain information relating to crane operations • Use communication techniques in the workplace including whistles, hand signals and use of two-way radios • Use interpersonal communication skills at a level sufficient to communicate with other site personnel • Load data into crane computer (where fitted) and check operation to accurately reflect the crane configuration • Operate a slewing mobile crane (21t up to 60t capacity) for the lifting and moving of loads to the safe working rated capacity in conjunction with other associated personnel • Apply risk assessment and hazard control strategies, including hierarchy of control as applied to the positioning and safe operation of the crane (particular awareness of the risks associated with overhead powerlines/electrical cables, wind, erection, pack up and crane stability) • Use and interpret crane manufacturer's specifications and data, including load charts, to enable the crane to be configured for the load • Verify problems and equipment faults and demonstrate appropriate response procedures

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REQUIRED SKILLS AND KNOWLEDGE
Required knowledge:
• Appropriate mathematical procedures for estimation and measurement of loads • Commonwealth, state or territory OH&S legislation, standards and codes of practice relevant to the full range of processes for the crane class • Level of literacy to be able to read and comprehend manufacturer's instructions, procedures and safety signs • Mobile slewing crane characteristics and capabilities to allow the configuration of the crane to suit the range of loads • Mobile slewing crane operating techniques • Understanding of the hierarchy of hazard identification and control • Organisational and workplace standards, requirements, policies and procedures for conducting operations for the crane class • Procedures for the recording, reporting and maintenance of workplace records and information • Rated capacity and working load limits (including use of crane load charts) • Typical routine problems encountered in the process and with equipment and adjustments required for correction

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, the range statement and the assessment guidelines for the Training Package.	
Overview of assessment	• Successful assessment of this unit meets the competency requirement of the National Standard for Licensing Persons Performing High Risk Work. • State/territory OH&S regulators have mandated the use of Assessment Instruments and Instructions for Assessment for this unit which have been endorsed by the national body responsible for OH&S matters.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	• Compliance with OH&S licensing legislation. • Effectively communicate and work safely with others in the work area. • Risk assessment and management procedures (particular awareness of the risks associated

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EVIDENCE GUIDE	
	with overhead powerlines/electrical cables, ground conditions, crane tipping and demolition sites). • Effectively complete the pre-operational check, positioning, stabilising, set up, operation, post-operational checks of a mobile crane including all functions to their maximum extension in the lifting and moving of loads to the safe working rated capacity of the mobile crane up to 60 tonne capacity in conjunction with other associated personnel. • Appropriate mathematical procedures for estimation of loads.

Context of and specific resources for assessment	• Assessment of the safe and effective application of knowledge and skill to workplace tasks (performance) must be undertaken using the endorsed Assessment Instrument.
	• Assessment of performance must be undertaken either in the workplace or in a realistically simulated workplace setting.
	• Assessors must ensure that the assessment in the workplace is organised to ensure that all the required equipment and materials and a suitable working area is made available to suit the assessment and the workplace.
	• Assessment must occur under standard and authorised work practices, safety requirements and environmental constraints.
	• Assessment is to comply with relevant appropriate standard requirements.
	• Applicants must have access to:
	  • Personal Protective Equipment (PPE) for the purpose of the Performance Assessment.
	  • appropriate slewing mobile crane (21tonne up to 60 tonne) and associated equipment in safe condition
	  • suitable loads as specified by the endorsed Assessment Instrument
	  • communication equipment (e.g. two-way radios, whistles, etc.)
	  • other associated personnel to sling and direct the loads.

Method of assessment	• Assessment must be conducted using the

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EVIDENCE GUIDE	
	endorsed Assessment Instruments. These Instruments provide advice on their application. • The use of '**simulators**' in the assessment of this unit of competency is **not acceptable**. • Assessment may be in conjunction with the assessment of other units of competency. • Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge. • Assessment must confirm a reasonable inference that competency is not only able to be satisfied under the particular circumstances, but is able to be transferred to other circumstances.
Guidance information for assessment	• Further information about endorsed Assessment Instruments may be obtained from State/territory OH&S regulators.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.	
Hazards	May include but not limited to: • ground stability (e.g. ground condition, recently filled trenches, slopes) • overhead hazards (e.g. powerlines, service pipes) • traffic (e.g. pedestrians, vehicles, other plant) • insufficient lighting • environmental conditions (e.g. wind, lightning, storms, etc.) • other specific hazards (e.g. dangerous materials)
Hazard control measures	Refers to the systematic process of eliminating or reducing the risk to personnel and property through the application of controls It includes the application of the hierarchy of control, the six-step preference of control measures

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RANGE STATEMENT	
	to manage and control risk: 1 elimination 2 substitution 3 isolation 4 engineering control measures 5 using safe work practices 6 personal protective equipment
Appropriate standard	May include: • codes of practice (mobile crane) • legislation • Australian standards • manufacturer's specifications • industry standards (where applicable)
Associated personnel	May include but not limited to: • riggers • doggers
Appropriate	May include but not limited to: • crane capabilities • environmental conditions (e.g. wind, lightning, storms, etc.)
Crane	May include a boom or jib, which is capable of being slewed (up to 60 tonnes capacity) The slewing mobile crane up to 60 tonnes classification encompasses the requirements for the up to 20 tonnes classification
Communication method	May include but not limited to: • verbal and non-verbal language • written instructions • signage • hand signals • listening • questioning to confirm understanding • appropriate worksite protocol
Signage and labels	May include but not limited to: • crane data plates/labels • load charts

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RANGE STATEMENT	
	• crane decals • control labels
Procedures	May include but not limited to: • manufacturer's guidelines (instructions, specifications or checklists) • industry operating procedures • workplace procedures (work instructions, operating procedures, checklists)
Controls	May include but not limited to: • luffing levers • hoisting and lowering levers • slewing levers including brake • boom extension levers (where fitted)
Service logbook	May include but not limited to: • any logbook • service book • history record system where the service and maintenance history is kept
Crane safety devices	May include but not limited to: • horns/sirens • audible and visual reversing devices • operator restraint devices • lights
Communication equipment	May include but not limited to: • fixed channel two-way radios • whistles • bells • buzzers NB: where radio communication equipment is used the transmitting frequencies of the equipment must be selected to prevent interference to or from other radio equipment being used in the vicinity of the crane
Ground suitability	May include but not limited to: • rough uneven ground • backfilled ground • soft soils

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RANGE STATEMENT	
	• hard compacted soil • rock • bitumen • concrete
Stability	May include but not limited to: • deploying outriggers • establishing correct size plates or packing • correctly positioning plates or packing
Crane configuration	May include but not be limited to: • boom/jib • fly-jib • counterweights
Hazard prevention/control measures	May include but not limited to: • safety tags on electrical switches/isolators • powerlines insulated • safety observer used inside exclusion zone • power disconnected • traffic barricades and control • pedestrian barricades • trench covers • movement of obstructions • personal protective equipment • adequate illumination
Test lift	The load is lifted just clear of the lifting plane to allow for checks to be safely made in consultation with associated personnel to ensure that: • near capacity loads do not overload the crane • loads of unusual shape or weight distribution are correctly slung • load measuring equipment can be used to verify the calculated weight of the load • all crane equipment is functioning properly • adjustments to the slinging can be made in a safe manner
Relevant crane movements	May include but not limited to: • telescope in and out • boom/jib up and down

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RANGE STATEMENT	
	• slew boom/jib • operation of outriggers/stabilisers • raise and lower hoist • travel
Communication signals	May include but not limited to: • stop - hand • stop - whistle • hoist up - hand • hoist up - whistle • hoist down - hand • hoist down - whistle • luff boom down - hand • luff boom down - whistle • luff boom up - hand • luff boom up - whistle • telescope out - hand • telescope out - whistle • telescope in - hand • telescope in - whistle • slew left - hand • slew left - whistle • slew right - hand • slew right - whistle • travel - hand
Unplanned and/or unsafe situations	May include but not limited to: • failure/loss of control (e.g. brakes and steering) • failure of equipment (e.g. hydraulic system) • environmental conditions (e.g. wind, lightning, storms, etc.)
Planned route	May include but not limited to: • unusual or difficult terrains • obstacles or obstructions
Best mobile practice	May include but not limited to: • minimum speed • gentle acceleration and braking (to minimise load swing) • minimum boom/jib length • carrying the load near to the ground surface

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RANGE STATEMENT	
	• boom/jib in line with the crane • boom/jib as low as possible • load faces uphill • use of handheld taglines
Shut down	May include but not limited to: • retracting boom/jib • retracting hoist rope and hook block • positioning/securing boom/jib • retracting outriggers/stabilisers • idling engine to stabilise temperature • turning off engine (where applicable) • removing key from ignition (where applicable) • locking and securing cabin (where applicable)

Unit Sector(s)

Not Applicable

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UEENEEC001B Maintain documentation

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the maintenance of the variety of documentation required to record work activities, purchases and expenses and compliance obligations. It encompasses documentation typically required in an electrotechnology enterprise, work instructions and procedures and time management.

Application of the Unit

Application of the Unit **2)**

This unit is intended for competency development entry-level employment-based programs incorporated in approved contracts of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

There are no prerequisite competencies for this unit.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a unit of competency	Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

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ELEMENT	PERFORMANCE CRITERIA
1 Prepare to maintain documentation	1.1 Documentation requirements and methods for the organisation/enterprise are identified, obtained and understood
	1.2 Advice is sought from the work supervisor, when necessary, to ensure the work is correctly documented and coordinate d effectively with others
	1.3 Forms required to document work are obtained in accordance with established routines and procedures
	1.4 OHS risk assessment and control measures are documented before work is commenced in accordance with established routine/procedures.
2 Maintain documentation.	2.1 Activities are documented promptly and at the appropriate time in accordance with established routine/procedures
	2.2 Documentation is checked for accuracy and clarity and any anomalies corrected
	2.3 Where applicable, signature is obtained from an appropriate person and the person's identification documented
	2.4 Where applicable, a copy of any required documentation is forwarded to an appropriate person in accordance with established routine/procedures
	2.5 Procedures for referring non-routine events to immediate supervisor for directions are followed

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and

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REQUIRED SKILLS AND KNOWLEDGE

maintaining documentation.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EC001B Maintaining documentation

Evidence shall show an understanding of maintaining documentation to an extent indicated by the following aspects:

T1. Enterprise communication methods encompassing:

- Communicating with personnel encompassing:
  - Oral communications
  - Written procedures and work instructions
- Communicating with suppliers
- Communicating with customers

T2. Work activities records encompassing:

- Purpose and extent of maintaining work activities records in an enterprise
- Types of records for maintaining work activities in an enterprise
- Methods for recording and maintaining work records
- Work records required by regulation requirements

T3. Using basic computers and applications encompassing:

- Starting up
- Selecting application
- Entering information
- Saving
- Printing

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit. It must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment	**9.1)** Longitudinal competency development approaches to

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EVIDENCE GUIDE

assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit shall be considered holistically. Each Element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this

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shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
- Apply sustainable energy principles and practices as specified in the performance criteria and range statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Maintain documentation in any electrotechnology enterprise information system, including:

    A Following enterprise documentation requirements.

    B Enabling documentation to communicate clearly to others.

    C Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment with the above listed items.

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

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EVIDENCE GUIDE

Where simulation is considered a suitable strategy for assessment it must ensure that the conditions for assessment are authentic and as far as possible reproduce and replicate the workplace and is consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to maintaining documentation.

Method of assessment

9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

For optimisation of training and assessment effort, competence in this unit may be assessed concurrently with any unit or units that require formal documentation.

Range Statement

RANGE STATEMENT

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit must be demonstrated by maintaining documentation in any electrotechnology enterprise information system.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

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Unit Sector(s)

Not Applicable

Competency Field

Competency Field **11)**

Commercial

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UEENEED101A Use computer applications relevant to a workplace

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the basic use of personal computers application relevant to a work function. It encompasses switching the computer on, applying user preferences, selecting basic applications, entering and retrieving information and printing files.

Note:

This unit applies to all aspects of Electrotechnology – engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.

Application of the Unit

Application of the Unit **2)**

This unit is intended for competency development entry-level employment-based programs incorporated in approved contracts of training. It may be used to augment previously acquired competencies.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a license to practice in the workplace. However, practice in this unit is subject to regulations directly

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License to practice **3)**

related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

UEENEEE101A	Apply Occupational Health Safety regulations, codes and practices in the workplace.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Prepare to use computer applications.	1.1	OHS procedures for a given work area are identified, obtained and understood through established routines and procedures.
		1.2	Established OHS risk control measures and procedures in relation to computer and keyboard use are followed.
		1.3	Information required for the use of the application is obtained from appropriate sources.
		1.4	Computer is started up and desktop icons are manipulated to access desired application, directories and files.
		1.5	On-screen instructions in relation to any anomaly such as a virus warning are followed.
		1.6	Help directory is used to resolve any straightforward start up or access issues or anomalies.
2	Use computer basic application.	2.1	Established OHS risk control measures and procedures for carrying out the work are followed.
		2.2	Information is added, altered or deleted as needed in accordance with application user instructions.
		2.3	Routine checks are made to ensure accuracy of information in accordance with quality requirements.
3	Output information	3.1	Completed files are stored appropriately in

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ELEMENT	PERFORMANCE CRITERIA	
from an application.		accordance with enterprise requirements.
	3.2	Files are printed for a formal record and/or to forward to others.
	3.3	Files are sent via email in a readable format.
4 Shut down computer.	4.1	Files are named, arranged, saved and backed up in accordance with enterprise requirements.
	4.2	Computer shutdown procedures are followed and computer switched off.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices using basic computer applications relevant to a workplace.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-ED101A Basic Computer Applications

Evidence shall show an understanding of computer use basics to an extent indicated by the following aspects:

T1 Starting up

T2 Selecting application

T3 Entering information

T4 Saving

T5 Printing

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit and must be read in

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EVIDENCE GUIDE

conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be ‘rich’ in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its ‘richness’. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEE11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Use basic computer applications relevant to workplace as described in 8) and including:

A	Correctly starting-up a computer.
B	Dealing with anomalies appropriately.
C	Following application instructions to input and output information.
D	Storing information appropriately.

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E	Outputting information to a printer.
F	Forwarding information via email and/or web mail in a readable format.
G	Producing, storing and forwarding engineering related reports and/or results using at least three computer applications according to requirements
H	Shutting down a computer correctly
I	Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment with the above listed items.

Note:

Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified.

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

In addition to the resources listed above, evidence should show demonstrated competency to produce, store and forward engineering related reports and/or results using a range of

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computer applications.

Method of assessment **9.4)**

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no concurrent assessment recommendations for this unit.

Range Statement

RANGE STATEMENT

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall/may be demonstrated in relation to at least three of the following using computer applications to produce, store and forward engineering related reports and/or results at a basic level.

- Word processing
- Spread sheet
- Drawings
- Business management
- Apparatus set-up
- Note:

Apparatus set-up applications are invariably vendor specific and include

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RANGE STATEMENT

icon-based integration and control applications.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Computer Systems

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UEENEEE102A Fabricate, assemble and dismantle utilities industry components

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers basic fitting and fabrication techniques as they apply in the various utilities industry work functions. It encompasses the safe use of hand, fixed and portable power tools; cutting, shaping joining and fixing using metallic and non-metallic materials; dismantling and assembling equipment; basic mechanical measurement and marking-out and reading drawings/diagrams.

Application of the Unit

Not Applicable

Licensing/Regulatory Information

1.2) **License to practice**

During Training: Competency development activities are subject to regulations directly related to licencing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace: The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

Other conditions may apply under State and Territory legislative and regulatory requirements.

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Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace

Employability Skills Information

Employability Skills **3)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Application of the Unit **4)**

4.1) General Application

This unit applies to persons entering work in utilities industry and may be used in school-based vocational programs.

4.2) Importation

RTOs wishing to import this unit into any qualification under the flexibility provisions of NQC Training Package Policy

Elements and Performance Criteria Pre-Content

6) Elements describe
the essential

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outcomes of a unit of competency

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare for dismantling, assembling and fabrication work.	1.1 OHS procedures for a given work area are obtained and understood through established routines and procedures.
	1.2 Established OHS risk control measures and procedures in preparation for the work are followed.
	1.3 Safety hazard not previously identified are reported and advice on risk control measures is sought from the work supervisor.
	1.4 The nature of the work is obtained from documentation and from work supervisor to establish the scope of work to be undertaken.
	1.5 Advice is sought from the work supervisor to ensure the work is coordinated effectively with others.
	1.6 Materials required for the work are obtained in accordance with established routines and procedures.
	1.7 Tools, equipment and measuring devices needed to carry out the work are obtained and checked for correct operation and safety.
	1.8 Cutting tools such as drills and chisels are sharpened to suit the material on which they are to be used.
2 Dismantle and assemble utilities industry apparatus.	2.1 Established OHS risk control measures and procedures for carrying out the work are followed.
	2.2 Circuits/machines/plant are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
	2.3 Appropriate tools are selected and used correctly and safely in dismantling and assembling apparatus.
	2.4 Manufacturer apparatus dismantling and assembling guides are used where applicable.

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ELEMENT		PERFORMANCE CRITERIA	
		2.5	Components are marked or tagged during the dismantling to help ensure correct and efficient reassembly.
		2.6	Dismantled components and parts are stored to protect them against loss or damage.
		2.7	Apparatus is dismantled and assembled efficiently without waste of materials and energy and/or damage to apparatus and the surrounding environment or services.
		2.8	Procedures for referring non-routine events to immediate supervisor for directions are followed.
		2.9	Routine quality checks are carried out in accordance with work instructions.
		2.10	OHS risk control work completion measures and procedures are followed.
		2.11	Work site is cleaned and made safe in accordance with established procedures.
		2.12	Work supervisor is notified of the completion of the work in accordance with established procedures.
3	Fabricate utilities industry components.	3.1	Established OHS risk control measures and procedures for carrying out the work are followed.
		3.2	Circuits/machines/plant are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
		3.3	Appropriate tools are selected and used correctly and safely in fabricating components.
		3.4	Drawings and instruction for the fabrication of components are followed.
		3.5	Component dimensions are determined directly or by calculation from information given in job drawings and instructions.
		3.6	Components are fabricated efficiently without waste of materials and energy and/or damage to the surrounding environment or services.

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ELEMENT	PERFORMANCE CRITERIA	
	3.7	Procedures for referring non-routine events to immediate supervisor for directions are followed.
	3.8	Routine quality checks are carried out in accordance with work instructions.
	3.9	OHS risk control work completion measures and procedures are followed.
	3.10	Work site is cleaned and made safe in accordance with established procedures.
	3.11	Work supervisor is notified of the completion of the work in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and fabricating, dismantling, assembling of utilities industry components.

The knowledge and skills shall be contextualised to current industry standards, technologies and practices.

KS01-EE102A Hand and power tools and their application

Evidence shall show an understanding of hand and power tools and their application to an extent indicated by the following aspects:

T1 Mechanical drawing interpretation and sketching encompassing:

- drawing standards and conventions used in drawings of mechanical components as specified in AS1100
- basic abbreviations and symbols used in drawing of mechanical components
- interpretation of mechanical drawings commonly used in the electrotechnology industry (orthogonal projection, third angle - detail and assembly drawings, pictorial views)
- laying out a drawing of mechanical components using engineering drawing convention.
- freehand drawings of mechanical components showing all information needed for its manufacture/fabrication

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REQUIRED SKILLS AND KNOWLEDGE

T2 Workshop planning and materials encompassing:

- methods used to work safely in an industrial work environment.
- typical non-electrical hazards in the workplace
- control measures for dealing with hazards identified.
- Conducting a risk assessment on a given work environment, documenting and assessing the risks identified
- type of metallic and non-metallic materials used in the electrotechnology industry and application of the common materials
- planning process

T3 Measuring and marking out encompassing:

- reasons for measuring and marking out
- tools used for marking out
- measuring and marking out a project accurately following correct procedures.
- sustainable energy work practices related to reducing waste when marking out.

T4 Holding and cutting encompassing:

- common tools for holding (bench vices, multi-grips, vice grips, wrenches).
- common tools for cutting metallic and non-metallic material (hacksaws, wood saws, chisels, pliers, files)
- procedure for using a range of tools for cutting, shaping, and finishing metallic and non-metallic materials
- safety procedures when using holding and cutting tools

T5 Drills and drilling encompassing:

- types of drills used in the electrotechnology industry
- sharpening twist drills
- drilling metallic and non-metallic components
- safe use of a bench drill

T6 Tapping and threading encompassing:

- type and size of commonly used threads used in electrotechnology work
- taps and tap wrenches
- tapping metallic and non-metallic components
- stock and die tools
- threading metallic and non-metallic components

T7 General Hand Tools encompassing:

- hammers used in electrotechnology work
- screwdrivers used in electrotechnology work
- spanners and sockets used in electrotechnology work
- pliers used in electrotechnology work
- assembling components applicable to electrotechnology industry using a variety of

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REQUIRED SKILLS AND KNOWLEDGE

hand tools.

T8 Joining techniques encompassing:

- types of machine screws and nuts
- forms of welding (Oxy-acetylene, electric arc welding).
- forms of brazing and hard soldering
- process of soft soldering
- joining components using machine screws
- joining components using welding, brazing or soldering techniques

T9 Portable electric power tools encompassing:

- portable electric power tools (grinders, drills, jigsaws, saws)
- applications of portable electric power tools used in the electrotechnology work.
- using portable power tools.
- fabricating components using power tools (drills, grinders)

T10 Sheet metal work encompassing:

- types of sheet metal materials used in the electrotechnology work.
- names and applications of the types of fabrication materials.
- tools used with sheet metals in electrotechnology work (hacksaw, tinsnips, guillotines, punches, notching tools, folding machines)
- techniques used in fabricating sheet metal (cutting, bending, drilling/punching, joining, cutting mitres).
- marking out, cutting, bending, drilling and/or cutting and/or punching holes, joining and cutting mitred joints using sheet metal.
- sustainable energy work practices to reducing waste when fabricating using sheet metal.
- fabricating components using sheet metal and fabrication tools.

T11 Low tolerance measurement encompassing:

- tolerance
- techniques in using vernier callipers
- techniques in using micrometers.
- using vernier callipers to measure engineering components
- using micrometers to measuring engineering components

T12 Dismantling and assembly techniques encompassing:

- tools used in dismantling and assembling electrotechnology equipment (spanners, screwdrivers, bearing pullers, etc).
- procedures for ensuring the safe treatment of dismantled components.
- dismantling electrical, electronic, instrumentation or refrigeration/air conditioning piece of equipment using correct procedures.
- assembling electrical, electronic, instrumentation or refrigeration/air conditioning piece of equipment using correct procedures.

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Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.**1**)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the

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EVIDENCE GUIDE

Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Fabricate, dismantle, assemble of utilities industry components as described in 8) and including:

    A Selecting and using hand tools appropriate to a task correctly and safely

    B Selecting and using power tools appropriate to a task correctly and safely

    C Sharpening at least two drill bits each for use different types of material.

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EVIDENCE GUIDE

D Interpreting mechanical drawings/diagrams and instructions correctly.

E Dismantle and assemble an apparatus relevant to utilities industry discipline in which competency is sought.

F Fabricate a component relevant to the utilities industry discipline in which competency is sought.

G Dealing with unplanned events

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to dismantling, assembling and fabricating utilities industry components.

Method of assessment

9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent

9.5)

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EVIDENCE GUIDE

assessment and relationship with other units	For optimisation of training and assessment effort, competency development in this unit may be arranged concurrently with unit:

Range Statement

RANGE STATEMENT

8) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to installation, fault finding, maintenance, repair or development work functions in any of the following disciplines:

- Electrotechnology Disciplines
- Gas industry Disciplines
- ESI Transmission, Distribution and Rail Disciplines
- ESI Generation Disciplines

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Competency Field

2.3) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

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2.3) Literacy and numeracy skills

Competency Field **5)**

Utilities industry

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UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers the use of drawings, diagrams, cable schedules, standards, codes and specifications as they apply to the various electrotechnology work functions. It encompasses the rudiments for communicating with schematic, wiring and mechanical diagrams and equipment and cable/connection schedules, manuals, site and architectural drawings and plans showing the location of services, apparatus, plant and machinery and understanding the use and format of compliance standards and job specifications.

Application of the Unit

Not Applicable

Licensing/Regulatory Information

1.2) **License to practice**

During Training: Competency development activities are subject to regulations directly related to licencing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace: The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

Other conditions may apply under State and Territory legislative and regulatory requirements.

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Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace

Employability Skills Information

Employability Skills **3)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Application of the Unit **4)**

4.1) General Application

This unit applies to competency development entry-level employment based programs incorporated in approved contracts of training.

4.2) Importation

RTOs wishing to import this unit into any qualification under the flexibility provisions of NQC Training Package Policy

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a unit of competency

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Prepare to use drawings, diagrams, schedules and manuals.	1.1	Established OHS risk control measures and procedures are followed.
		1.2	The need for drawings, diagrams, schedules or manuals is determined from the nature of the work to be undertaken.
		1.3	Established routines and procedures are followed to obtain drawings, diagrams, schedules or manuals required for the work to be undertaken.
2	Use drawings, diagrams, schedules and manuals to obtain job information.	2.1	Drawings, diagrams, schedules and/or manuals are selected, appropriate to the work being undertaken.
		2.2	Drawings, diagrams and schedules are interpreted using knowledge of drawing layouts, conventions and symbols.
		2.3	Dimensions are extracted from drawings and diagrams for application to work undertaken.
		2.4	Location of equipment is determined from equipment schedules and location diagrams.
		2.5	Manuals are reviewed to ascertain their format and where information relevant to the work to be undertaken is located.
		2.6	Information given in manuals is interpreted in relation to the work to be undertaken.
3	Use drawings, diagrams, schedules and manuals to	3.1	Drawing conventions are used in neat freehand drawings to convey information and ideas to others involved in the work to be undertaken.

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ELEMENT	PERFORMANCE CRITERIA	
convey information and ideas.	3.2	Drawing conventions are used to neatly correct freehand original job drawing to show final 'as-installed' arrangement.
	3.3	Corrected drawings are forwarded to appropriate person(s) in accordance with established procedures.
4 Prepare to use compliance standards, codes and specifications.	4.1	Compliance Standards and Codes that apply to particular disciplines are sought and obtained.
	4.2	The format of compliance Standards and Codes that apply to particular disciplines are reviewed and understood.
	4.3	The purpose and format and typical content of job specifications are reviewed and understood.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and using drawings, diagrams, cable schedules, standards, codes and specifications.

The knowledge and skills shall be contextualised to current industry standards, technologies and practices.

KS01-EE107A Drawings, diagrams and schedules

Evidence shall show an understanding of drawings, diagrams and schedules used in electrotechnology work to an extent indicated by the following aspects:

T1 Architectural drawings encompassing:

- site plans, floor plans detailed drawings and standard drawings
- architectural floor plan to determine the power and lighting or communications / audio/ video layouts required in a domestic installation
- site plan to locate the service point, consumers mains, communication services, main switchboard, distribution boards and/or builders supplies.
- standard drawing scales to determine the actual lengths represented by dimensions on an architectural drawing.
- reading and interpretation of floor plans to determine the location of the electrical/

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REQUIRED SKILLS AND KNOWLEDGE

communication/audio accessories and appliances.

- Australian standard symbols used on floor plans to show the location of the accessories and appliances as detailed in an electrical schedule.

T2 Electrical drawings encompassing:

- types of electrical drawings: block, circuit, wiring and ladder diagrams
- purpose and application of block, circuit, wiring diagrams and ladder diagrams
- Australian standard symbols used to represent components on electrical diagrams.
- conventions used in and the features of circuit diagrams
- converting a circuit diagram to a wiring diagram
- identification of cable type, origin and route from a cable schedule.
- developing a cable schedule for a given installation.

T3 Circuit diagrams encompassing:

- purpose of circuit diagrams in the electrotechnology industry
- conventions used in and the features of circuit diagrams
- sketching basic circuit diagrams
- common symbols used in circuit diagram (Australian Drawing Standard AS/NZS 1102)
- developing switching charts to identify the terminals of various types of switches
- connecting equipment using circuit diagrams.

T4 Wiring diagrams encompassing:

- purpose of wiring diagrams in the electrotechnology industry
- conventions used in and the features of wiring diagrams
- sketching basic wiring diagrams
- common symbols used in wiring diagram (Australian Drawing Standard AS/NZS 1102)
- connecting equipment using wiring diagrams.

T5 Building construction drawings and diagrams encompassing:

- building types: timber frame, brick veneer, double brick and metal frame.
- identification of different types of: footings, floors, external walls, roofs, interior walls
- typical cable routes through buildings, structures and premises
- sequence of each constructional stage for brick, brick veneer and timber cottages
- identification of the stages at which the electrical/communications - first and second fixing occurs in the constructional sequence
- areas of cooperation between electrical/communications and other building trades

KS02-EE107A Introduction to regulations, compliance standards and codes

Evidence shall show an understanding of regulations, compliance standards and codes that apply to electrical work to an extent indicated by the following aspects:

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REQUIRED SKILLS AND KNOWLEDGE

T1 Regulation for undertaking electrical work encompassing:

- scope of work covered by licensing in the electrotechnology industry (Electrical licensing)
- legislative requirements for ensuring electrical or electronic equipment is safe i.e. compliance requirements of electrical installations

T2 Standards philosophy and format encompassing:

- performance verses prescriptive requirements
- purpose of technical standards and their development
- role of standards Australia/New Zealand, International Organisation for Standardisation (ISO) and the International Electrotechnical Commission (IEC)
- how standards are used in compulsory and accreditation compliance schemes.
- arrangement and use of technical standards in relation to electrical and electronic work
- how to read and apply a standard.
- Standards and codes that apply to all types of electrical installations
- Standards include Standards mandated under regulation (e.g. Wiring Rules) or by an authority, deemed-to-comply standard and local service requirements (e.g. Service rules).
- Codes include those applicable to electrical safe working practices and some aspects of the Building Code of Australia.

T3 Purpose, format and content of typical job specifications encompassing:

- NATSPEC specification system - provide the most common templates on which job specification are written.

Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment	**9.1**) Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment

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intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.**2**)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as

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EVIDENCE GUIDE

specified in the performance criteria and range statement

- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Use drawings, diagrams, schedules, standards, codes and specifications as described in 8) Range and including:

    A Identifying drawings, diagrams, schedules and manuals relevant to the work to be undertaken.

    B Interpreting drawings, diagrams, schedules and manuals correctly.

    C Using correct conventions in freehand drawings.

    D Giving correct information in freehand drawings.

    E Obtaining compliance Standards and Codes applicable to particular disciplines

    F Reviewing and understanding the format of compliance Standards and Codes that apply to particular disciplines

    G Reviewing the format and content of typical job specifications.

    H Dealing with unplanned events

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment

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EVIDENCE GUIDE

environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to using drawings, diagrams, schedules and manuals.

Method of assessment

9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

For optimisation of training and assessment effort, competency development in this unit may be arranged concurrently with units covering the use of drawings, diagrams, schedules, standards, codes or specifications is required.

Range Statement

RANGE STATEMENT

8) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to assembly, installation, fault finding, maintenance or development work functions in any of the following disciplines:

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RANGE STATEMENT

- Appliances
- Business equipment
- Computers
- Data Communications
- Electrical
- Electrical Machines
- Electronics
- Fire protection
- Instrumentation
- Refrigeration and Air Conditioning
- Renewable / sustainable energy, and
- Security technology

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Competency Field

2.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Custom Content Section

Competency Field **5)**

Electrotechnology

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UEENEEE117A Implement and monitor energy sector OHS policies and procedures

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the mandatory requirements of persons in a supervisory role to implement and monitor an organisation's occupational health and safety policies, procedures and programs. It encompasses understanding an organisation's OHS obligations, providing safety information to staff, implementing and monitoring participative arrangements, safety procedures and training and maintaining safety records.

Application of the Unit

Application of the Unit **2)**

This unit addresses information, processes and techniques for the application of general occupational health and safety requirements in workplaces and is essential for employees work supervisory responsibilities. The unit is based on Generic Competency A in the National Guidelines for Integrating OHS Competencies into National Industry Competency Standards [NOHSC: 7025 (1998) 2nd Edition].

Note:
All States/Territories and the Commonwealth have enacted legislation that establishes a general duty of care for workplace parties to ensure healthy and safe working conditions. In most workplaces, the final responsibility for providing a healthy and safe working environment, as far as practicable, rests with the employer. Employees also have a duty of care in relation to OHS that ensures their health and safety and that of others in the

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workplace. The relevant jurisdictional OHS legislation should always be consulted to ascertain the exact duties set down for employers and employees.

Licensing/Regulatory Information

License to practice **3)**

The competency described in this unit does not directly require a license to practice but is subject to regulations for occupational health and safe and contracts of training where they apply.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

There are no prerequisite competencies for this unit.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability

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Employability Skills	**5)** Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Provide OHS information to the work group.	1.1 Relevant provisions of occupational health and safety legislation and codes of practice are accurately and clearly explained to the work group.
	1.2 Information on the organisation's occupational health and safety policies, procedures and programs is provided in a readily accessible manner and is accurately and clearly explained to the work group.
	1.3. Information about identified hazards and the outcomes of risk assessment and risk control procedures is regularly provided and is accurately and clearly explained to the work group.
2 Implement and monitor participative arrangements for the management of OHS.	2.1 Organisational procedures for consultation over occupational health and safety issues are implemented and monitored to ensure that all members of the work group have the opportunity to contribute.
	2.2 Issues raised through consultation are dealt with and resolved promptly or referred to the appropriate personnel for resolution in accordance with workplace procedures for issue

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ELEMENT	PERFORMANCE CRITERIA	
		resolution.
	2.3	The outcomes of consultation over occupational health and safety issues are made known to the work group promptly.
3. Implement and monitor the procedures for identifying hazards, assessing risk and controlling risks.	3.1	Existing and potential hazards in the work area are identified and reported so that risk assessment and risk control procedures can be applied.
	3.2	Work procedures to control risks are implemented and adherence to them by the work group is monitored in accordance with workplace procedures.
	3.3	Existing procedures to control risks are implemented and adherence to them by the work group is monitored in accordance with workplace procedures.
	3.4	Inadequacies in existing risk control measures are identified in accordance with the hierarchy of control and reported to designated personnel.
	3.5	Inadequacies in resource allocation for implementation of risk control measures identified and reported to designated personnel.
4 Implement the procedures for dealing with hazardous events.	4.1	Workplace procedures for dealing with hazardous events are implemented whenever necessary to ensure that prompt control action is taken.
	4.2	Hazardous events are investigated to identify their cause in accordance with investigation procedures.
	4.3	Control measures to prevent recurrence and minimise risks of hazardous events are implemented based on the hierarchy of control if within scope of responsibilities and competencies or alternatively referred to designated personnel for implementation.

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ELEMENT	PERFORMANCE CRITERIA
5 Implement and monitor the procedures for OHS training.	5.1 Occupational health and safety training needs are identified accurately, specifying gaps between occupational health and safety competencies required and those held by work group members.
	5.2 Arrangements are made for fulfilling identified occupational health and safety training needs in both on and off-the-job training programs in consultation with relevant parties.
6 Implement and monitor the procedures for maintaining OHS records.	6.1 Occupational health and safety records for work area are accurately and legibly completed in accordance with workplace requirements for occupational health and safety records and legal requirements for the maintenance of records of occupational injury and disease.
	6.2 Aggregate information from the area's occupational health and safety records is used to identify hazards and monitor risk control procedures within work according to organisational procedures and within scope of responsibilities and competencies.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and implementing and monitoring energy sector OHS policies and procedures

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EE117A Energy sector Occupational Health and Safety, supervisory responsibilities

Evidence shall show an understanding of OHS enterprise responsibilities to an extent indicated by the following aspects:

T1 Provisions of relevant occupational health and safety legislation

T2 Principles and practice of effective occupational health and safety management

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REQUIRED SKILLS AND KNOWLEDGE

T3 Workplace hazards, range and selection of control measures

T4 Organisational health and safety management systems and policies and procedures needed for legislative compliance

T5 Impact of characteristics and composition of the workforce on occupational health and safety management

T6 Relevance of occupational health and safety management to other organisational management policies, procedures and systems.

T7 Analysis of entire work environment and judge occupational health and safety interventions

T8 Analysis of relevant workplace data

T9 Ability to assess resources needed for risk control.

Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by

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various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEE11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the essential knowledge

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and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.

- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Implement and monitor energy sector OHS policies and procedures as described in 8) and including:

A Providing OHS information to the work group.

B Implementing and monitoring participative arrangements for the management of OHS.

C Implementing and monitoring the procedures for identifying procedures for identifying hazards, assessing risks and controlling risks.

D Implementing the procedures for dealing with hazardous events.

E Implementing and monitoring the procedures for OHS.

F Implementing and monitoring the procedures for maintaining OHS records.

G Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment with the above listed items.

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials

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to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to implementing and monitoring energy sector OHS policies and procedures.

Method of assessment **9.4)**

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

For optimisation of training and assessment effort, competence in this unit may be assessed concurrently with other related units making up a qualification or possible skill clusters.

Components of this unit are included in the critical aspects of evidence of all units to help ensure the appropriate level of responsibility for safety has been acquired.

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Range Statement

RANGE STATEMENT

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to implementing and monitoring energy sector OHS policies and procedures with the following attributes:

- organisation's OHS obligations
- safety information to staff
- participative arrangements implementation and monitoring
- safety procedures
- training
- safety records maintained

Implementing and monitoring the mandatory requirements of persons in a supervisory role an organisation's occupational health and safety policies, procedures and programs shall be demonstrated in the following:

- Relevant Occupational Health and Safety legislation, regulations and codes of practice related to hazards present in the industry and particular workplace
- Implementation of OHS and the specific safety procedures and work instructions for particular workplace

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Electrotechnology

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UEENEEM020A Attend to breakdowns in hazardous areas - gas atmospheres

Modification History

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers the explosion-protection aspects of attending to a breakdown in a hazardous area or of explosion-protected and associated equipment. It requires the ability to ascertain the nature of a breakdown, the extent of repairs required and the personnel needed to repair the breakdown.

This unit is directly equivalent to the Unit *2.3 Attend to breakdowns in hazardous areas* in the Australian/New Zealand Standard *AS/NZS 4761.1 Competencies for working with electrical equipment for hazardous areas* (*EEHA*) *Part 1*: *Competency Standards*. Equivalence includes endorsement in the explosion-protection techniques listed in the Range statement of this unit.

Application of the Unit

Application of the Unit **4**)

This unit augments other formally-acquired competencies in a relevant industry and shall be used only in conjunction such competencies and is intended to apply to plant/equipment service and maintenance job functions in the disciplines of electrical, instrumentation, communication or at AQF 3 or higher. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

1.2) License to practice

The skills and knowledge described in this unit require a license to practice in the workplace subject to regulations for undertaking of electrical work. Practice in workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Granting competency in this unit shall be made after or concurrently with confirming competency in any one of the following units.

UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area

AND

Competencies in attending to breakdowns in general electrical or instrumentation equipment mechanical plant/equipment service and maintenance at least at AQF 3 or equivalent. Examples are (but not limited to):

UEENEEG005B	Verify compliance and functionality of general electrical installations
UEENEEI012B	Verify compliance and functionality of process control installations
MEM7.1B	Perform operational maintenance of machines/equipment

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Employability Skills Information

Employability Skills **3)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a unit

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to attend breakdown.	1.1 Nature of the breakdown is confirmed with appropriate personnel to establish the need to enter the hazardous area.
	1.2 Maintenance records of equipment related to the reported breakdown are review for possible causes.
	1.3 Safety to enter the hazardous area is established in accordance with established procedures and relevant clearance to do the work is obtained.
	1.4 Testing devices and tools, anticipated as being needed for the work, are obtained and checked for correct operation and safety.
2 Evaluate extent of work.	2.1 OHS policies and procedures for working in a hazardous area are followed.
	2.2 Extent of breakdown is evaluated and confirmed with appropriate personnel.
	2.3 Other personnel required to determine cause and

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ELEMENT	PERFORMANCE CRITERIA	
		rectify breakdown is ascertained from available evidence and arrangements made for their attendance where applicable.
	2.4	Extent of repair work is ascertained from available evidence and confirmed with appropriate personnel.
	2.5	Limits of repair work that can be carried out in-situ are established with regards to explosion risk and in accordance with established procedures and requirements.
3 Arrange repair work.	3.1	Equipment is isolated in accordance with established procedures.
	3.2	Circuits of equipment being withdrawn from service are terminated or isolated safely and in manner approved for the classification of the area.
	3.3	Certification documentation for replacement equipment is sighted to ensure that it is identical with the equipment it replaces and is in accordance with the explosion-protection system design.
	3.4	Repair work carried out in-situ is done in accordance with established procedures and requirements.
4 Confirm completion of work.	4.1	Explosion-protected equipment and systems are inspected and tested by appropriately qualified personnel after repairs are completed to ensure the integrity of the system.
	4.2	Appropriate personnel are notified of the completion of the repair work and details are documented in accordance with established procedures and requirements.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and attending to breakdowns in hazardous areas.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EM020 Explosion protection, certification and techniques A

Evidence shall show an understanding of Ex certification schemes and techniques to accepted Standards to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).
- Typical situations where the flameproof explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Flameproof technique;
- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).
- Typical situations where the Increased safety explosion-protection technique is used;

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REQUIRED SKILLS AND KNOWLEDGE

- Actions or conditions that would void the protection provided the Increased safety technique;
- The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).
- Typical situations where the Non-sparking explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Non-sparking technique; and
- The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).
- Typical situations where the Intrinsic safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Intrinsic safety;
- The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).
- Typical situations where the pressurization explosion-protection technique is used;
- Actions or conditions that would void the protection provided the pressurization technique;
- The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

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REQUIRED SKILLS AND KNOWLEDGE

- The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).
- Typical situations where the each dust explosion-protection technique is used;
- Actions or conditions that would void the protection provided the each dust technique;
- The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

- The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.
- Compliance plate markings.
- Limitations of non-metallic or specific alloy enclosures.
- The purpose of conformity and certification/approval for equipment used in hazardous areas.
- Environmental conditions that may impact on explosion-protection techniques.
- The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).
- Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit and must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs

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EVIDENCE GUIDE

and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work influence decisions about how/how much the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria must be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk

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control measures as specified in the performance criteria and range statement

- Apply sustainable energy principles and practices as specified in the performance criteria and range statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Attend to breakdowns in hazardous areas as described in 8) and including:
    - A Following work permits and clearance procedures
    - B Monitoring hazards and following evacuation procedures
    - C Following plant and electrical isolation procedures
    - D Correctly evaluating extent of breakdowns
    - E Interpreting certification documentation in relation to repair and replacement
    - F Following established breakdown procedures
    - G Applying relevant contingency management skills

Context of and specific resources for assessment

9.3) This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should also be part of the formal learning/assessment environment.

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EVIDENCE GUIDE

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to attending to breakdowns in hazardous areas.

Method of assessment

9.**4**)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment primarily intended for learning/assessment which incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

9.**5**)

For optimisation of training and assessment effort, competency development in this unit may be arranged concurrently with unit:

UEENEEM080A Report on the integrity of explosion-protected equipment in a hazardous area

Competency unit in attending to breakdowns in general electrical or instrumentation equipment mechanical plant/equipment service and maintenance at least at AQF 3 or equivalent chosen as a prerequisite.

Range Statement

RANGE STATEMENT

8) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

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RANGE STATEMENT

This unit shall be demonstrated in relation to any classified gas hazardous area and all the following explosion-protection techniques:

- Flameproof, (Ex 'd')
- Increased safety, (Ex 'e')
- Intrinsic safety, (Ex 'i')
- Non-sparking, (Ex 'n')

The following constants and variables included in the element/performance criteria in this unit are fully described in the Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Competency Field

2.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Custom Content Section

Competency Field **5)**

Hazards

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UEENEEM076A Use and maintain the integrity of a portable gas detection device

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers the gas detection aspects of ensuring a work place is safe from explosive and toxic gases and vapours. It requires the ability to use measuring instruments accurately, follow written instructions and to write instructions for others.

This unit is directly equivalent to the Unit *2.4 Use and maintain the integrity of portable gas detection devices* in the Australian/New Zealand Standard *AS/NZS 4761.1 Competencies for working with electrical equipment for hazardous areas* (*EEHA*) *Part 1*: *Competency Standards*. Equivalence includes endorsement in the explosion-protection techniques listed in the Range statement of this unit.

Application of the Unit

Application of the Unit **4**)

This unit augments other formally-acquired competencies in a relevant industry and shall be used only in conjunction such competencies. It applies to job function that requires entry to a designated hazardous area to undertake repair, maintenance or construction work at AQF 3 level or higher. It is suitable for employment-based programs under an approved contract of training.

Note:

Examples of relevant industries include aviations, electrical installation and maintenance, fuel storage and dispensing industrial process, instrumentation and control,

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Application of the Unit **4**)

marine, material handling and storage, mining, and petrochemical.

Licensing/Regulatory Information

1.**2**) **License to practice**

The skills and knowledge described in this unit require a license to practice in the workplace subject to regulations for undertaking of electrical work. Practice in workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Granting competency in this unit shall be made after or concurrently with confirming competency in any one of the following units.

UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area

AND

Competencies required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent.

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Employability Skills Information

Employability Skills **3**)

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a unit

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to use portable gas detection device.	1.1 The need to initiate gas detection is identified by OHS requirements and established procedures.
	1.2 The gas or vapour to be detected is established from plant/site records or consultation with relevant personnel.
	1.3 Gas detection device(s) for the gas/vapour to be detected is/are checked for calibration and response in accordance with manufacturer instructions.
	1.4 Gas detection devices are checked for factors that could nullify the Ex rating. Note: This would include damaged casing, use of incorrect batteries and/or chargers, use of incorrect spare parts and accessories.
2 Establish safety of the area with regards to the presence of gases	2.1 OHS policies and procedures relating to gas/vapour detection are followed.

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ELEMENT	PERFORMANCE CRITERIA	
	or vapours.	
	2.2	Gas detection device is used in accordance with manufacturer instructions and with regards to environmental conditions.
	2.3	Observations of gas detection readings are recorded in accordance with established procedures.
	2.4	Safe-to-work is determined from gas detection reading and then clearance to work is issued in accordance with established procedures.
3 Monitor gas detection devices for the presence of gases/vapours.	3.1	The frequency of monitoring is determined from the nature of gas/vapour and the effect of environmental and local conditions (e.g. ambient temperature rise, density of gas/vapour, flash point, dew point and detector position).
	3.2	Others are instructed in procedures to carry out monitoring and these instructions are documented.
4 Follow procedures to maintain gas detection devices.	4.1	Gas detection devices are stored in accordance with manufacturer recommendations.
	4.2	Gas detection devices are formally checked and calibrated periodically in accordance with established site requirements and instrument accuracy.
	4.3	Storage, use and calibration record of the gas detection devices is maintained, in accordance with the established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and

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REQUIRED SKILLS AND KNOWLEDGE

using and maintaining the integrity of portable gas detection devices.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EM07 Portable gas detection devices 6A

Evidence shall show an understanding of portable gas detection devices to an extent indicated by the following aspects:

T1 Principles of gas detection and the use and care of portable gas detection devices encompassing:

- Fundamental principles in the use of gas and vapour instruments.
- Use of manufacturer's instruction manual (Instruction manuals include operating instructions, adjustment procedures, operational limitations, and storage).
- Calibration and response checking.

T2 Detecting gases and vapours encompassing:

- apparatus capability and users' knowledge;
- propagation of gases - This includes release of gas and vapours, ventilation, density, temperature and location.
- gases to be detected and not to be detected;
- intended application;
- environmental effects;
- safety when monitoring for flammable gases where personnel could be present;
- common properties of gases and vapours - This includes density of gases, vapours and their mixtures; effect of temperature on density; LEL and UEL of combustibles and toxicity.
- the differences between detecting gases and vapours - These include added complication of evaporation, condensation and temperature effects of vapours and their effect on propagation, calibration and detection, including sampling.

T3 Oxygen deficiency and effects on safety encompassing:

- chemical reaction of oxygen with solid products;
- chemical reaction of oxygen with gaseous products; and
- dilution of the air by displacement by some other gas or vapour.

T4 Measuring principles of catalytic sensors, electrochemical sensors, infrared sensors and semi-conductor sensors encompassing:

- common applications;
- limitations and safety;
- interferences of other gases with the measurement; and

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REQUIRED SKILLS AND KNOWLEDGE

- poisoning of the sensor.

NOTE: Detailed information on gas detection is given in AS/NZS 60079.29.2.

T5 Limits of gas detection of flammable (combustible) gas equipment, encompassing—

- limit to which flammable gas detection equipment will only detect gases and vapours that are present in the vicinity of the detector (or in the line of sight of open path apparatus); and
- limit to which flammable gas equipment will not detect combustible liquids as such, or combustible mists, dusts, or fibres.

T6 Limits of vapour detection of flammable (combustible) gas equipment (flammable gas detection equipment will only detect those vapours that do not condense at the temperature of the detector or its sampling equipment).

T7 Interpretation of gas detection instrument readings (behaviour) encompassing:

- upscale reading in the presence of a gas for which an instrument is not calibrated;
- causes of erratic indications;
- reading of low concentrations of gas of interest; and
- off-scale readings.

T8 Toxicity level of flammable gases and vapours and their potential for occurring in a given situation.

T9 Issues with gas and vapour detection in confined spaces.

T10 Use of the manufacturer’s instruction manual (operating instructions, adjustment procedures, operational limitations, storage).

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit and must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of 9.1)

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EVIDENCE GUIDE

Assessment

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work influence decisions about how/how much the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.**2**)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria must be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline,

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EVIDENCE GUIDE

work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
- Apply sustainable energy principles and practices as specified in the performance criteria and range statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Use and maintain the integrity of portable gas detection devices as described in 8) and including:
    - A Following work permits and clearance procedures.
    - B Monitoring hazards and following evacuation procedures.
    - C Determining whether the gas/vapour level in a work area is safe from explosive, toxic and oxygen deficiency aspects.
    - D Following procedures to maintain the integrity of gas detection devices
    - E Instructing others in the use of a portable gas detection device in relation to a specific activity.
    - F Applying relevant contingency management skills.

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

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EVIDENCE GUIDE

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should also be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to using and maintaining the integrity of portable gas detection devices.

Method of assessment

9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment primarily intended for learning/assessment which incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

For optimisation of training and assessment effort competency development in this unit may be arranged concurrently with the following units

UEENEEM080A Report on the integrity of explosion-protected equipment in a hazardous area

and

Competencies required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent chosen as a prerequisite

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Range Statement

RANGE STATEMENT

8) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to any classified hazardous area or confined space.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Competency Field

2.**2**) **Literacy and numeracy skills**

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Custom Content Section

Competency Field **5**)

Hazards

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UEENEEM080A Report on the integrity of explosion-protected equipment in a hazardous area

Modification History

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers the explosion-protection aspects of plant and machinery operation and maintenance. It requires the ability to visually identify any damage or deterioration of explosion-protected equipment, monitor changes in the explosion hazard and to implement procedures established to limit the risk of an explosion.

This unit is directly equivalent to the Unit 2.2 *Report on the integrity of explosion-protected equipment in hazardous areas* in the Australian/New Zealand Standard *AS/NZS 4761.1 Competencies for working with electrical equipment for hazardous areas* (*EEHA*) *Part 1*: *Competency Standards*. Equivalence includes endorsement in the explosion-protection techniques listed in the Range statement of this unit.

Application of the Unit

Application of the Unit **4**)

This unit augments other formally-acquired competencies in a relevant industry and shall be used only in conjunction such competencies. It applies to management, plant operation, maintenance and engineering job functions at AQF 2 or higher.

Note:

Examples of relevant industries include aviations, electrical installation and maintenance, fuel storage and dispensing industrial process, instrumentation and control, marine, material handling and storage, mining, and petrochemical

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Licensing/Regulatory Information

1.2) License to practice

The skills and knowledge described in this unit require a license to practice in the workplace subject to regulations for undertaking of electrical work. Practice in workplace and during training is also subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Granting competency in this unit shall be made only after competency required by a given industry or enterprise for plant or machinery operation or installations, maintenance or service functions at least at AQF 2 or equivalent. Examples are, (but not limited to).

UEENEEG005B	Verify compliance and functionality of general electrical installations
UEENEEI012B	Verify compliance and functionality of process control installations
MEM7.1B	Perform operational maintenance of machines/equipment
PMAOPS201B	Operate fluid flow equipment

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Employability Skills Information

Employability Skills **3**)

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a unit

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to work in hazardous area.	1.1 Nature of the explosion hazard in the area is known and the status of the explosion hazard is ascertained through established procedures.
	1.2 Operation and condition of plant and machinery, with regards to explosion-protection, is ascertained through established procedures.
	1.3 Established procedures for use of the plant and machinery, with regards to explosion-protection techniques used in the area, are followed.
2 Observe condition of explosion-protection system area.	2.1 OHS policies and procedures, with regards to explosion-protection, are followed.
	2.2 Performance of plant and machinery is monitored to identify faults that may affect the integrity of the explosion-protected equipment and wiring system.
	2.3 Observations of explosion-protected equipment and wiring are made during normal operations and visual non-conformances that may affect the

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ELEMENT	PERFORMANCE CRITERIA	
		integrity of the explosion-protection technique are identified.
	2.4	Explosion hazard monitoring equipment is observed and a potentially dangerous state of the hazard is identified, e.g. by using gas detectors.
3 Take actions to limit risk of an explosion.	3.1	Variations outside normal operating conditions are reported and documented in accordance with established procedures
	3.2	Non-conforming tools, equipment and testing devices are reported and documented in accordance with established procedures.
	3.3	Established procedures are followed in the event of a potential or immediate hazardous condition arising from any non-conformance identified in equipment/wiring or changes in the explosion hazard to a potentially dangerous state.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and reporting on the integrity of explosion protected equipment in hazardous areas.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EM080A Hazardous areas and explosion-protection principles

Evidence shall show an understanding of hazardous areas and explosion-protection principles (including working safely in hazardous areas), principles of the following explosion-protection techniques and visible conditions of explosion-protection equipment that indicate the protection is void and changes in the nature of the explosion hazard that may render the explosion-protection unsafe. to an extent indicated by the following aspects:

T1 Occupational Health and Safety responsibilities related to hazardous areas

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REQUIRED SKILLS AND KNOWLEDGE

encompassing:

- the main features and purpose of a 'clearance to work' system (includes hot work permit systems).
- typical safety procedures that should be followed before entering a hazardous area;
- the purpose of gas detectors and their limitations;
- effects of temperature on gas and vapour detection;
- frequency of monitoring for presence of gas or vapours, i.e. effects of temperature rise;
- factors affecting the accuracy of gas detectors, for example, contamination, condensation, temperature;
- safety in use of gas detectors, for example, 'read and run concept'
- the safety precautions to be taken when working in a hazardous area.

T2 The roles of the parties involved in the safety of hazardous areas encompassing:

- common Acts and Regulations related to the safety of hazardous areas and the Authorities responsible for their implementation;
- where assistance and further information can be obtained to assist persons with hazardous area responsibilities, for example, Standard bodies, experienced consultants; and
- the hazardous area responsibilities of the owner of premises in which a hazardous area exists; the occupier of premises in which a hazardous area exists; enterprises and personnel engaged in installation and/or maintenance of explosion-protection systems; enterprises and personnel engaged in the classification of hazardous areas and/or design of explosion-protection systems; enterprises and personnel engaged in the overhaul, modification and/or assessment of explosion-protected equipment; enterprises and personnel engaged in the inspection of explosion-protection installations; manufacturers of explosion-protected equipment; designated authorities; insurers.

T3 Properties of combustible substances and their potential to create an explosive hazard encompassing:

- condition in the workplace that will lead to an explosion;
- the terms 'combustion', 'ignition' and 'propagation';
- explosive range of substances encountered in the workplace i.e. LEL/UEL;
- explosive parameters of substances as given in tables of substance properties

Note: Combustible materials are gases, vapours (from liquids), and dusts; flash point.

- the difference between gases and vapours; and
- the toxic nature of gases and vapours and potential harmful consequences.

T4 The nature of hazardous areas encompassing:

- the Standards definition of a 'hazardous area';
- the recommended methods for classifying the type and degree of explosion hazard

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REQUIRED SKILLS AND KNOWLEDGE

in an area;

- hazardous area classifications as defined by Standards; and
- factors that are considered when a hazardous area is classified.
- the basics of how explosion-protection is achieved by the methods of exclusion, containment, energy limitation, dilution, avoidance of ignition source.

T5 Explosive-protected equipment encompassing:

- The principles of each explosion-protection technique, the methods used and how each technique works (Flameproof (Ex ‘d’); Increased safety (Ex ‘e’); Non-sparking (Ex ‘n’); Intrinsic safety (Ex ‘i’) and Pressurization (Ex ‘p’) for gas atmospheres and Dust-exclusion enclosures (Ex ‘tD’); Pressurization (Ex ‘pD’); Encapsulation (Ex ‘mD’); and Intrinsic safety (Ex ‘iD’) for dusts)
- How explosion-protected equipment is identified by the ‘Ex’ symbol marked on the equipment, including old equipment and equipment certified in another country.
- Visible conditions or actions that would void the explosion-protection provided by a particular technique.

T6 Explosion-protection visual checks encompassing:

- occupational, health and safety procedures to be followed before entering hazardous areas; and while conducting visual inspection.
- Visible defects in explosion-protected equipment and wiring.
- Conditions that may indicate a change in a given explosion hazard.
- Reporting defects in explosion-protected equipment and wiring - the purpose of a verification dossier; and various ways for reporting defects in explosion-protected equipment and wiring.
- procedures to be followed in the event of a change in the explosion hazard.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit and must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment	**9.1**) Longitudinal competency development approaches to

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EVIDENCE GUIDE

assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work influence decisions about how/how much the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria must be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this

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EVIDENCE GUIDE

shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
- Apply sustainable energy principles and practices as specified in the performance criteria and range statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Report on the integrity of explosion-protected equipment in hazardous areas as described in 8) and including:
    - A Following work permits and clearance procedures.
    - B Monitoring hazards and following evacuation procedures.
    - C Correctly operation of plant and machinery.
    - D Following plant and electrical isolation procedures.
    - E Identifying visual damage or deterioration of explosion-protected equipment.
    - F Reporting visual defects.
    - G Applying relevant contingency management skills.

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.

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- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should also be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to reporting on the integrity of explosion protected equipment in hazardous areas.

Method of assessment

9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment primarily intended for learning/assessment which incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

For optimisation of training and assessment effort, competency development in this unit may be arranged in combination with other competencies required by a given industry or enterprise for plant or machinery operation or in relation to installation, maintenance or service functions.

Range Statement

RANGE STATEMENT

8) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and

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RANGE STATEMENT

situations that will affect performance.

This unit shall be demonstrated in relation to any classified hazardous area.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Competency Field

2.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

2.2) Literacy and numeracy skills

Competency Field **5)**

Hazards

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UEGNSG004A Locate, prove and protect utility assets

Modification History

This unit is a revised version of the UEG11 unit UEGNSG003A Locate, prove and protect gas distribution assets

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers locating, proving and protecting utility assets in accordance with established procedures.

This encompasses low level short term protection of assets on basic work sites where utility industry operations occur including the gas industry, electricity supply industry, electrotechnology industry and the water industry.

Note: This competency standard unit does not include the supervision of third party works near a utility asset.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where utility industry operations occur including the gas industry, electricity supply industry, electrotechnology industry and the water industry, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 2 competency and is suitable for employment-based programs under an

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approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training.

In the workplace

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/ water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Prerequisite Unit(s) **4)**

UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

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ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to locate, prove and protect utility assets	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the site are provided and discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed, including relevant clearances/ no-go zones.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures.
	1.6	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.7	Tools, equipment and personal protective equipment needed to carry out the work are identified, obtained and checked for correct operation and safety.
	1.8	Materials, plans, diagrams, drawing and resources required for the work are obtained in accordance with established routines and procedures.
	1.9	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Locate, prove and protect utility assets	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Machines/plant/equipment are checked as being isolated where necessary in strict accordance WHS/OHS requirements and procedures.
	2.3	Appropriate materials, tools and equipment are selected and used correctly and safely.

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ELEMENT	PERFORMANCE CRITERIA	
	2.4	Asset is located and clearly marked using appropriate equipment and tools.
	2.5	Location of the asset proven using approved methods where permitted.
	2.6	Effective communication occurs with third parties when necessary prior to undertaking activities to ensure the protection of the utility asset
	2.7	Utility asset is adequately protected physically to ensure it is safe and secure.
	2.8	Work is carried out efficiently, to the required quality standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.9	Any WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.10	Procedures for referring non-routine events to immediate supervisor for directions are followed.
3 Complete work and of relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work site is tidied and made safe in accordance with established procedures or handed over for further work.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures.
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with and established procedures.

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Required Skills and Knowledge

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices and identifying, locating, proving and protecting utility assets.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the Required Skills and Knowledge is provided below. It forms an integral part of this unit.

KS01-G004A Utility assets

Evidence shall show an understanding of identifying, locating, proving and protecting utility assets in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, regulations, codes

T2. Enterprise procedures, plans and drawings

- asset plan reading

T3. Relevant Safety and Environmental hazards and mitigation measures

T4. Locate and mark utility and asset services

- relevant authorities or enterprises to contact regarding the location of other utilities services (gas, water, electricity, telecommunication, sewerage and storm water) including Dial Before You Dig.
- visual identification of utilities and service
- types of electronic and manual service locators

T5. Prove assets

- clearances and no-go zones requirements
- hand excavation techniques
- non-destructive methods (Hydrovac or Airvac)

T6. Identification of utilities and services conduits and cables

T7. Protection of assets:

- communication with relevant personnel
- installation of protection systems (barricades and signage)
- marking of assets

Evidence Guide

EVIDENCE GUIDE

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EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence

8.2)

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Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Locating, proving and protecting utility assets as described in the 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A –	All	• PPE

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Tools and Equipment		• Service locators • Traffic barricades
B – Procedures	All	• Interpret alignment sheets, maps/plans, technical drawings and symbols • Obtain and interpret procedures and/or work instructions • Apply relevant OHS legislation, regulations, codes of practice, policies and procedures • Advise stakeholders of upcoming work, and • Utilise Dial-Before-You-Dig information • Prove location of asset • Visually inspect asset • Protecting assets
C – Unplanned Events	At least one occasion	Deal with an unplanned event by drawing on required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

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These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for*

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RANGE STATEMENT

different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to identifying, locating, proving and protecting utility assets in accordance with relevant legislation, standards, codes and established procedures. This encompasses basic and safe work sites where utility industry operations occur including the gas industry, electricity supply industry, electrotechnology industry and the water industry.

It includes low level short term protection of assets, required for example while excavation is taking place. This includes communication with relevant personnel, installation of protection systems (barricades and signage) and marking of assets.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Legislation
- Safety equipment
- Emergency and hazardous work situations
- Established procedures and requirements
- Personal Protective equipment

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Utilities

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UEGNSG005A Prepare to work in the gas industry

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1)**

1.1) Descriptor

This unit covers the basic mandatory requirements of the regulations, codes and practices and how they apply to various gas industry work functions.

It encompasses an overview of the industry, types of gases, relevant mandatory safety regulations and organisational policies, procedures and work practices required for working in the Australian gas industry.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where Gas Industry operations occur including the transmission, distribution and LPG sectors. It is subject to all Environmental Legislative requirements, Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and Duty of Care requirements being met for the environment and the workplace.

This unit is intended as an entry level competency at AQF 2 for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under an approved contract of training

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Licensing/Regulatory Information

License to practice

3) License to practice

During Training:

Competency development activities are subject to regulations directly related to licencing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Environmental Legislation, Chemical Management, Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements

Pre-Requisites

Prerequisite Unit(s)

4)

4.1) Competencies

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

There are no pre-requisite competencies for this unit.

4.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	3	Writing	3	Numeracy	3

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a unit of competency.* *Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to determine the requirements for working in the Australian gas industry	1.1 Instructions for determining the relevant regulations, codes and practices are communicated and confirmed to ensure clear understanding.
	1.2 WHS/OHS policies and procedures are communicated and confirmed to ensure they are understood as they apply to the carrying out of the work.
	1.3 Appropriate personnel are consulted to ensure the work is coordinated effectively with others involved.
	1.4 Resources and materials needed to do the work are confirmed and obtained in accordance with established procedures.
	1.5 Schedule for the work is confirmed in accordance with

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		instructions and requirements.
2. Determine the requirements for working in the Australian gas industry	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents.
	2.2	Schedule for the work is followed to ensure work is completed in an agreed time, to a quality standard and with a minimum of waste.
	2.3	Further instructions are sought from appropriate personnel in the event of unplanned happenings or conditions.
	2.4	Ongoing checks of work quality are undertaken in accordance with instructions and requirements.
3. Complete work and relevant documentation	3.1	Final checks are made to ensure the work conforms with instructions and to requirements.
	3.2	Appropriate personnel are notified of completion of the work.
	3.3	Work area is cleaned up and made safe and sustainable energy practices are followed.
	3.4	Appropriate documentation of the relevant regulations, codes and practices is completed in accordance with instructions and established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level for this unit.*

Evidence shall show that knowledge has been acquired of the mandatory safety, regulatory and industry requirements for working in the Australian gas industry. The knowledge and skills shall be contextualised to current industry standards, technologies and practices.

The extent of the required skills and knowledge is given below. It forms an integral

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part of this unit.

KS01-G002A Australian gas industry policies and procedures

Evidence shall show an understanding of the mandatory safety, regulatory and industry requirements for working in the Australian gas industry to an extent indicated by the following aspects:

T1. Overview of the gas industry in Australia, encompassing:

- Production
- Transmission
- Distribution
- LPG/Gaseous Fuels
- Industrial, commercial and domestic applications

T2. Australian gas resources, encompassing:

- Major Gas Fields

T3. Gases produced in Australia(details required)Types of gases, encompassing:

- properties
- characteristics
- applications
- combustion
- ventilation

T4. Overview of statutory authorities and regulatory bodies that operate in the Gas Industry, encompassing:

- Federal and State/Territory, Local Government
- Roles and functions
- Employer and employee responsibilities
- Overview of relevant licencing/regulatory requirements

T5. Overview of Australian Standards, guidelines, codes of practice and regulations

- Hierarchy of legislation/codes
- Federal and State/Territory Acts and Regulations
- Australian Standards, guidelines, codes of practice
- Employer and employee responsibilities, rights and obligations.
- Overview of relevant Australian Standards, Guidelines, codes of practice and regulations

T6. Industry stakeholders, encompassing:

- Industry associations;
- Employee organisations
- Other relevant organisations

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Evidence Guide

EVIDENCE GUIDE

8) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEG11'. Evidence shall also comprise:

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- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement encompassing:
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the required skills and knowledge as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Prepare to work in the Australian gas industry as described in 8) Range Statement and including:

    A Requirements to enter the workplace including, the use of work permits and clearances and isolation permissions.

    B Risk control and safe work methods.

    C Need and requirements of work procedures and instructions.

    D Requirements for dealing with accidents and emergencies within the scope of responsibility.

    E Procedures/protocols for dealing with unplanned events

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Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS
- policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to applying WHS/OHS practices in the workplace.

Method of assessment

8.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

For optimisation of training and assessment effort, competency development in this unit may be arranged concurrently with unit:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Range Statement

RANGE STATEMENT

9) *This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to mandatory safety, regulatory and practice requirements for working in the Australian gas industry. This includes an overview of the gas industry and resources in Australia, types of gases, relevant statutory authorities and regulatory bodies, Australian Standards, guidelines, codes of practice and regulations, and industry stakeholders.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Gas Industry

Custom Content Section

Competency Field 11)

Gas industry

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UEGNSG006A Use a portable gas detector to locate escape

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1)**

1.1) Descriptor

This unit covers the use of portable gas detection devices to locate and pin point gas escapes and ensure a work place is safe from explosive and toxic gases and vapours in accordance with relevant legislative, standard and code requirements.

It encompasses requires the ability to accurately use measuring instruments, interpreting readings, converting them to known quantities and evaluating the probable locations that gases will accumulate by applying properties of gases being detected and environmental conditions.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where Gas Industry operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit augments other formally-acquired competencies in a relevant industry and shall be used only in conjunction such competencies. It applies to job function that requires entry to a potentially hazardous area to undertake repair, maintenance or construction work at AQF 2 level or higher.

It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

4.1) Competencies

Granting competency in this unit shall be made after or concurrently with confirming competency in any one of the following units.

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a gas industry work environment

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a unit*	*Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to use portable gas	1.1	The need to initiate gas detection is identified by WHS/OHS requirements and established

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ELEMENT	PERFORMANCE CRITERIA	
detection device.		procedures.
	1.2	The gas or vapour to be detected is established from maps and asset records or consultation with relevant personnel.
	1.3	Gas detection device(s) for the gas/vapour to be detected is/are checked for calibration and response in accordance with manufacturer instructions.
	1.4	Appropriate PPE is available and checked
	1.5	Gas detection devices are checked for factors that could prevent the equipment from being used correctly and safely.
2 Use gas detectors and pin point escapes	2.1	WHS/OHS policies and procedures relating to gas/vapour detection are followed.
	2.2	Gas detection device is used in accordance with manufacturer instructions and with regards to environmental conditions.
	2.3	Gas detection readings are recorded in accordance with established procedures.
	2.4	Probable areas that gases could accumulate are monitored dependant on Gas Properties and environmental conditions
	2.5	Gas detector readings are interpreted correctly and converted to relevant % i.e. GIA to LEL etc.
	2.6	Gas escapes are located and pin pointed in accordance with established procedures.
	2.7	Required actions are determined and communicated to relevant persons in accordance with established procedures.
	2.8	Environmental conditions are used to assist in location of gases
	2.9	The frequency of monitoring is determined from the nature of gas/vapour and the effect of environmental and local conditions

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ELEMENT	PERFORMANCE CRITERIA	
3 Complete the use of gas detectors and relevant documentation.	3.1	Gas detection devices are purged, disassembled and stored in accordance with manufacturer recommendations.
	3.2	Gas detection devices are formally checked and calibrated periodically in accordance with established site requirements and instrument accuracy.
	3.3	Storage, use and calibration record of the gas detection devices is maintained, in accordance with the established procedures.
	3.4	Appropriate persons are notified of completion of the work
	3.5	Reports and documentation are completed with readings accurately recorded and maintained for potential use as evidence in accordance with company procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices and using and maintaining the integrity of portable gas detection devices.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G006 Portable gas detection devices

Evidence shall show an understanding of use of portable gas detection devices in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Safety requirements

- hazards, risk assessment and control measures

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REQUIRED SKILLS AND KNOWLEDGE

T3. Gases and vapours

- types
- basic properties and application
  - behaviour
  - specific gravity
  - flammability ranges and toxicity
- detection
  - methods
  - probable areas that gases could accumulate i.e. High for low SG gases and low for High SG gases, voids, wind conditions, etc.
  - factors affecting the frequency of monitoring
    - nature of gas/vapour and the effect of environmental and local conditions (e.g. ambient temperature rise, density of gas/vapour, flash point, dew point and detector position).

T4. PPE

- requirements
- types and applications

T5. Portable gas detection devices

- purpose, types, applications
- manufacturer's instructions
- start up and shut down procedures
- use of gas detection equipment
- calibration requirements and methods
- storage requirements
- basic maintenance
- factors that could prevent the equipment from being used correctly and safely including damaged casing, use of incorrect batteries and/or chargers, use of incorrect spare parts and accessories.

T6. Interpreting and converting readings and indications

- identifying highest reading locations
- locating and pin pointing gas escape procedures
- third party asset influences
- verifying actual escape location

T7. Use of Environmental indicators to assist in gas detection, i.e. effect on vegetation, insects, wind direction soil discoloration etc.

T8. Relevant documentation

- signs, symbols terminology and legends as used in industry procedures and documents

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REQUIRED SKILLS AND KNOWLEDGE

- workplace forms and reports

Evidence Guide

EVIDENCE GUIDE

8) This provides essential advice for assessment of the unit and must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work influence decisions about how/how much the data gathered will contribute to its 'richness'. Some skills are more critical to

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safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria must be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEG11. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the required knowledge and skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Use a portable gas detector to locate escape as described in 9) and including:

    A Following work permits/authorisations and clearance

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procedures.

B Monitoring gases and hazards and following evacuation procedures.

C Determining whether the gas/vapour level in a work area is safe from explosive, toxic and oxygen deficiency aspects based on gas properties and environmental conditions.

D Locating and pin pointing gas escapes

E Following procedures to maintain the integrity of gas detectors

F Identification of PPE required for conditions.

G Applying relevant contingency management skills.

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should also be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to using portable gas detectors.

Method of assessment

8.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:

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Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment primarily intended for learning/assessment which incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

For optimisation of training and assessment effort competency development in this unit may be arranged concurrently with the following units:

UEGNSG132A	Carry out basic work activities in a gas industry work environment

Range Statement

RANGE STATEMENT

9) *This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to carrying out work activities in a gas industry work environment with a potentially hazardous area or confined space to locate and pin point gas escapes.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Volume 2, Part 2.1.

- Appropriate persons
- Safe working procedures
- Legislative requirements
- Personal Protective Equipment

Unit Sector(s)

Gas Industry

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Competency Field

Competency Field **11)**

Support Services

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UEGNSG106B Coordinate repair of pipeline, facilities and equipment

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit describes the skills and knowledge required to coordinate the repair of gas pipelines, facilities and equipment. The competency standard will also cover the types of faults that are found; the facilities and equipment used; the documentation and the reports and record keeping that is performed.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare for the coordination of repair of pipelines, facilities and equipment	1.1	Work schedule(s), including drawings, plans, requirements, established procedures and material lists are received, analysed and confirmed if necessary by site inspection
	1.2	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3	OHS, environmental and sustainable energy policies and procedures related to the coordination of repair of pipelines, facilities and equipment are obtained and confirmed for the purposes of the work performed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
	1.6	Relevant work permits are obtained to access and perform work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed to be in working order

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ELEMENT		PERFORMANCE CRITERIA	
		1.8	Relevant persons at work site are confirmed to be current in First Aid and other related work procedures according to requirements
		1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved to carry out work where necessary
		1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
		1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
		1.12	Road signs, barriers and warning devices are positioned in accordance with requirements
2	Coordinate repair of pipeline, facilities and equipment	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
		2.2	Lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
		2.3	Essential Knowledge and Associated Skills are applied for coordinating the repair of pipelines, facilities and equipment to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
		2.4	Performing the coordinating the repair of pipelines, facilities and equipment is carried out in accordance with the work schedule and to requirements and established procedures
		2.5	Pipeline facilities/equipment and conditions and all environment hazards, safety risks and control measures are monitored and preventative action

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ELEMENT	PERFORMANCE CRITERIA	
		taken and referred to appropriate authorities in accordance with requirements and established procedures
	2.6	Unplanned events in coordinating the repair of pipelines, facilities and equipment are undertaken within the scope of established procedures
	2.7	Known solutions to a variety of problems are applied using acquired Essential Knowledge and Associated Skills
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Recommission systems and equipment	3.1	Repaired/installed equipment is brought back on line at the desired operational parameters and work undertaken is checked against works schedule for conformance with requirements and in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Work completion records, reports and documentation and information is finalised and processed and appropriate persons notified

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for the coordination and repair of pipeline, facilities and equipment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G106B Pipeline, facilities and equipment repairs

G 3.2.38 Plan and prepare coordination of repair of pipelines, facilities and equipment

Evidence shall show an understanding of the requirements to plan and prepare coordination of repairs to pipelines, facilities and equipment on a Gas Industry pipelines (Distribution), indicated by the following:

- identification of the types of problems and faults that may require repair
- obtaining, interpreting and using relevant technical drawings, plans or specifications during preparation and planning of repair work
- identification of hazards (including confined spaces) and explanation of ohs, procedures and environmental requirements that require implementation prior to and during repair work
- identification of procedures, persons, equipment and processes required for the repair work and plan the coordination of resources
- required work permits
- locating and securing of emergency equipment and ensuring all persons are familiar with emergency plans.

G 3.2.39 Secure work area and equipment prior to repair

Evidence shall show an understanding of the requirements to secure work area and equipment prior to repair on a Gas Industry pipeline (Distribution), indicated by the following:

- discuss the requirements for and use of work permits, safety plans, non-routine procedures and safety checks
- implementation and adherence to procedures, ohs and

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environmental requirements to ensure a safe worksite is established and maintained
- equipment for repair work is depressurised, tagged and locked out
- routine checks and documentation of facilities/equipment and overall repair process
- verification that facilities/equipment are safe for repair work to commence by ensuring that all procedures have been followed and requirements met.

G 3.2.40 Coordinate repair of pipelines, facilities and equipment

Evidence shall show an understanding of the requirements to coordinate repairs of pipelines, facilities and equipment on a Gas Industry pipeline (Distribution), indicated by the following:

- different types of repair procedures relevant to repairing pipelines, facilities and equipment
- management plan and repair procedures relevant to the required work
- procedures to monitor systems, equipment and environmental conditions to ensure procedures, OHS and environmental requirements are maintained during repair work
- repair work and validate the standard to ensure it meets OHS and environmental and legislative requirements
- progress of repair work to evaluate required amendments or modifications and communicate changes to appropriate persons/regulatory authority
- completion/adjustment documentation to reflect the repair work carried out.

G 3.2.41 Recommission systems and equipment

Evidence shall show an understanding of the requirements to recommission systems and equipment on a Gas Industry pipeline (Distribution), indicated by the following:

- procedures to recommission repaired systems and equipment
- identification of the persons and authorities that need to be notified in relation to the recommissioning of the systems and the procedures to carry out the notification
- cancel/sign off of relevant work permits
- restoration of sites in compliance with OHS and environmental legislative and operational requirements
- completion and filing of records and documentation that accurately indicate extent of work performed, results of repair and completion of work with the appropriate

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persons and departments.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment

intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work

environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to

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safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

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Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Interpret technical drawings and symbols Ensure emergency response procedures are in place Communicate with other authorities and stakeholders Communicate schedules /coordinate to persons Carry out job safety analysis Obtain work permit Ensure practical application of AS2865 Interpret MSDSs Use and interpret dial before you dig report
B	At least 3	Excavation Trenching Shoring Stitch bore Horizontal drilling Directional drilling
C	At least 3	Nylon (polymide) pipeline laying techniques Nylon gluing Nylon stop off Horizontal drilling Directional drilling

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D	At least 5	PE pipeline laying techniques Large diameter PE PE electro fusion PE butt fusion Saddle fusion Socket fusion PE stop off Compression couplings or flanges Connection of PE to nylon Practical application of AS3723 Installation and Maintenance of plastic pipe systems
E	At least 4	UPVC pipeline laying techniques UPVC solvent cemented joints UPVC moulded joints UPVC stop off UPVC couplings or flanges Connection of UPVC to steel Practical application of AS3723 Installation and maintenance of plastic pipe systems
F	At least 2	Steel pipeline coating repair Steel pipeline coating testing (Jeeper) Steel, field joint coating
G	At least 3	Connection of PE to steel mains Steel mains welding

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		Steel mains repair Sleeve application Clamp application Hot tap and stopple
H	At least 2	High pressure stop off 312 Bagtube Squash off jacks Squash off pliers
I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency working in coordinating repair of pipeline, facilities and equipment.

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Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG102B	Carry out work activities in a utilities industry work environment
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEGNSG104B	Comply with environmental policies and procedures
UEGNSG105B	Establish the work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to coordinating the repair of pipelines, facilities and equipment.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Types of faults (3)

Facilities and equipment (3)

Documentation (3)

Reports (3)

Record keeping (3)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG108B Operate and monitor pipeline control systems

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers operating and monitoring of pipeline systems (including valve systems, instrument and control systems prime movers, compression systems). This competency standard refers to Pipeline Control Systems; Prime Movers; Instrument and Control Systems; Valve Systems; Emergency Response procedures; Relevant Persons; Tools, Equipment and Testing Devices; Types of Faults and Reports.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety,

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License to practice **3)**

gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan for operation	1.1	Operational area is checked for hazards and the works schedule(s), including drawings, plans, requirements, established procedures and material lists are detailed, analysed if necessary by site inspection and the extent of the preparation of the work determined for planning and coordination
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe and technical working order

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ELEMENT		PERFORMANCE CRITERIA	
		1.8	Clients are provided with possible solutions and options within the scope, acceptable cost and requirements
		1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
		1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
		1.11	Status of the system is sought through communication with pipeline control centre in accordance with established procedures
2	Operate and monitor system	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
		2.2	First Aid and other related work procedures are performed according to requirements and established procedures
		2.3	Lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are safely exercised according to requirements
		2.4	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
		2.5	Hazard warnings and safety signs are recognised and hazards assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
		2.6	Operating conditions of equipment are monitored through gauge levels, temperatures, flow indicators in order to determine performance of equipment and system

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ELEMENT		PERFORMANCE CRITERIA	
		2.7	Information concerning the operation of the pipeline system is monitored and conveyed to relevant persons to ensure safe and efficient operation of the pipeline system
		2.8	Fault finding and troubleshooting techniques are applied to operational systems and equipment to identify any repairs or maintenance that is required according to requirements and established procedures
		2.9	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
		2.10	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills
		2.11	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality like outcome is achieved for the client and to a community and industry standard
3	Shutdown system and equipment	3.1	Work undertaken is checked against works schedule for conformance with requirements and anomalies which are reported and solutions identified in accordance with established procedures
		3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
		3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
		3.4	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
		3.5	Relevant work permit(s) are signed off

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ELEMENT	PERFORMANCE CRITERIA	
		accordance with requirements
	3.6	Works completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for operating and monitoring pipeline control systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G108B Pipeline control systems

G 4.1.1 Operating and supervising in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.2 Understand the effective operation of Gas Industry plant,

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equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicating effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

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G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in

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EVIDENCE GUIDE

conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence **9.2)**

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required to demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Interpret technical drawings and symbols

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		Ensure emergency response procedures are in place Communicate with other authorities and stakeholders Communicate schedules/coordinate to persons Ensure practical application of AS2865 Interpret MSDSs Carry out job safety analysis Obtain work permit Use and interpret dial before you dig or its equivalent report
B	At least 3	Excavation Trenching Shoring Stitch bore Horizontal drilling Directional drilling
C	At least 3	Nylon (polymide) pipeline laying techniques Nylon gluing/stop off Horizontal drilling Directional drilling
D	At least 5	PE pipeline laying techniques Large diameter PE PE electro fusion PE butt fusion Saddle fusion Socket fusion

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		PE stop off Compression couplings or flanges Connection of PE to nylon Practical application of AS3723 Installation and Maintenance of plastic pipe systems
E	At least 4	UPVC pipeline laying techniques UPVC solvent cemented joints UPVC moulded joints UPVC stop off UPVC couplings or flanges Connection of UPVC to steel Practical application of AS3723 Installation and maintenance of plastic pipe systems
F	At least 2	Steel pipeline coating repair Steel pipeline coating testing (Jeeper) Steel, field joint coating
G	At least 3	Connection of PE to steel mains Steel mains welding Steel mains repair Sleeve application Clamp application Hot tap and stopple
H	All	Isolate, vent and purge gas pipeline systems Operation of gas detector

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		Operate service locator Where relevant, calculate nitrogen volume needed
I	At least 2	High pressure stop off 312 Bagtube Squash off jacks/squash off pliers
J	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in operating and monitoring pipeline control systems

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

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Assessment must also integrate the employability skills in section 3.1 of this competency standard.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to operating and monitoring pipeline control systems. The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Pipeline control systems

Prime movers

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RANGE STATEMENT

Instrument and control system

Valve system

Emergency responses

Relevant persons

Tools, equipment and testing devices

Types of faults

Reports

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG109B Control field pipeline operations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the skills and knowledge required to control field pipeline operations on a gas pipeline. This competency standard refers to Resources; Operational; Monitoring; Relevant Persons; Types of Faults; Reports.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government

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License to practice **3)**

legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan control of operation	1.1	Works schedule(s), including drawings, plans, requirements, established procedures and material lists are detailed, analysed if necessary by site inspection and the extent of the preparation of the work determined for planning and coordination
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
	1.7	Resources to meet pipeline operations are determined in accordance with standard operating procedures
	1.8	Clients are provided with possible solutions and options within the scope, acceptable cost and

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ELEMENT	PERFORMANCE CRITERIA	
		requirements
	1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
	1.11	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Control operations	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	First Aid and other related work procedures are performed according to requirements and established procedures
	2.3	Lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are safely exercised according to requirements
	2.4	Operating conditions, pressures and temperatures are monitored and observed to determined correct operating parameters of the pipeline are being maintained
	2.5	Alarms and codes are correctly interpreted and acknowledged to ensure the correct response strategy is selected and applied to the situation
	2.6	Remedial actions are taken to overcome any shortfalls encountered in the work schedule according to requirements and established procedures
	2.7	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a

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ELEMENT		PERFORMANCE CRITERIA	
			minimum of waste according to requirements
		2.8	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills
		2.9	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client and to a community and industry standard
3	Shut down pipeline system	3.1	Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being set and work undertaken in accordance with established procedures
		3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
		3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
		3.4	Shutdown is completed in accordance with standard operating procedures
		3.5	Shift hand over procedures are performed in accordance with standard operating procedures and pre-shutdown checks are completed and documented in accordance with standard operating procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8)This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for

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REQUIRED SKILLS AND KNOWLEDGE

the control of field pipeline operations.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G109B Field pipeline operations

G 4.1.1 Operating and supervising in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and

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remote operation as applicable.

- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicating effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that

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can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

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- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Apply emergency response systems Ensure knowledge of permit to work system Use emergency equipment including fire fighting equipment correctly Monitor of product and safe fill levels Use correct product transfer procedures Use correct storage processing conditions of

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		product Relay accurate instructions
B	At least 7	Resources: Process control equipment Station power supply Heaters and heat exchanges Station instrumentation Drawings and schematics Metering equipment and gas analysis equipment Valves, actuators and flanges Compressors and prime movers Sumps and drains PIGs
C	At least 4	Monitoring pipeline: Use of fire and gas extinguishing and deluge systems Emergency systems Alarm and communication systems SCADA Prime wovers and compression systems Shutdown systems
D	At least 7	Faults: Gas leaks Electrical problems Compressor or pump failure Out-of-current inspection status Gauge failure or hose

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		rupture leaks Instruments out of calibration Non-flow of gas
E	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in Context of and specific resources for assessment, evidence should show demonstrated competency in controlling field pipeline operations.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3

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'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to controlling field pipeline operations.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Resources

Operational

Monitoring

Relevant persons

Types of faults

Reports

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG110B Supervise technical operations for gas distribution or transmission

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the skills and knowledge required to supervise technical operations for gas distribution and transmission. The competency standard refers to Resources; Operational; Monitoring; Relevant Personnel; Types of Faults; Reports.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection,

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License to practice **3)**

telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan and prepare to supervise operations	1.1	Project activities are planned to prevent damage and to ensure minimal disruption to gas supply
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe and technical working order
	1.8	Clients are provided with possible solutions and options within the scope, acceptable cost and requirements

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
	1.11	Expenditure is forecast and managed to keep within operational budget constraints
2 Supervise during projects	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	First Aid and other related work procedures are performed according to requirements and established procedures
	2.3	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
	2.4	Hazard warnings and safety signs are recognised and hazards assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.5	Fault finding and troubleshooting techniques are applied to operational systems and equipment to identify any repairs or maintenance that is required according to requirements and established procedures
	2.6	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.7	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills

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ELEMENT		PERFORMANCE CRITERIA	
		2.8	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client and to a community and industry standards
		2.9	Relevant persons are informed of project status/requirements according to company standard operating procedures
3	Finalise completion details	3.1	Work undertaken is checked against works schedule for conformance with requirements and anomalies which are reported and solutions identified in accordance with established procedures
		3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
		3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
		3.4	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
		3.5	Relevant work permit(s) are signed off in accordance with requirements
		3.6	Works completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

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REQUIRED SKILLS AND KNOWLEDGE

Evidence shall show that knowledge has been acquired of safe working practices for supervising technical operations for gas distribution/transmission.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G110B Technical operations for gas distribution/transmission

G 5.1.4 Management techniques for Gas Industry supervision

Evidence shall show an understanding and application of management techniques required of Gas Industry operators in a supervisory capacity, indicated by the following:

- industrial awards and employee entitlements
  - industrial conflict
  - industrial relations issues
  - understanding industrial awards and employee entitlements
  - individual and collective bargaining and agreements
- characteristics of ethnic and cultural groups
- Applicable environmental requirements
- relevant organisational standard operating procedures, site specific safety legislation and requirements
- correct waste management procedures
- application of OHS management in relation to other organisational management systems.
- Related organisational policies and procedures such as business planning, training, purchasing.

G 5.1.5 Demonstrate an understanding of the operation of Gas Industry equipment, tools and materials

Evidence shall show an understanding of how Gas Industry tools, equipment and materials operate, indicated by the following:

- relevant organisational maintenance procedures
- operating principles of gas industry infrastructure and equipment including pipelines and facilities
- methodology for location of third-party services
- emergency response systems
- correct pressure adjustment techniques and procedures

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- correct procedures for identifying, diagnosing, assessing, analysing, locating, repairing of faults in gas infrastructure and the generation of applicable fault reports.
- use and operation of pipeline PIG’s and 'pigging' techniques
- cathodic protection system, installation, adjustment, replacement, checking and maintenance of applicable cathodic levels
- pipeline construction techniques and jointing procedures
- pipeline inspecting and testing techniques
- commissioning and decommissioning procedures of gas infrastructure including pipelines and equipment as applicable
- applicable coating procedures to protect against corrosion.

G 5.1.7 Manage Gas Industry maintenance

Evidence shall show an understanding and application of relevant gas industry infrastructure maintenance and practices at a supervisory level indicated by the following:

- planning of scheduled and non-scheduled maintenance of applicable gas infrastructure
- coordination of maintenance activities
- Implement safety and environmental controls during maintenance activities
- Comply with relevant regulations such as building Codes and Australian Standards during the planning and implementation of maintenance activities
- understanding of applicable project management techniques in maintenance planning and implementation
- manage gas industry projects
- understanding of applicable Human Resource requirements in maintenance activities including appropriate training and qualifications of maintenance personnel.
- Understanding and implementation of relevant aspects of organisational Quality Assurance requirements when planning and implementing maintenance activities

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Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**

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A	At least 4	Resources: Appropriate relevant personnel Materials Tools and equipment Personal protective equipment and clothing Company standard operating procedures Equipment manuals Training resources
B	At least 3	Project activities: Maintenance, repairs and modifications Construction and upgrade Rectification of gas system faults Installation and commissioning of New plant, piping and equipment System security Scheduling work
C	All	Legislative requirements: OHS legislation Relevant Government Acts, regulations and codes of practice Australian standards Environmental legislative requirements
D	At least 3	Relevant authorities: Local and shire councils Local government authorities Road transport authorities

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		Rail departments Landowners both current and traditional indigenous
E	At least 8	Gas system faults: Gas leaks Electrical problems Mechanical failure Out-of-current inspection status Gauge failure, hose rupture/leaks Instruments out of calibration Non-flow of gas Cathodic protection system failure Corrosion Compressor breakdown Filtration problems Gas measurement equipment inaccuracy/failure

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F	At least 8	Relevant documentation: Contracts, specifications Drawings, plans Manufacturer's specifications Work permits Company standard operation and safety procedures Company management plans and policies Hot work permits Company forms and files OHS laws and codes of practice Relevant Government Acts, regulations and codes of practice Environmental legislative requirements Pipeline licenses Quality assurance Commercial agreements
G	At least 4	Records/reports: Relevant documentation Routine inspections (daily readings, monthly checks) Scheduled maintenance activities Mandatory or statutory inspections Hazard and incident reports

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H	All	Management techniques for Gas Industry supervision Understanding the operation of Gas Industry equipment, tools and materials
I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in supervising technical operations for gas distribution/transmission.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

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Method of ssessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to supervising technical operations for gas distribution/transmission.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Resources

Operational

Monitoring

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RANGE STATEMENT

Relevant personnel

Types of faults

Reports (5)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG111B Produce maintenance strategies and plans for a gas facility

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the development of producing maintenance strategies and plans for a gas production facility. The competency standard involves strategies; budgeting; reference information; communication; producing documentation; preparation and implementation strategies.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Research and plan to implement strategies	1.1 Existing strategies are reviewed for maintenance requirements and directions against work schedule
	1.2 Enterprise and site plans are reviewed for impact on maintenance work
	1.3 Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.4 Risk control measures are identified, prioritised and evaluated against the work schedule
	1.5 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.6 Cost estimating and economic evaluation is performed and legal implications are investigated to ensure work can be undertaken in accordance with requirements
	1.7 Resources including persons and equipment required are identified, scheduled, coordinated and confirmed
	1.8 Clients are provided with possible solutions and options within the scope, acceptable cost and requirements
	1.9 Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to

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ELEMENT	PERFORMANCE CRITERIA	
		carry out work
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
	1.11	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Establish strategies for implementing a maintenance plan	2.1	OHS, environmental and sustainable energy policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Resources required to implement strategies are identified and detailed and the work is performed in accordance with a work schedule and to requirements
	2.3	Timeframes and potential variances for maintenance scheduling are defined and potential risks and control measures are monitored and preventative action taken where necessary
	2.4	Planned objectives are documented in accordance with enterprise requirements
	2.5	Essential Knowledge and Associated Skills is applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.6	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills

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ELEMENT		PERFORMANCE CRITERIA	
		2.7	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality like outcome is achieved for the client and to a community and industry standards
3	Implement maintenance strategy	3.1	Strategies and plans are implemented in order to facilitate required outcomes as per enterprise requirements
		3.2	Strategies are implemented and variances are identified and corrective action is taken in accordance with risk management planning process
		3.3	Final reporting is performed as per enterprise requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8)This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of maintenance strategies and plans for a gas facility.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G111B Maintenance plans

G 5.1.1 Gas Industry concepts for supervising operations

Evidence shall show an understanding of the requirements to undertake the supervision of Gas Industry operations, indicated by the following:

- Implementation of risk management and Occupational Health and Safety (OHS) practices and principles including, but not limited to:

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- risk assessment, risk control and risk control measures
- hierarchy of control
- personal protective equipment — strengths and weaknesses
- identifying hazards and their consequences
- identifying hazards, assessing associated risks and implementing appropriate control measures
- developing hazard checklists
- reporting hazards including hazardous events

- planning theory and study of HAZOPS and HAZANS
- knowledge of applicable legislative requirements and Australian/New Zealand and ISO standards and codes of practice for the Gas Industry
- Implementation of relevant organisational policies and procedures
- identification and implementation of control measures
- establishing emergency management techniques
- principles and guidelines including critical incident analysis.

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems
  - negotiation with internal and external stakeholders
  - the nature of negotiation
  - strategy and tactics of bargaining
  - pre-negotiation essentials
  - communication in negotiation
- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

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G 5.1.3 Plan for, respond to and manage emergencies

Evidence shall show an understanding and application of emergency management techniques in a Gas Industry environment, indicated by the following:

- emergency management concepts and principles:
  - auditing and planning
  - systems analysis
  - policies and procedures for non-employees and contractors
  - types of emergencies
  - dealing with an emergency
  - elements of an emergency plan
  - employee assistance programs.
- Develop an emergency management plan which includes:
  - First Aid and welfare
  - recovery and post recovery plans
  - legislative requirements
  - interaction with authorities/emergency services
  - communication with key stakeholders
  - initial response/assessment and make safe

G 5.1.4 Management techniques of utilities industry supervision

Evidence shall show an understanding and application of management techniques required of Gas Industry operators in a supervisory capacity, indicated by the following:

- industrial awards and employee entitlements
  - industrial conflict
  - industrial relations issues
  - understanding industrial awards and employee entitlements
  - individual and collective bargaining and agreements
- characteristics of ethnic and cultural groups
- Applicable environmental requirements
- relevant organisational standard operating procedures, site specific safety legislation and requirements
- correct waste management procedures
- application of OHS management in relation to other organisational management systems.
- Related organisational policies and procedures such as business planning, training, purchasing.

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G 5.1.6 Technical knowledge for Gas Industry managers

Evidence shall show an understanding and application of the technical knowledge required of Gas Industry managers, indicated by the following:

- development of organisational operational strategies as required
- understanding maintenance philosophies
- engineering principles
- risk management in a Gas Industry environment
- principles of planning including project management planning.

G 5.1.7 Manage Gas Industry maintenance

Evidence shall show an understanding and application of relevant gas industry infrastructure maintenance and practices at a supervisory level indicated by the following:

- planning of scheduled and non-scheduled maintenance of applicable gas infrastructure
- coordination of maintenance activities
- Implement safety and environmental controls during maintenance activities
- Comply with relevant regulations such as building Codes and Australian Standards during the planning and implementation of maintenance activities
- understanding of applicable project management techniques in maintenance planning and implementation
- manage gas industry projects
- understanding of applicable Human Resource requirements in maintenance activities including appropriate training and qualifications of maintenance personnel.
- Understanding and implementation of relevant aspects of organisational Quality Assurance requirements when planning and implementing maintenance activities

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with

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EVIDENCE GUIDE

the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to **9.2)**

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demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Knowledge and interpretation of OHS legislation

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		Enterprise safety procedures Enterprise site safety and emergency procedures
B	All	Strategy development Maintenance philosophy Engineering principles Risk management Principles of planning Communication principles Problem solving skills
C	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in producing maintenance strategies and plans for a

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gas facility

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to producing maintenance strategies and plans for a gas facility.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

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RANGE STATEMENT

Strategies

Budget

Reference information

Communication

Documentation (5)

Preparation and implementation strategies

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG113B Manage a utilities industry OHS management system

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

The competency standard is to be applied to establish, maintain and manage systematic approaches to OHS in the utilities industry. It will be applied in a management context in terms of responsibility to ensure that the workplace is, as far as practicable, safe and without risk to employees, clients and other present visitors.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Establish and maintain participative arrangements for the management of OHS	1.1	Purpose of the OHS management system is established after data is analysed and expected outcomes of the work are confirmed with the appropriate personnel
	1.2	Legislative requirements and established procedures on policies and specifications for the OHS management system are obtained or established with the appropriate personnel
	1.3	Work roles and tasks are allocated according to requirements and individual's competencies
	1.4	Work is prioritised and sequenced for the most efficient outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures
	1.5	Appropriate participative processes with employees and their representatives are established and maintained in accordance with relevant industry standards consistent with enterprise procedures
	1.6	Issues raised through participation and consultation are dealt with and resolved promptly and effectively in accordance with procedures for issues resolution
	1.7	Information is provided to employees about the outcome of participation and consultation in a manner accessible to employees
2 Establish and maintain procedures for identifying	2.1	OHS management system(s) decisions are made on the basis of safety and effective outcomes according to requirements and established

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ELEMENT	PERFORMANCE CRITERIA	
	hazards, assessing and	procedures
	controlling risks as well as dealing with hazardous events	2.2 Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
		2.3 Work teams are arranged to ensure planned goals are met according to established procedures
		2.4 Solutions to non-routine problems are identified and actioned, using acquired Essential Knowledge and Associated Skills, according to requirements
		2.5 Quality of work is monitored against personal performance agreement and established organisational and professional standards
		2.6 Strategic plans are developed incorporating organisation initiatives as per established procedures
		2.7 Workplace procedures are developed for hazard identification, assessment and control of risks as well as dealing with hazardous events
		2.8 Identification of all hazards is addressed at the planning, design and evaluation stages of any changes in the workplace to ensure that new hazards are not created by the proposed changes
		2.9 Procedures for selection and implementation of risk control measures are developed and maintained in accordance with the hierarchy of control
		2.10 Inadequacies in existing control measures are identified in accordance with the hierarchy of control and resources enabling implementation of new measures are provided promptly
3	Maintain an OHS induction and training program, maintain a systems for OHS	3.1 Final inspections of the OHS management systems are undertaken to ensure they comply with all requirements and include all specifications and documentations needed to

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ELEMENT	PERFORMANCE CRITERIA	
records and evaluate		complete the project
the OHS system including policies, procedures and programs	3.2	Appropriate personnel are notified of completion and reports and completion documents are finalised
	3.3	Reports and completion documents are submitted to relevant personnel for approval and where applicable, statutory or regulatory approval
	3.4	Approved copies of the OHS management systems documents are issued and records are updated in accordance with established procedures
	3.5	OHS training needs are identified and an OHS induction and training program developed to fulfil employee's OHS training needs as a part of the enterprise general training program
	3.6	Training management system(s) are maintained so that individual employee's OHS training needs are easily identified, training attendance monitored and non attendance followed up
	3.7	Monitoring systems for keeping OHS records to meet regulatory requirements are maintained according to OHS legislative arrangements including identification of patterns of occupational injury and disease within area of managerial responsibility
	3.8	OHS system including policies, procedures and programs is assessed according to organisational aims with respect to OHS
	3.9	Recommendations and improvements to the OHS system are developed, documented and implemented to ensure effectiveness according to established procedures
	3.10	Compliance with OHS legislative requirements and established procedures is assessed to ensure that legal OHS standards are maintained as a minimum

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ELEMENT	PERFORMANCE CRITERIA
	3.11 Appropriate personnel are notified on the outcomes of the evaluation(s) and recommendations and completion documents are finalised/commissioned according to established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired for managing a utilities industry OHS management system.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G113B OH&S management systems

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems
  - negotiation with internal and external stakeholders
  - the nature of negotiation
  - strategy and tactics of bargaining
  - pre-negotiation essentials
  - communication in negotiation
- resolve conflict with internal or external stakeholders

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- dealing with negotiation breakdowns
- social context of negotiation
- power in negotiation
- ethics in negotiation.

G 5.1.4 Management techniques for utilities industry supervision

Evidence shall show an understanding and application of management techniques required of Gas Industry operators in a supervisory capacity, indicated by the following:

- industrial awards and employee entitlements
  - industrial conflict
  - industrial relations issues
  - understanding industrial awards and employee entitlements
  - individual and collective bargaining and agreements
- characteristics of ethnic and cultural groups
- Applicable environmental requirements
- relevant organisational standard operating procedures, site specific safety legislation and requirements
- correct waste management procedures
- application of OHS management in relation to other organisational management systems.
- Related organisational policies and procedures such as business planning, training, purchasing.

G 6.1.4 Communication for utilities industry supervisors

Evidence shall show an understanding and utilisation of technology for communication in a Gas Industry environment, indicated by the following:

- effective communication for Gas Industry managers and supervisors
  - motives for communication
  - communication networks: who communicates with whom
  - verbal and non-verbal communication
  - choosing the medium and the flow of a message
  - blocks to effective communication
- analyse and interpret recorded data, review and report
- use information technology for communication
  - understanding how to use information technology
  - effective use of email, internet and other communication mediums.

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Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment

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instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **9.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures;
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Note: Competence may be demonstrated working individually or under the guidance of or as a member of a team, with specialist OHS staff, managers or consultants

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Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Communicate and consult with work groups Develop, implement and maintain the organisational OHS policies and procedures Manage a systematic approach to OHS Understand the relevance to OHS management to other organisational systems, policies and procedures Understand the impact of the characteristics and composition of the workforce on OHS systems
B	All	Understand principles and practice of OHS management including hierarchy of control measures, risk management, OHS training and incident and accident investigation Identify hazards, analyse and manage risks in the workplace and design and implement appropriate OHS management systems Analyse relevant workplace data and deliver information sessions Understand and be able to apply relevant state and territory legislation, regulations, advisory codes

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		and standards Develop reports to manage OHS Identify when expert advice is needed, to obtain that advice and to act on it appropriately Assess resources needed to establish and maintain OHS systems including a range of control measures
C	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in managing a utilities industry OHS management system.

Assessment of this competency must also be undertaken in either

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an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG115B Manage gas system projects

UEGNSG116B Manage gas system physical resources

UEGNSG141A Manage environmental performance

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

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RANGE STATEMENT

This Unit shall be demonstrated in relation to managing a utilities industry OHS management system to be performed in a utilities industry work environment. The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section.

OHS legislative arrangements

Hazard (5)

Organisational procedure for managing risks including an OHS framework

Work instructions

Designated personnel for OHS

OHS issues

Contributions to OHS

Participative arrangements

Assessing/controlling risks

OHS information to co-workers including training

OHS safety records

Workplace hazard reports

OHS management system

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG114B Coordinate and monitor implementation of a risk management plan for a utilities industry facility

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the coordination and monitoring of the implementation of the company risk management plan in the workplace. This competency standard refers to Risk Management Plans; Persons; Control Measures; Relevant Persons; Legislative Requirements; Emergency Exercises; Emergency Appliances; Safety Devices and Relevant Documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety,

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License to practice **3)**

gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan to implement risk management plan	1.1	OHS principles and practices and environmental and sustainable energy procedures which may influence the systems are reviewed and determined
	1.2	Purpose of the implementation of a risk management plan is established after data is analysed and expected outcomes of the work are confirmed with the appropriate persons
	1.3	Organisational established procedures on policies and specifications for the implementation of a risk management plan are obtained or established with the appropriate persons
	1.4	Work roles and tasks are allocated according to requirements and individual's competencies
	1.5	Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures
	1.6	Liaison and communication issues with authorised persons are resolved and activities coordinated to carry out work
	1.7	Appropriate risk management plan and legislative requirements are identified to determine requirements for the workplace
	1.8	Hazards are identified, OHS risks assessed and control measures are prioritised, implemented

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ELEMENT	PERFORMANCE CRITERIA	
		and monitored including emergency exits kept clear according to established procedures
	1.9	Assessed risks are rated and priorities allocated according to risk management plan
	1.10	Control measures are identified and implemented to suit the relevant workplace conditions according to risk management plan
2 Implement risk management plan	2.1	Decisions regarding the implementation of the risk management plan are made on the basis of safety and effective outcomes according to requirements and established procedures
	2.2	Technical advice is given in relation to hazards, assessed risks and control measures so that monitoring can be undertaken and appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
	2.3	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.4	Testing of the risk management plan is undertaken according to requirements and established procedures
	2.5	Work teams are coordinated to ensure that planned goals are met according to the risk management plan
	2.6	Contingency plans for critical incidents are invoked in accordance with requirements where critical incidents of an abnormal nature are experienced
	2.7	Strategic plans are developed incorporating organisation initiatives as per established procedures
	2.8	Persons selected are trained for emergency exercises to increase response times and knowledge of hazards and control measures

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ELEMENT	PERFORMANCE CRITERIA	
		according to Risk Management Plan
	2.9	Emergency exercises are coordinated and monitored according to the risk management plan
3 Review risk management plan	3.1	Final evaluation of the risk management plan is undertaken to ensure it complies with all requirements and includes all specifications and documentations needed to complete the project
	3.2	Appropriate persons are notified of completion and reports and completion documents are finalised
	3.3	Reports and completion documents are submitted to relevant persons for approval and where applicable, statutory or regulatory approval
	3.4	Approved copies of the risk management plan are issued and records are updated in accordance with established procedures
	3.5	The risk management plan and associated activities are reviewed and assessed for relevance and quality

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8)This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for coordinating and monitoring the implementation of risk management plans for a utilities industry facility.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G114 Risk management plan

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B

G 5.1.1 Gas Industry concepts for supervising operations

Evidence shall show an understanding of the requirements to undertake the supervision of Gas Industry operations, indicated by the following:

- Implementation of risk management and Occupational Health and Safety (OHS) practices and principles including, but not limited to:
  - risk assessment, risk control and risk control measures
  - hierarchy of control
  - personal protective equipment — strengths and weaknesses
  - identifying hazards and their consequences
  - identifying hazards, assessing associated risks and implementing appropriate control measures
  - developing hazard checklists
  - reporting hazards including hazardous events
- planning theory and study of HAZOPS and HAZANS
- knowledge of applicable legislative requirements and Australian/New Zealand and ISO standards and codes of practice for the Gas Industry
- Implementation of relevant organisational policies and procedures
- identification and implementation of control measures
- establishing emergency management techniques
- principles and guidelines including critical incident analysis.

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems
  - negotiation with internal and external stakeholders
  - the nature of negotiation

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- strategy and tactics of bargaining
- pre-negotiation essentials
- communication in negotiation

- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

G 5.1.3 Plan for, respond to and manage emergencies

Evidence shall show an understanding and application of emergency management techniques in a Gas Industry environment, indicated by the following:

- emergency management concepts and principles:
  - auditing and planning
  - systems analysis
  - policies and procedures for non-employees and contractors
  - types of emergencies
  - dealing with an emergency
  - elements of an emergency plan
  - employee assistance programs.
- Develop an emergency management plan which includes:
  - First Aid and welfare
  - recovery and post recovery plans
  - legislative requirements
  - interaction with authorities/emergency services
  - communication with key stakeholders
  - initial response/assessment and make safe

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of 9.1)

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Assessment

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

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Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Hazards: Confined spaces Electricity Gas Manual handling Noise Plant and equipment

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		Infected blood Chemicals Temperature extremes Lighting Radiation
B	All	Risk management plans: Identification of hazards Assessment of risks Identification of control measures Implementation of control measures and review of control measures Reference to conduct and reporting of hazard operational studies HAZOPS and HAZANS Recognition of six categories of exposures (see range statement)
C	At least first 5	Persons: Organisation employees Contractors Consultants Maintenance persons Appropriately experienced and qualified persons Drivers Cleaners Grounds and site security persons
D	At least 6	Control measures: Elimination of hazards Work procedures Standard operating procedures

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		Personal protective equipment Fire safety Plant and equipment isolation Training of appropriate persons Communication with appropriate persons Supervision of appropriate persons Maintenance of control measures
E	All	Gas Industry concepts for supervising operations Problem solving, decision making and conflict resolution Emergency management
F	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in Context of and specific resources for assessment, evidence should show demonstrated competency in coordinating and monitoring implementation of a risk management plan for a utilities industry facility

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG115B Manage gas system projects

UEGNSG116B Manage gas system physical resources

UEGNSG113B Manage a utilities industry OHS management

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system

UEGNSG120B Manage gas system environmental compliance

Or, with the following units of competency if delivered in the Advanced Diploma qualification:

UEGNSG115B Manage Gas Industry systems projects

UEGNSG116B Manage physical resources

UEGNSG117B Plan and implement the data acquisition and metering requirements of a gas system

UEGNSG118B Select and commission equipment to meet pressure and temperature control specifications

UEGNSG119B Manage workplace risk in a Gas Industry facility

UEGNSG120B Manage gas system environmental compliance

UEGNSG121B Prepare safe design specifications of a gas system

UEGNSG122B Manage a customer service gas business unit

UEGNSG123B Manage financial resources in a Gas Industry facility

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to coordinating and monitoring the implementation of risk management plan for a utilities industry facility.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Hazards (5)

Risks

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RANGE STATEMENT

Risk Management Plans

Persons

Control Measures

Relevant Persons

Legislative Requirements (5)

Emergency Exercises

Emergency Appliances

Safety Devices

Relevant Documentation (5)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG115B Manage gas systems projects

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the competency required to oversee the management of major construction or maintenance activities in either natural gas or LPG systems. This competency standard refers to Resources; Project activities; Appropriate persons; Legislative and company requirements; Relevant authorities and other stakeholders; Communication strategy; Relevant documentation; Records/reports.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety,

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License to practice **3)**

gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare project plan	1.1	OHS principles and practices and environmental and sustainable energy procedures which may influence the systems are reviewed and determined
	1.2	Resources are identified, tender documents and projected scope are prepared and tenders called for in accordance with company policy and procedures
	1.3	Performance measures are identified and project management plan is implemented in accordance with established procedures
	1.4	Testing procedures are discussed with appropriate persons in order to ascertain the project brief
	1.5	Testing parameters are established from organisational established procedures on policies and specifications
	1.6	Equipment, tools and personal protective equipment are selected and coordinated based on specified requirements and established procedures
	1.7	Work roles and tasks are allocated according to requirements and individual's competencies
	1.8	Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures

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ELEMENT		PERFORMANCE CRITERIA	
		1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
		1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
		1.11	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
2	Implement and manage project plan	2.1	Project schedule and project administration plan is developed and communication strategy with contractors, company representatives and technical experts is developed and implemented
		2.2	OHS and sustainable energy principles, functionality and practices to reduce the incidents of accidents and minimise waste are incorporated into the project in accordance with requirements and established procedures
		2.3	Applications for work permits, access permits and licences are prepared and submitted to authorities and stakeholders for approval and resources are acquired and administered in accordance with the project plan
		2.4	Contractors are selected and managed in accordance with the project plan and that project variations are negotiated with all stakeholders and progress reports are prepared and presented with explanations of any over runs
		2.5	Technical advice is given to hazards, assessed risks and control measures so that monitoring can be undertaken and appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
		2.6	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements

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ELEMENT	PERFORMANCE CRITERIA	
	2.7	Testing is undertaken according to requirements and established procedures
	2.8	Work teams are arranged to ensure planned goals are met according to established procedures
	2.9	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills
	2.10	Quality of work is monitored against personal performance agreement and established organisational and professional standards
	2.11	Strategic plans are developed incorporating organisation initiatives as per established procedures
3 Finalise and hand over projects	3.1	Remedial work is identified, scheduled and completed
	3.2	Final inspections are undertaken to ensure they comply with all requirements and include all specifications and documentations needed to complete the project
	3.3	Appropriate persons are notified of completion and reports and completion documents are finalised.
	3.4	Reports and completion documents are submitted to relevant persons for approval and where applicable, statutory or regulatory approval
	3.5	Approved copies of documents are issued and records are updated in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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REQUIRED SKILLS AND KNOWLEDGE

8)This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for managing gas systems projects.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G115B Gas system projects

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 5.1.1 Supervise Gas Industry operations

Evidence shall show an understanding of the requirements to undertake the supervision of Gas Industry operations, indicated by the following:

- Implementation of risk management and Occupational Health and Safety (OHS) practices and principles including, but not limited to:
  - risk assessment, risk control and risk control measures
  - hierarchy of control
  - personal protective equipment — strengths and weaknesses
  - identifying hazards and their consequences
  - identifying hazards, assessing associated risks and implementing appropriate control measures

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- developing hazard checklists
- reporting hazards including hazardous events

- planning theory and study of HAZOPS and HAZANS
- knowledge of applicable legislative requirements and Australian/New Zealand and ISO standards and codes of practice for the Gas Industry
- Implementation of relevant organisational policies and procedures
- identification and implementation of control measures
- establishing emergency management techniques
- principles and guidelines including critical incident analysis.

G 5.1.3 Plan for, respond to and manage emergencies

Evidence shall show an understanding and application of emergency management techniques in a Gas Industry environment, indicated by the following:

- emergency management concepts and principles:
  - auditing and planning
  - systems analysis
  - policies and procedures for non-employees and contractors
  - types of emergencies
  - dealing with an emergency
  - elements of an emergency plan
  - employee assistance programs.
- Develop an emergency management plan which includes:
  - First Aid and welfare
  - recovery and post recovery plans
  - legislative requirements
  - interaction with authorities/emergency services
  - communication with key stakeholders
  - initial response/assessment and make safe

G 5.1.7 Manage Gas Industry maintenance

Evidence shall show an understanding and application of relevant gas industry infrastructure maintenance and practices at a supervisory level indicated by the following:

- planning of scheduled and non-scheduled maintenance of applicable gas infrastructure
- coordination of maintenance activities
- Implement safety and environmental controls during maintenance activities

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- Comply with relevant regulations such as building Codes and Australian Standards during the planning and implementation of maintenance activities
- understanding of applicable project management techniques in maintenance planning and implementation
- manage gas industry projects
- understanding of applicable Human Resource requirements in maintenance activities including appropriate training and qualifications of maintenance personnel.
- Understanding and implementation of relevant aspects of organisational Quality Assurance requirements when planning and implementing maintenance activities

G 6.1.1 Understand and utilise concepts and skills for Gas Industry supervisors

Evidence shall show an understanding and interpretation of the concepts and skills required of Gas Industry supervisors to undertake activities, indicated by the following:

- applicable mathematical techniques and principles to enable production of relevant supervisory level calculations, data processing requirements and reports
- engineering principles and operating principles of pipeline systems
- understanding of safe design principles
- appropriate environmental requirements
- correctly read, analyse, interpret and record data
- third-party service location methods
- construction principles and safety
- applicable gas chemistry, properties and characteristics.

G 6.1.2 Understand and utilise information for Gas Industry supervisors

Evidence shall show an understanding of the requirements to undertake supervision/management in a Gas Industry environment, indicated by the following:

- principles of gas flow and gas metering
- organisational standard operating procedures
- site specific safety legislation and safety requirements
  - overview of Occupational Health and Safety including systematic approaches to OHS
  - health and safety stakeholders (union, employers, workers, contractors and managers) hazards
  - risk assessment and control relating to areas such as:

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- electrical safety
- vibration
- outdoor work
- stress
- equipment, tools and plant
- noise
- chemicals and substances
- manual handling
- confined spaces

- Stakeholder Relations
  - managing contractors, industry awards, and employee entitlements
  - understanding government and business relations
  - employee associations
  - industry associations
  - awards and agreements
  - collective bargaining and individual agreements
  - conciliation, arbitration, mediation and negotiation
  - coordinate the work of others

- adhere to OHS legislation and regulations
  - understanding government and the development of statute and common law
  - principles of Occupational Health and Safety and risk management
  - Occupational Health and Safety legislation and regulations
- observe environmental and legislative requirements
  - understanding government and the development of statute and common law
  - principles of Occupational Health and Safety
  - environmental and other legislative requirements
- apply applicable permit to work system including types of permit limitations
  - understanding the permit to work system
  - identifying the limitations in a permit to work system
- develop and review standard operating procedures
- review and report on completed work
- employ correct waste management procedures
  - appropriate waste management procedures
  - organisational requirements for waste management

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- consequences of not managing waste effectively
- knowledge of native title issues and legislation
- analyse relevant workplace data eg incident and environmental monitoring to evaluate the effectiveness of the OHS management system.

G 6.1.3 Commission/decommission pipelines and cathodic protection principles for Gas Industry supervisors

Evidence shall show an understanding of commission/decommissioning and cathodic protection principles required of Gas Industry supervisors, indicated by the following:

- commissioning and decommissioning procedures for pipeline and gas industry facilities and infrastructure
- cathodic protection systems
- plan and design commissioning procedures
- plan and design cathodic protection commissioning procedures

G 6.1.4 Communicate effectively

Evidence shall show an understanding and utilisation of technology for communication in a Gas Industry environment, indicated by the following:

- effective communication for Gas Industry managers and supervisors
  - motives for communication
  - communication networks: who communicates with whom
  - verbal and non-verbal communication
  - choosing the medium and the flow of a message
  - blocks to effective communication
- analyse and interpret recorded data, review and report
- use information technology for communication
  - understanding how to use information technology
  - effective use of email, internet and other communication mediums.

G 6.1.6 Plan and carry out project management

Evidence shall show an understanding and application of the requirements to undertake project management in a Gas Industry environment, indicated by the following:

- project management and costing
  - project planning processes

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    - determining project costing
    - planning for events and milestones
    - determining inputs
    - producing outputs to a plan
- planning theory and its processes
    - the importance of planning
    - the planning process
    - organisational goals and objectives
    - strategic planning
    - operational planning
    - forecasting
- prioritise techniques
    - organising/prioritise work flows
    - time management
    - stress management
- managing persons and resources including consultants
    - understanding people
    - understanding behaviour
    - perceiving the causes of behaviour
    - defining leadership
- manage meetings
    - understanding organisational communication
    - formal and informal organisational communication
    - managing meetings and recording minutes
    - drafting minutes
- prepare reports
    - planning the writing process
    - developing the scope and outline of a document/report
    - drafting documents/reports utilising a plan and outline
    - finalising documents/reports
- facilitate contracts and employment
    - parliament, government and the law
    - statute law
    - common law
    - contracts and contract law
    - employment law
- understanding of sound business principles and performance measures

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- understanding organisational behaviour
- business fundamentals
- establishing the principles of performance management
- establishing performance measures

- understanding of competition policy, budgets and product pricing and tariffs
  - understanding of government business relations in the Gas Industry
  - how tariffs are determined
  - working within legislative guidelines in tariffs and pricing.

G 6.1.7 Understand chemical and physical behaviours of gas

Evidence shall show an understanding of the chemical and physical behaviour of gases, and their effects in a gas system indicated by the following:

- chemical and physical behaviours of natural and liquefied petroleum gas
  - understanding of basic chemistry and physics of gases
  - the chemical makeup and properties of natural gas and LPG
  - dangers of working with natural gas and LPG and how to manage natural gas and LPG
- transportation of LPG and natural gas
  - understanding of issues associated with transporting of natural gas and LPG
- LPG supply logistics
  - correct filling procedures for LPG
  - identifying abnormal cylinder conditions
  - correct storage of LPG.

G 6.1.8 Managing environmental and cultural sensitive issues

Evidence shall show an understanding and implementation of the effective management of environmental and culturally sensitive issues in a Gas Industry environment, indicated by the following:

- understanding applicable environmental legislative compliance and regulation
  - understanding government and laws
  - penalties
  - acting in compliance with laws
- understanding of cultural and community standards and

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their sensitivities
    - communities and their interaction with government and business in Australia
    - cultural issues in Australia
    - using ethical behaviour in approaching cultural issues
    - anti discrimination legislation in Australia
    - native title issues in Australia
- understanding the impacts of gas installations and infrastructure on the environment and its impacts to native title
    - government and business environmental obligations
    - Australian environmental legislation and its affect on industry
    - the impact of construction of assets to the Australian environment
    - native title considerations for Gas Industry asset owners
- managing sensitive negotiations and communicating with a wide variety of stakeholders
    - understanding stakeholder politics in Australia
    - negotiation and bargaining
    - conciliation and arbitration
    - understanding of sensitive issues and the implications for negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment

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intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

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- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 2	Resources: Relevant persons Materials, tools and equipment Personal protective equipment and clothing company standard operating procedures Equipment manuals, training resources.
B	At least 3	Project activities: Major construction and maintenance activities in

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		the LPG or natural gas sector, Transmission and distribution pipelines LPG storage facilities greater than 50kL Underground storage Tankers and ships Control systems Custody transfer stations Odourising plant Corrosion control Interconnecting systems.
C	At least 2	Appropriate persons: Organisation employees Maintenance persons Appropriately experienced and qualified persons Site security persons Contractors and their employees Inspectors and regulatory authority representatives.
D	All	Legislative and company requirements: Occupational Health & Safety legislation Relevant Government Acts, regulations and codes of practice Australian Standards and Environmental legislative requirements Company Standard Operating Procedures and authorisation requirements and technical standards requirements

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E	At least 2	Relevant authorities and other stakeholders: Authorities Local councils Emergency services Road and rail transport authorities Government departments Land owners/Traditional land owners Contractors and other organisational persons
F	All	Communication strategy: Verbal directions Relevant documentation Project records/reports Electronic communications, internet communication.
G	At least 4	Relevant documentation: Specifications Drawings/plans; ‘as-constructed’ drawings/plans Manufacturer’s specifications Work permits Company standard operation and safety procedures Company management plans and policies Hot work permits Company forms and files OHS, laws and codes of practice Relevant Government

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		Acts, regulations and codes of practice Environmental legislative requirements Quality assurance; expenditure reports and budgets
H	At least 2	Records/reports: Relevant documentation Routine inspections (daily readings, monthly checks) Scheduled maintenance activities Mandatory or statutory inspections Hazard and incident reports
I	All	Interpreting Gas Industry drawings Understanding emergency management Concepts and skills for Gas Industry supervisors Understanding commission/decommission pipelines and cathodic protection principles for Gas Industry supervisors Communication for Gas Industry supervisors Understanding of project management techniques Understanding of chemical and physical behaviours of gas Managing environmental and cultural sensitive issues
J	At least one occasion	Deal with an unplanned event by drawing on

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		essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency of managing gas systems projects.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all

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necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG113B Manage a utilities industry OHS management system

UEGNSG116B Manage gas system physical resources

UEGNSG120B Manage gas system environmental compliance

Or, with the following units of competency if delivered in the Advanced Diploma qualification:

UEGNSG116B Manage physical resources

UEGNSG117B Plan and implement the data acquisition and metering requirements of a gas system

UEGNSG118B Select and commission equipment to meet pressure and temperature control specifications

UEGNSG119B Manage workplace risk

UEGNSG120B Manage gas system environmental compliance

UEGNSG121B Prepare and design specifications for a gas system

UEGNSG122B Manage a customer service gas business unit

UEGNSG123B Manage financial resources

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Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance..

This Unit shall be demonstrated in relation to managing gas systems projects.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Resources

Project activities

Appropriate persons (6)

Legislative and company requirements:

Relevant authorities and other stakeholders

Communication strategy

Relevant documentation (6)

Records/reports (6)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG116B Manage Gas Industry Physical Resources

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the competency to authorise the acquisition and management of physical resources to achieve the business's objectives. This competency standard refers to Physical resources; Acquisition and allocation of resources; Organisational policy and procedures that may vary between sectors and organisations; Budget formats; Budgets; Relevant authorities and other stakeholders; Expected lifetime of equipment.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where gas industry operations occur.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other then those directly related to Occupational Health and Safety, gas industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain

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License to practice **3)**

equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the Performance Criteria describe the required performance

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essential outcomes of a competency standard unit	needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Plan, determine and review physical resource requirements	1.1	Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures
		1.2	Liaison and communication issues with authorised persons, authorities, clients and land-owners are resolved and activities co-ordinated to carry out work
		1.3	Risk control measures are identified, prioritised and evaluated against the work schedule
		1.4	Physical resource requirements are determined in line with demonstrated needs and cost benefit analysis determined to demonstrate the return to the organisation
		1.5	Physical resource requirements are consolidated, rationalised and negotiated and acquired in the context of organisational requirements and budgets
		1.6	Replacement/acquisition/refurbishment of major items are scheduled based on expected lifetime of equipment and anticipated needs of the organisation
2	Direct and coordinate the acquisition and allocation of physical resources	2.1	Physical resource inventory is established and maintained for easy tracking of resource location/history
		2.2	Maintenance schedules and budgets are developed and approved in consultation with stakeholders with due regard to occupational health and safety needs and in accordance with

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures
	2.3	Mathematical models are used to analyse the effectiveness of the finished product as per requirements and established procedures
	2.4	Systems are developed and implemented which facilitate collection, processing and management of data on resource use and maintenance/asset management
	2.5	Technical advice is given to hazards, assessed risks and control measures so that monitoring can be undertaken and appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
	2.6	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.7	Work teams are arranged to ensure planned goals are met according to established procedures
	2.8	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired essential knowledge and associated skills
	2.9	Quality of work is monitored against personal performance agreement and established procedures and professional standards
	2.10	Strategic plans are developed incorporating organisation initiatives as per established procedures
3 Complete and coordinate physical resource requirements	3.1	Final inspections are undertaken to ensure they comply with all requirements and include all specifications and documentations needed to complete the project
	3.2	Effectiveness of acquisition and allocation of resources is monitored and assessed to meet

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ELEMENT	PERFORMANCE CRITERIA	
		organisational needs
	3.3	Inefficiencies in resource provision are identified and corrected
	3.4	Acquisition and allocation of resources and costs incurred are recorded and reported
	3.5	Appropriate persons are notified of completion and reports and completion documents are finalised
	3.6	Reports and completion documents are submitted to relevant persons for approval and where applicable, statutory or regulatory approval
	3.7	Approved copies of documents are issued and records are updated in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired for managing gas industry physical resources.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G116B Gas industry physical resources

G 5.1.6 Technical knowledge for Gas Industry managers

Evidence shall show an understanding and application of the technical knowledge required of Gas Industry managers, indicated by the following:

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- development of organisational operational strategies as required
- understanding maintenance philosophies
- engineering principles
- risk management in a Gas Industry environment
- principles of planning including project management planning.

G 6.1.9 Understand and implement financial management

Evidence shall show an understanding of the requirements to perform applicable Gas Industry financial management activities, indicated by the following:

- Understanding financial management with the ability to reporton project and company budgets utilising financial statements as required by organisational policies and procedures. These include but are not limited to:understanding financial management fundamentals and the how the following are tracked through in an accounting system:
  - assets and liabilities
  - revenue
  - expenses
  - equity
  - source documents
  - journals
  - ledgers
  - trial balance
- reading, interpreting and reporting on project/company progress using accounting reports such as budget and cash flow reports
- understanding of resource management systems to monitor inventory, stock, consumables and physical resources and other assets
  - managing resources
  - maintaining assets/assets management
  - stock/consumables control
  - maintaining assets register
- understanding of computer accounting/bookkeeping software effectively
  - accounting software systems
  - invoicing
  - reconciling accounts
  - purchasing

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- stock control
- general ledger
- payroll
- reporting.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered

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will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit is based, shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

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- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 5	Physical resources: Property/facilities Fixtures and plant Vehicles Equipment Stocks and supplies Gas systems and plant Works depot Pipelines Distribution systems Storage depots and installations
B	At least 5	Acquisition and allocation of resources: Identified priorities Sustainability Type of physical resource Urgency Cost of use Accessibility Endurance Maintenance demands Deployment time Customer needs Hazard and risk analysis
C	At least 1	Budget formats:

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		Zero based budgeting Program budgeting Line item budgeting Organisation specific budgets Output/outcome budgeting
D	All	Budget: Capital expenditure Recurrent expenditure Output investment proposal Cash flow
E	At least 4	Relevant authorities and other stakeholders: Staff Managers Government (state, local, federal) Unions Community Industry Owners of leased property
F	At least 3	Reports: Spread sheets Written reports Completion of proformas Completion of forms Verbal reports Government budget submission proformas
G	All	Work is conducted observing relevant anti-discrimination policies, procedures and regulations

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Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency working realistic environment and a variety of conditions.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

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Concurrent assessment and relationship with other units	**9.5)**
	There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to the managing of gas industry physical resources.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section 1 of this volume and form an integral part of the Range Statement of this unit:

Physical resources

Acquisition and allocation of resources

Organisational policy and procedures may vary between sectors and organisations

Budget formats

Budget

Relevant authorities and other stakeholders

Expected lifetime of equipment

Records and Reports (6)

Unit Sector(s)

Not applicable.

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Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG117B Plan and implement the data acquisition and metering requirements of a gas system

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the planning and commissioning of the data acquisition and metering requirements of a natural or liquefied petroleum gas system. This competency standard refers to Gas Systems; Data acquisition; Resources; Legislative requirements; Relevant authorities and other stakeholders; Relevant documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan data acquisition and metering requirements of a gas system	1.1 OHS principles and practices and environmental and sustainable energy procedures which may influence the systems are reviewed and determined
	1.2 Purpose of the data acquisition and metering requirements of a gas system are established after data is analysed and expected outcomes of the work are confirmed with the appropriate persons
	1.3 Properties and characteristics of the gas to be measured are identified as per established procedures on the development of a data acquisition and metering requirements system
	1.4 Design capacity of gas system is identified
	1.5 Back up systems are specified
	1.6 Legislative requirements are identified
	1.7 Data storage and communication systems are specified
	1.8 Work is prioritised and sequenced for the most efficient outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures
	1.9 Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work

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ELEMENT	PERFORMANCE CRITERIA	
	1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
2 Determine specific equipment and maintenance requirements	2.1	Systems modelling is used to evaluate alternative proposals as per established procedures
	2.2	Maintenance activities are designed and scheduled according to requirements and established procedures
	2.3	OHS and sustainable energy principles, functionality and practices to reduce the incidents of accidents and minimise waste are incorporated into the project in accordance with requirements and established procedures
	2.4	Technical advice is given to hazards, assessed risks and control measures so that monitoring can be undertaken and appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
	2.5	Essential Knowledge and Associated Skills are applied to analyse specific data and compared with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.6	Maintenance recording system is developed incorporating organisation initiatives as per established procedures
	2.7	Metering equipment is selected to meet performance specifications and is optimally located in the system
	2.8	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills
	2.9	Quality of work is monitored against personal performance agreement and established organisational and professional standards

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ELEMENT	PERFORMANCE CRITERIA	
3 Commission data collection and metering system	3.1	Final inspections of the metering and data acquisition plan is undertaken to ensure they comply with all requirements and include all specifications and documentations needed to complete the project
	3.2	Appropriate resources are obtained and scheduled according to the plan
	3.3	Company OHS policies and procedures are followed and the metering and data acquisition system is commissioned in accordance with the plan
	3.4	Appropriate persons are notified of completion and reports
	3.5	Reports are submitted to relevant persons for approval
	3.6	Approved copies of metering and data acquisition plan is issued and records are updated in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for planning and implement the data acquisition and metering requirements of a gas system.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G117 Data acquisition and metering requirements B

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G 4.1.5 3SCADA system operation

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 5.1.6 Technical knowledge for Gas Industry managers

Evidence shall show an understanding and application of the technical knowledge required of Gas Industry managers, indicated by the following:

- development of organisational operational strategies as required
- understanding maintenance philosophies
- engineering principles
- risk management in a Gas Industry environment
- principles of planning including project management planning.

G 6.1.1 Understand and utilise concepts and skills for Gas Industry supervisors

Evidence shall show an understanding and interpretation of the concepts and skills required of Gas Industry supervisors to undertake activities, indicated by the following:

- applicable mathematical techniques and principles to enable production of relevant supervisory level calculations, data processing requirements and reports
- engineering principles and operating principles of pipeline systems
- understanding of safe design principles
- appropriate environmental requirements
- correctly read, analyse, interpret and record data
- third-party service location methods
- construction principles and safety
- applicable gas chemistry, properties and characteristics.

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G 6.1.2 Understand and utilise information for Gas Industry supervisors

Evidence shall show an understanding of the requirements to undertake supervision/management in a Gas Industry environment, indicated by the following:

- principles of gas flow and gas metering
- organisational standard operating procedures
- site specific safety legislation and safety requirements
  - overview of Occupational Health and Safety including systematic approaches to OHS
  - health and safety stakeholders (union, employers, workers, contractors and managers) hazards
  - risk assessment and control relating to areas such as:
    - electrical safety
    - vibration
    - outdoor work
    - stress
    - equipment, tools and plant
    - noise
    - chemicals and substances
    - manual handling
    - confined spaces
  - Stakeholder Relations
    - managing contractors, industry awards, and employee entitlements
    - understanding government and business relations
    - employee associations
    - industry associations
    - awards and agreements
    - collective bargaining and individual agreements
    - conciliation, arbitration, mediation and negotiation
    - coordinate the work of others
- adhere to OHS legislation and regulations
  - understanding government and the development of statute and common law
  - principles of Occupational Health and Safety and risk management
  - Occupational Health and Safety legislation and regulations
- observe environmental and legislative requirements

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- understanding government and the development of statute and common law
- principles of Occupational Health and Safety
- environmental and other legislative requirements

- apply applicable permit to work system including types of permit limitations
  - understanding the permit to work system
  - identifying the limitations in a permit to work system
- develop and review standard operating procedures
- review and report on completed work
- employ correct waste management procedures
  - appropriate waste management procedures
  - organisational requirements for waste management
  - consequences of not managing waste effectively
- knowledge of native title issues and legislation
- analyse relevant workplace data eg incident and environmental monitoring to evaluate the effectiveness of the OHS management system.

G 6.1.3 Commission/decommission pipelines and cathodic protection principles for Gas Industry supervisors

Evidence shall show an understanding of commission/decommissioning and cathodic protection principles required of Gas Industry supervisors, indicated by the following:

- commissioning and decommissioning procedures for pipeline and gas industry facilities and infrastructure
- cathodic protection systems
- plan and design commissioning procedures
- plan and design cathodic protection commissioning procedures

G 6.1.4 Communicate effectively

Evidence shall show an understanding and utilisation of technology for communication in a Gas Industry environment, indicated by the following:

- effective communication for Gas Industry managers and supervisors
  - motives for communication
  - communication networks: who communicates with whom
  - verbal and non-verbal communication
  - choosing the medium and the flow of a message

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- blocks to effective communication
- analyse and interpret recorded data, review and report
- use information technology for communication
  - understanding how to use information technology
  - effective use of email, internet and other communication mediums.

G 6.1.7 Understand chemical and physical behaviours of gas

Evidence shall show an understanding of the chemical and physical behaviour of gases, and their effects in a gas system indicated by the following:

- chemical and physical behaviours of natural and liquefied petroleum gas
  - understanding of basic chemistry and physics of gases
  - the chemical makeup and properties of natural gas and LPG
  - dangers of working with natural gas and LPG and how to manage natural gas and LPG
- transportation of LPG and natural gas
  - understanding of issues associated with transporting of natural gas and LPG
- LPG supply logistics
  - correct filling procedures for LPG
  - identifying abnormal cylinder conditions
  - correct storage of LPG.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best

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utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

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- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 5	Gas systems: Custody Transfer Stations Tanker transfer Decantation Tempered Liquid Petroleum systems Field or District Regulators LPG systems Meters and regulators Transmission and distribution systems

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B	At least 4	Data acquisition: Temperature Pressure and flow rates from regulator or custody transfer stations Water bath heater operation (water temperature, pilot light and main burner operation) Faulty equipment (over pressure and under pressure, slam shut operation and filter problems) Pipeline ruptures Security system monitoring and pressure and volume data for 'balancing the system'
C	At least 4	Resources: Relevant persons Relevant authorities Company standard operating procedures Materials Equipment manuals/specifications Personal protective equipment Fire safety systems and training resources
D	All	Legislative requirements: Occupational Health and Safety legislation Relevant Government Acts, regulations and codes of practice Australian standards and

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		codes of practice Environmental legislative requirements
E	At least 3	Relevant authorities: Government authorities Landowners Stakeholders Local councils Fire authorities Other utilities
F	At least 8	Relevant documentation: Specifications, drawings and plans Manufacturer's specifications Company standard operational and safety procedures Company management plans and policies Work permits Hot work permits Company forms and files Acts and regulations Contracts Recording/reporting Maintenance activities Inspection and incident reports
G	All	Commission/decommission pipelines and cathodic protection principles for Gas Industry supervisors Communication for Gas Industry supervisors Chemical and physical

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		behaviours of gas
H	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in planning and implementing the data acquisition and metering requirements of a gas system.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working

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practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications
UEGNSG119B	Manage workplace risk
UEGNSG120B	Manage gas system environmental compliance
UEGNSG121B	Prepare and design specifications for a gas system
UEGNSG115B	Manage gas systems projects
UEGNSG122B	Manage a customer service gas business unit
UEGNSG123B	Manage financial resources
UEGNSG116B	Manage physical resources

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to planning and implementing the data

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RANGE STATEMENT

acquisition and metering requirements of a gas system.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Gas Systems

Data acquisition

Resources

Legislative requirements

Relevant authorities and other stakeholders

Relevant documentation (6)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG118B Select and commission equipment to meet pressure and temperature control specifications

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the selection and commissioning of equipment for pressure and temperature control in a natural gas or LPG system. This competency standard refers to Gas Systems; Gas Characteristics; Relevant resources; Legislative requirements; Relevant authorities and other stakeholders; Relevant documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Determine performance parameters for the system to be controlled	1.1 OHS principles and practices and environmental and sustainable energy procedures which may influence the systems are reviewed and determined
	1.2 Purpose of the performance parameters for the system to be controlled are established after data is analysed and expected outcomes of the work is confirmed with the appropriate personnel
	1.3 Organisational established procedures on policies and specifications for performance parameters for the system to be controlled are obtained or established with the appropriate personnel
	1.4 Properties and gas characteristics are identified and discussed with appropriate personnel
	1.5 Relevant documentation, standards and legislative requirements are analysed
	1.6 Growth requirements are factored into the performance requirements
	1.7 Work roles and tasks are allocated according to requirements and individual's competencies
	1.8 Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures
	1.9 Liaison and communication issues with authorised personnel, authorities, clients and

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ELEMENT	PERFORMANCE CRITERIA	
		land owners are resolved and activities coordinated to carry out work
	1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.11	Site requirements are identified and relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
2 Plan and oversee the commissioning of the equipment	2.1	Equipment and materials are selected to meet performance, budgetary and OHS requirements
	2.2	A commissioning plan and testing criteria are developed and implemented
	2.3	All relevant resources are scheduled
	2.4	All relevant supply authorities and statutory bodies are consulted and notified
	2.5	A performance monitoring plan is developed
	2.6	All relevant documentation is completed and authorised by the relevant authorities
	2.7	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.8	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills
	2.9	Quality of work is monitored against personal performance agreement and established organisational and professional standards
3 Validate system performance	3.1	Final inspections to validate system performance are undertaken to ensure they comply with all requirements and include all specifications and documentation needed to complete the project

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ELEMENT	PERFORMANCE CRITERIA
	3.2 System performance is reviewed to ensure performance of the system is within specifications
	3.3 System performance is reviewed to ensure balance is maintained with interconnected systems
	3.4 System performance is reviewed to ensure security of supply is within acceptable risk factors
	3.5 All reports and performance data are completed and lodged with the relevant authorities
	3.6 Appropriate personnel are notified of completion and reports and completion documents are finalised.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for selecting and commissioning equipment to meet pressure and temperature control specifications.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G118B Pressure and temperature control

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:

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- Process and Instrumentation Diagrams (PID)
- Facility and pipeline construction and as-built drawings
- Geographical Information System (GIS) drawings and data
- Electrical drawings
- Survey maps
- Pipeline route maps and alignment sheets

G 6.1.1 Understand and utilise concepts and skills for Gas Industry supervisors

Evidence shall show an understanding and interpretation of the concepts and skills required of Gas Industry supervisors to undertake activities, indicated by the following:

- applicable mathematical techniques and principles to enable production of relevant supervisory level calculations, data processing requirements and reports
- engineering principles and operating principles of pipeline systems
- understanding of safe design principles
- appropriate environmental requirements
- correctly read, analyse, interpret and record data
- third-party service location methods
- construction principles and safety
- applicable gas chemistry, properties and characteristics.

G 6.1.2 Understand and utilise information for Gas Industry supervisors

Evidence shall show an understanding of the requirements to undertake supervision/management in a Gas Industry environment, indicated by the following:

- principles of gas flow and gas metering
- organisational standard operating procedures
- site specific safety legislation and safety requirements
  - overview of Occupational Health and Safety including systematic approaches to OHS
  - health and safety stakeholders (union, employers, workers, contractors and managers) hazards
  - risk assessment and control relating to areas such as:
    - electrical safety
    - vibration
    - outdoor work
    - stress

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        - equipment, tools and plant
        - noise
        - chemicals and substances
        - manual handling
        - confined spaces
      - Stakeholder Relations
        - managing contractors, industry awards, and employee entitlements
        - understanding government and business relations
        - employee associations
        - industry associations
        - awards and agreements
        - collective bargaining and individual agreements
        - conciliation, arbitration, mediation and negotiation
        - coordinate the work of others
    - adhere to OHS legislation and regulations
        - understanding government and the development of statute and common law
        - principles of Occupational Health and Safety and risk management
        - Occupational Health and Safety legislation and regulations
    - observe environmental and legislative requirements
        - understanding government and the development of statute and common law
        - principles of Occupational Health and Safety
        - environmental and other legislative requirements
    - apply applicable permit to work system including types of permit limitations
        - understanding the permit to work system
        - identifying the limitations in a permit to work system
    - develop and review standard operating procedures
    - review and report on completed work
    - employ correct waste management procedures
        - appropriate waste management procedures
        - organisational requirements for waste management
        - consequences of not managing waste effectively
    - knowledge of native title issues and legislation

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- analyse relevant workplace data eg incident and environmental monitoring to evaluate the effectiveness of the OHS management system.

G 6.1.3 Commission/decommission pipelines and cathodic protection principles for Gas Industry supervisors

Evidence shall show an understanding of commission/decommissioning and cathodic protection principles required of Gas Industry supervisors, indicated by the following:

- commissioning and decommissioning procedures for pipeline and gas industry facilities and infrastructure
- cathodic protection systems
- plan and design commissioning procedures
- plan and design cathodic protection commissioning procedures

G 6.1.4 Communicate effectively

Evidence shall show an understanding and utilisation of technology for communication in a Gas Industry environment, indicated by the following:

- effective communication for Gas Industry managers and supervisors
  - motives for communication
  - communication networks: who communicates with whom
  - verbal and non-verbal communication
  - choosing the medium and the flow of a message
  - blocks to effective communication
- analyse and interpret recorded data, review and report
- use information technology for communication
  - understanding how to use information technology
  - effective use of email, internet and other communication mediums.

G 6.1.5 Optimise performance of Pressure and temperature control equipment

Evidence shall show an understanding of the requirements of pressure and temperature control equipment at a supervision level in a Gas Industry environment, indicated by the following:

- operating principles of pressure and temperature control equipment and their performance characteristics including but not limited to:

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- Electronic control equipment
- Pneumatic control equipment

- Designing and modification to pressure and temperature equipment

G 6.1.6 Plan and carry out project management

Evidence shall show an understanding and application of the requirements to undertake project management in a Gas Industry environment, indicated by the following:

- project management and costing
  - project planning processes
  - determining project costing
  - planning for events and milestones
  - determining inputs
  - producing outputs to a plan
- planning theory and its processes
  - the importance of planning
  - the planning process
  - organisational goals and objectives
  - strategic planning
  - operational planning
  - forecasting
- prioritise techniques
  - organising/prioritise work flows
  - time management
  - stress management
- managing persons and resources including consultants
  - understanding people
  - understanding behaviour
  - perceiving the causes of behaviour
  - defining leadership
- manage meetings
  - understanding organisational communication
  - formal and informal organisational communication
  - managing meetings and recording minutes
  - drafting minutes
- prepare reports
  - planning the writing process
  - developing the scope and outline of a document/report
  - drafting documents/reports utilising a plan and

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outline
    - finalising documents/reports
- facilitate contracts and employment
    - parliament, government and the law
    - statute law
    - common law
    - contracts and contract law
    - employment law
- understanding of sound business principles and performance measures
    - understanding organisational behaviour
    - business fundamentals
    - establishing the principles of performance management
    - establishing performance measures
- understanding of competition policy, budgets and product pricing and tariffs
    - understanding of government business relations in the Gas Industry
    - how tariffs are determined
    - working within legislative guidelines in tariffs and pricing.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment

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is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline,

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work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 2	Gas systems: Transmission and distribution pipelines Storage facilities Underground storage LPG installations Tanker and storage facilities
B	At least 2	Gas characteristics: Temperature Chemical composition Pressures and pressure reduction

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		Reserve quantities LPG evaporation rates
C	At least 4	Relevant resources: Relevant personnel Materials and equipment Personal protective equipment Company standard operating procedures Equipment manuals Training resources
D	All	Legislative requirements: Occupational Health and Safety, government acts and regulations Australian standards and codes of practice Environmental legislative requirements
E	At least 3	Relevant requirements: Government authorities Landowners/Traditional land owners Stakeholders Local councils Fire authorities Other utilities Statutory authorities
F	At least 5	Relevant documentation: Contracts Specifications Drawings/plans Manufacturer's specifications

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		Work permits Company standard operation and safety procedures Company management plans and policies Company forms and files Laws and codes of practice
G	All	Interpret Gas Industry drawings Understand the commission/decommission pipelines and cathodic protection principles Communicate to Gas Industry supervisors Understand pressure and temperature control equipment Project manage
H	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in selecting and commissioning equipment to meet pressure and temperature control specifications.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG117B Plan and implement the data acquisition and metering requirements of a gas system

UEGNSG119B Manage workplace risk

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UEGNSG120B Manage gas system environmental compliance

UEGNSG121B Prepare and design specifications for a gas system

UEGNSG115B Manage gas systems projects

UEGNSG122B Manage a customer service gas business unit

UEGNSG123B Manage financial resources

UEGNSG116B Manage physical resources

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to selecting and commissioning equipment to meet pressure and temperature control specifications.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Gas Systems

Gas Characteristics

Relevant resources

Legislative requirements

Relevant authorities and other stakeholders

Relevant documentation (6)

Unit Sector(s)

Not applicable.

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Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG119B Manage workplace risk in a gas industry facility

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the managing of risk management systems and practices in the workplace. This competency standard refers to Risk Management principles; Risk Management Plans; Appropriate persons; Authorisation; Risks; Hazards; Control measures; Relevant documentation; Legislative requirements; Emergency exercises; Emergency appliances; Contingency plans and Safety devices.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety,

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License to practice **3)**

gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Manage the identification and development of a risk management system using risk management principles	1.1	OHS principles and practices and Environmental and Sustainable Energy procedures which may influence the systems are reviewed and determined
		1.2	Purpose of the risk management plan is established after data is analysed and expected outcomes are confirmed with the appropriate persons
		1.3	Organisational established procedures on policies and specifications for the development of a risk management plan are obtained
		1.4	Work roles and tasks are allocated according to requirements and individual's competencies
		1.5	Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures
		1.6	Liaison and communication issues with authorised persons, authorities and clients are resolved and activities coordinated to carry out work
2	Manage the minimisation of risks in the work environment for	2.1	Decisions regarding the risk management plan are made on the basis of safety and effective outcomes according to requirements and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
specific projects		
	2.2	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.3	Risk management plan and critical incident report responsibilities are confirmed and managed for specific project activities to minimise risk
	2.4	Project schedule to establish time frame, work activities and procurement of materials is approved
	2.5	Procedures and work instructions are received and approved for project activities according to the risk management plan
	2.6	Appropriate persons are counselled, where appropriate, for compliance with company risk management policies, standard operating procedures and relevant documentation
	2.7	Appropriate persons are assessed to ensure they comply with the company/site-specific procedures, health, safety and environmental requirements
	2.8	Project compliance to risk management plan is evaluated and reported and approved in accordance with company policies, procedures and relevant documentation processes
3 Manage and review critical incident contingency plans	3.1	Critical incident report is received for evaluation to determine appropriate remedial measures according to company policies, procedures and relevant documentation processes are completed
	3.2	Appropriate persons are authorised for training and qualified to the type of emergency exercises required according to company policies, procedures and relevant documentation processes are completed

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ELEMENT	PERFORMANCE CRITERIA
	3.3 Emergency appliances are authorised for selection and secured appropriate to the type of emergency exercise required according to company policies and procedures
	3.4 Emergency appliances and safety devices are authorised for testing according to company standard operating policies and procedures, legislative requirements and manufacturers specifications
	3.5 Emergency exercises are authorised and conducted according to developed contingency plans and monitored for performance and recorded accordingly
	3.6 Final inspections of the risk management plan are undertaken to ensure they comply with all requirements and include all specifications and documentations needed to complete the project
	3.7 Risk management plan report is submitted to relevant persons for approval

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for managing workplace risk in a Gas Industry facility.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G119B Workplace risk

G 5.1.1 Supervise Gas Industry operations

Evidence shall show an understanding of the requirements to

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undertake the supervision of Gas Industry operations, indicated by the following:

- Implementation of risk management and Occupational Health and Safety (OHS) practices and principles including, but not limited to:
  - risk assessment, risk control and risk control measures
  - hierarchy of control
  - personal protective equipment — strengths and weaknesses
  - identifying hazards and their consequences
  - identifying hazards, assessing associated risks and implementing appropriate control measures
  - developing hazard checklists
  - reporting hazards including hazardous events
- planning theory and study of HAZOPS and HAZANS
- knowledge of applicable legislative requirements and Australian/New Zealand and ISO standards and codes of practice for the Gas Industry
- Implementation of relevant organisational policies and procedures
- identification and implementation of control measures
- establishing emergency management techniques
- principles and guidelines including critical incident analysis.

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems
  - negotiation with internal and external stakeholders
  - the nature of negotiation
  - strategy and tactics of bargaining
  - pre-negotiation essentials
  - communication in negotiation

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- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

G 5.1.3 Plan for, respond to and manage emergencies

Evidence shall show an understanding and application of emergency management techniques in a Gas Industry environment, indicated by the following:

- emergency management concepts and principles:
  - auditing and planning
  - systems analysis
  - policies and procedures for non-employees and contractors
  - types of emergencies
  - dealing with an emergency
  - elements of an emergency plan
  - employee assistance programs.
- Develop an emergency management plan which includes:
  - First Aid and welfare
  - recovery and post recovery plans
  - legislative requirements
  - interaction with authorities/emergency services
  - communication with key stakeholders
  - initial response/assessment and make safe

G 5.1.4 Management techniques for utilities industry supervision

Evidence shall show an understanding and application of management techniques required of Gas Industry operators in a supervisory capacity, indicated by the following:

- industrial awards and employee entitlements
  - industrial conflict
  - industrial relations issues
  - understanding industrial awards and employee entitlements
  - individual and collective bargaining and agreements
- characteristics of ethnic and cultural groups
- Applicable environmental requirements
- relevant organisational standard operating procedures, site specific safety legislation and requirements
- correct waste management procedures

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- application of OHS management in relation to other organisational management systems.
- Related organisational policies and procedures such as business planning, training, purchasing.

G 6.1.1 Understand and utilise concepts and skills for Gas Industry supervisors

Evidence shall show an understanding and interpretation of the concepts and skills required of Gas Industry supervisors to undertake activities, indicated by the following:

- applicable mathematical techniques and principles to enable production of relevant supervisory level calculations, data processing requirements and reports
- engineering principles and operating principles of pipeline systems
- understanding of safe design principles
- appropriate environmental requirements
- correctly read, analyse, interpret and record data
- third-party service location methods
- construction principles and safety
- applicable gas chemistry, properties and characteristics.

G 6.1.4 Communicate effectively

Evidence shall show an understanding and utilisation of technology for communication in a Gas Industry environment, indicated by the following:

- effective communication for Gas Industry managers and supervisors
  - motives for communication
  - communication networks: who communicates with whom
  - verbal and non-verbal communication
  - choosing the medium and the flow of a message
  - blocks to effective communication
- analyse and interpret recorded data, review and report
- use information technology for communication
  - understanding how to use information technology
  - effective use of email, internet and other communication mediums.

G 6.1.6 Plan and carry out project management

Evidence shall show an understanding and application of the requirements to undertake project management in a Gas Industry environment, indicated by the following:

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- project management and costing
  - project planning processes
  - determining project costing
  - planning for events and milestones
  - determining inputs
  - producing outputs to a plan
- planning theory and its processes
  - the importance of planning
  - the planning process
  - organisational goals and objectives
  - strategic planning
  - operational planning
  - forecasting
- prioritise techniques
  - organising/prioritise work flows
  - time management
  - stress management
- managing persons and resources including consultants
  - understanding people
  - understanding behaviour
  - perceiving the causes of behaviour
  - defining leadership
- manage meetings
  - understanding organisational communication
  - formal and informal organisational communication
  - managing meetings and recording minutes
  - drafting minutes
- prepare reports
  - planning the writing process
  - developing the scope and outline of a document/report
  - drafting documents/reports utilising a plan and outline
  - finalising documents/reports
- facilitate contracts and employment
  - parliament, government and the law
  - statute law
  - common law
  - contracts and contract law
  - employment law

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- understanding of sound business principles and performance measures
  - understanding organisational behaviour
  - business fundamentals
  - establishing the principles of performance management
  - establishing performance measures
- understanding of competition policy, budgets and product pricing and tariffs
  - understanding of government business relations in the Gas Industry
  - how tariffs are determined
  - working within legislative guidelines in tariffs and pricing.

G 6.1.7 Understand chemical and physical behaviours of gas

Evidence shall show an understanding of the chemical and physical behaviour of gases, and their effects in a gas system indicated by the following:

- chemical and physical behaviours of natural and liquefied petroleum gas
  - understanding of basic chemistry and physics of gases
  - the chemical makeup and properties of natural gas and LPG
  - dangers of working with natural gas and LPG and how to manage natural gas and LPG
- transportation of LPG and natural gas
  - understanding of issues associated with transporting of natural gas and LPG
- LPG supply logistics
  - correct filling procedures for LPG
  - identifying abnormal cylinder conditions
  - correct storage of LPG.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with

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EVIDENCE GUIDE

the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to **9.2)**

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demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Risk Management principles: Six categories of exposures

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		(personal, property, financial, environmental, product and administrative, legislative compliance, Occupational Health and Safety, procedure systems, vicarious liability, professional liability.
B	At least 4	Risk Management Plans: Identification of hazards assessment of risks Identification of control measures Implementation of control measures and review of control measures Reference to conduct and reporting of hazard and operability studies (HAZOPS) and hazard analysis studies (HAZANS) for critical incidents Recognition of six categories of exposures (see range statement for further information) Identification and use of Manufacturer's specifications and Australian/New Zealand and ISO standards Contingency plans for response to critical incidents
C	All	Risks (assessment for): Injury death, illness, damage to plant/equipment, financial loss, non-compliance with legislation, damage to products

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D	All	Hazards: Confined spaces, gas, electricity, manual handling, noise, plant and equipment, infected blood, chemicals, temperature, lighting, radiation.
E	All	Control measures: Elimination of hazards, work procedures, Standard Operating Procedures, Personal Protective Equipment, fire safety, plant and equipment isolation, selection and training of appropriate persons, communications with appropriate persons, supervision of appropriate persons, management of control measures
F	All	Relevant documentation: Australian/New Zealand and ISO Standards; company risk management policy; codes of practice; standard operating procedures; Australian Dangerous Goods; trade practices; Occupational Health and Safety reporting requirements; injury reporting; claims management; contractor control; hazardous substances management
G	At least 2	Emergency exercises: Desktop and in-field simulation emergency exercises (involving fire; explosion; vapour/liquid leak; excavated/ruptured pipeline)

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		LPG road/rail accidents Loss of supply Lost or unaccounted for persons Medical emergencies
H	All	Emergency appliances: Emergency trucks/trailers Emergency plant (compressors, cranes, welding equipment etc) Breathing apparatus Fire fighting equipment
I	All	Contingency plans: Emergency responses to a range of abnormal operating conditions Plans for responses to critical incidents Prioritise proposed responses
J	All	Knowledge of problem solving, decision making and conflict resolution Emergency management Communication for Gas Industry supervisors Ability to apply project management techniques Understanding of chemical and physical behaviours of gas
K	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above

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		listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in managing workplace risk in a Gas Industry facility.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

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Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG117B	Plan and Implement the data acquisition and metering requirements of a gas system
UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications
UEGNSG120B	Manage gas system environmental compliance
UEGNSG121B	Prepare and design specifications for a gas system
UEGNSG115B	Manage gas systems projects
UEGNSG122B	Manage a customer service gas business unit
UEGNSG123B	Manage financial resources
UEGNSG116B	Manage physical resources

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to managing workplace risk in Gas Industry facility.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Risk Management principles

Risk Management Plans

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RANGE STATEMENT

Appropriate persons (6)

Authorisation

Risks

Hazards (6)

Control measures

Relevant documentation (6)

Legislative requirements (5)

Emergency exercises

Emergency appliances

Contingency plans

Safety devices include

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG120B Manage gas system environmental compliance

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the skills and knowledge required to ensure that all gas installations and assets comply with legal, environmental, Occupational Health and Safety and community standards. This competency standard refers to Gas systems; Legislative compliance; Environmental issues; Safety issues and Relevant personnel.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection,

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License to practice **3)**

telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Identify and document environmental issues for a proposed gas system	1.1 OHS principles and practices and Environmental and Sustainable Energy procedures which may influence the system are reviewed and determined
	1.2 Legislative requirements are identified and impact assessments are conducted or arranged as appropriate according to established procedures
	1.3 Organisational established procedures on policies and specifications for the work are obtained or established with the appropriate personnel
	1.4 Testing parameters are established from organisational established procedures on policies and specifications
	1.5 Testing procedures are discussed with persons in order to ascertain the project brief
	1.6 Equipment, tools and personal protective equipment are selected and coordinated based on specified requirements and established procedures
	1.7 Work roles and tasks are allocated according to requirements and individual's competencies
	1.8 Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Liaison and communication issues with authorised personnel, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.11	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
2 Facilitate negotiations for compliance with all Regulations, Standards and Codes of Practice	2.1	All internal and external stakeholders are identified and relevant and qualified persons are consulted on compliance needs
	2.2	Negotiated decisions are made on the basis of safety and environmental compliance and effective outcomes according to requirements and established procedures
	2.3	Technical advice is given regarding hazards, assessed risks and control measures so that monitoring can be undertaken and appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
	2.4	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.5	Work teams are arranged to ensure planned goals are met according to established procedures
	2.6	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills
	2.7	Quality of work is monitored against personal performance agreement and established

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ELEMENT	PERFORMANCE CRITERIA	
		organisational and professional standards
	2.8	Strategic plans are developed incorporating organisation initiatives as per established procedures
3 Review environmental and OHS management plans for a gas system	3.1	Environmental and OHS risks and their likely impacts for a gas system on the installation assets and to communities are identified and analysed to determine control options
	3.2	Options for addressing potential impacts are identified, proposed and costed
	3.3	Requisite environmental and OHS management strategies are determined and recommendations made according to company policies, procedures and processes
	3.4	Requisite environmental and OHS management strategies are determined and recommendations made according to company policies, procedures and processes
	3.5	Final inspections of the work are undertaken to ensure they comply with all requirements and include all specifications and documentations needed to complete the project
	3.6	Persons are notified of completion and reports and completion documents are finalised
	3.7	Reports and completion documents are submitted to relevant personnel and organisations for approval and where applicable, statutory or regulatory approval
	3.8	Approved copies of documents are issued and records are updated in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for managing gas system environmental compliance.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G120B Gas system environmental compliance

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 5.1.1 Supervise Gas Industry operations

Evidence shall show an understanding of the requirements to undertake the supervision of Gas Industry operations, indicated by the following:

- Implementation of risk management and Occupational Health and Safety (OHS) practices and principles including, but not limited to:
  - risk assessment, risk control and risk control measures
  - hierarchy of control
  - personal protective equipment — strengths and weaknesses
  - identifying hazards and their consequences
  - identifying hazards, assessing associated risks and implementing appropriate control measures

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- developing hazard checklists
- reporting hazards including hazardous events

- planning theory and study of HAZOPS and HAZANS
- knowledge of applicable legislative requirements and Australian/New Zealand and ISO standards and codes of practice for the Gas Industry
- Implementation of relevant organisational policies and procedures
- identification and implementation of control measures
- establishing emergency management techniques
- principles and guidelines including critical incident analysis.

G 5.1.3 Plan for, respond to and manage emergencies

Evidence shall show an understanding and application of emergency management techniques in a Gas Industry environment, indicated by the following:

- emergency management concepts and principles:
  - auditing and planning
  - systems analysis
  - policies and procedures for non-employees and contractors
  - types of emergencies
  - dealing with an emergency
  - elements of an emergency plan
  - employee assistance programs.
- Develop an emergency management plan which includes:
  - First Aid and welfare
  - recovery and post recovery plans
  - legislative requirements
  - interaction with authorities/emergency services
  - communication with key stakeholders
  - initial response/assessment and make safe

G 6.1.1 Understand and utilise concepts and skills for Gas Industry supervisors

Evidence shall show an understanding and interpretation of the concepts and skills required of Gas Industry supervisors to undertake activities, indicated by the following:

- applicable mathematical techniques and principles to enable production of relevant supervisory level calculations, data processing requirements and reports
- engineering principles and operating principles of

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pipeline systems
- understanding of safe design principles
- appropriate environmental requirements
- correctly read, analyse, interpret and record data
- third-party service location methods
- construction principles and safety
- applicable gas chemistry, properties and characteristics.

G 6.1.2 Understand and utilise information for Gas Industry supervisors

Evidence shall show an understanding of the requirements to undertake supervision/management in a Gas Industry environment, indicated by the following:

- principles of gas flow and gas metering
- organisational standard operating procedures
- site specific safety legislation and safety requirements
  - overview of Occupational Health and Safety including systematic approaches to OHS
  - health and safety stakeholders (union, employers, workers, contractors and managers) hazards
  - risk assessment and control relating to areas such as:
    - electrical safety
    - vibration
    - outdoor work
    - stress
    - equipment, tools and plant
    - noise
    - chemicals and substances
    - manual handling
    - confined spaces
  - Stakeholder Relations
    - managing contractors, industry awards, and employee entitlements
    - understanding government and business relations
    - employee associations
    - industry associations
    - awards and agreements
    - collective bargaining and individual agreements
    - conciliation, arbitration, mediation and negotiation
    - coordinate the work of others
- adhere to OHS legislation and regulations

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- understanding government and the development of statute and common law
- principles of Occupational Health and Safety and risk management
- Occupational Health and Safety legislation and regulations

- observe environmental and legislative requirements
  - understanding government and the development of statute and common law
  - principles of Occupational Health and Safety
  - environmental and other legislative requirements
- apply applicable permit to work system including types of permit limitations
  - understanding the permit to work system
  - identifying the limitations in a permit to work system
- develop and review standard operating procedures
- review and report on completed work
- employ correct waste management procedures
  - appropriate waste management procedures
  - organisational requirements for waste management
  - consequences of not managing waste effectively
- knowledge of native title issues and legislation
- analyse relevant workplace data eg incident and environmental monitoring to evaluate the effectiveness of the OHS management system.

G 6.1.6 Plan and carry out project management

Evidence shall show an understanding and application of the requirements to undertake project management in a Gas Industry environment, indicated by the following:

- project management and costing
  - project planning processes
  - determining project costing
  - planning for events and milestones
  - determining inputs
  - producing outputs to a plan
- planning theory and its processes
  - the importance of planning
  - the planning process
  - organisational goals and objectives
  - strategic planning
  - operational planning

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    - forecasting
- prioritise techniques
    - organising/prioritise work flows
    - time management
    - stress management
- managing persons and resources including consultants
    - understanding people
    - understanding behaviour
    - perceiving the causes of behaviour
    - defining leadership
- manage meetings
    - understanding organisational communication
    - formal and informal organisational communication
    - managing meetings and recording minutes
    - drafting minutes
- prepare reports
    - planning the writing process
    - developing the scope and outline of a document/report
    - drafting documents/reports utilising a plan and outline
    - finalising documents/reports
- facilitate contracts and employment
    - parliament, government and the law
    - statute law
    - common law
    - contracts and contract law
    - employment law
- understanding of sound business principles and performance measures
    - understanding organisational behaviour
    - business fundamentals
    - establishing the principles of performance management
    - establishing performance measures
- understanding of competition policy, budgets and product pricing and tariffs
    - understanding of government business relations in the Gas Industry
    - how tariffs are determined
    - working within legislative guidelines in tariffs and

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pricing.

G 6.1.7 Understand chemical and physical behaviours of gas

Evidence shall show an understanding of the chemical and physical behaviour of gases, and their effects in a gas system indicated by the following:

- chemical and physical behaviours of natural and liquefied petroleum gas
  - understanding of basic chemistry and physics of gases
  - the chemical makeup and properties of natural gas and LPG
  - dangers of working with natural gas and LPG and how to manage natural gas and LPG
- transportation of LPG and natural gas
  - understanding of issues associated with transporting of natural gas and LPG
- LPG supply logistics
  - correct filling procedures for LPG
  - identifying abnormal cylinder conditions
  - correct storage of LPG.

G 6.1.8 Manage environmental and culturally sensitive issues

Evidence shall show an understanding and implementation of the effective management of environmental and culturally sensitive issues in a Gas Industry environment, indicated by the following:

- understanding applicable environmental legislative compliance and regulation
  - understanding government and laws
  - penalties
  - acting in compliance with laws
- understanding of cultural and community standards and their sensitivities
  - communities and their interaction with government and business in Australia
  - cultural issues in Australia
  - using ethical behaviour in approaching cultural issues
  - anti discrimination legislation in Australia
  - native title issues in Australia
- understanding the impacts of gas installations and infrastructure on the environment and its impacts to native title
  - government and business environmental obligations

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- Australian environmental legislation and its affect on industry
- the impact of construction of assets to the Australian environment
- native title considerations for Gas Industry asset owners

- managing sensitive negotiations and communicating with a wide variety of stakeholders
  - understanding stakeholder politics in Australia
  - negotiation and bargaining
  - conciliation and arbitration
  - understanding of sensitive issues and the implications for negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being

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assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in

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accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	Any 1	Gas systems Natural gas transmission, distribution and storage Liquefied petroleum gas tanker and ship transport Storage and processing terminals and distribution systems
B	All	Legislative compliance Occupational Health and Safety legislation Relevant Government Acts, regulations and codes of practice Australian Standards and Codes of Practice Environmental legislative requirements
C	All	Environmental issues; Political, legal, community and aesthetic impact of installations
D	All	Safety issues

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		Occupational Health and Safety operatives Ongoing maintenance of facilities Emergency plans Safety cases and environmental impact assessments for major hazardous facilities (MHFs)
E	At least 6	Relevant personnel: Managers Other supervisors Inter-company departments Other utilities Council representatives Producers, transporters/shippers Consultants Government bodies/agencies Refinery personnel Customers Land owners/Traditional land owners
F	All	Relevant authorities: Government authorities Land owners both current and traditional Local councils Land management groups Other utilities In-house quality control groups and management
G	All	Interpreting Gas Industry drawings

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		Understanding emergency management Ability to apply project management techniques Understanding chemical and physical behaviours of gas Managing environmental and cultural sensitive issues
H	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in managing gas system environmental compliance.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

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Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG117B	Plan and implement the data acquisition and metering requirements of a gas system
UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications
UEGNSG119B	Manage workplace risk
UEGNSG121B	Prepare and design specifications for a gas system
UEGNSG115B	Manage gas system projects
UEGNSG122B	Manage a customer service gas business unit
UEGNSG123B	Manage financial resources
UEGNSG116B	Manage physical resources

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Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to basic use of managing gas system environmental compliance.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Gas systems

Legislative compliance

Environmental issues

Safety issues

Relevant personnel

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG121B Prepare safe design specifications of a gas system

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the requirements to identify safe systems design specifications based on the required Performance Criteria for a gas system/installation, covering natural or liquefied petroleum gas. The competency standard refers to Gas systems; Environmental hazards; System logistics; Resources; Relevant Documentation; Legislative compliance; Relevant authorities.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare input and output Performance Criteria for the system	1.1	OHS principles and practices and Environmental and Sustainable Energy procedures which may influence the systems are reviewed and determined
	1.2	Proposed system usage is analysed and technical requirements of the system are investigated and expected outcomes of the work are confirmed with the appropriate persons
	1.3	Organisational established procedures on policies and specifications for the job are obtained or established with the appropriate persons
	1.4	Testing parameters are established from organisational established procedures on policies and specifications
	1.5	Testing procedures are discussed with appropriate persons in order to ascertain the project brief
	1.6	Equipment, tools and personal protective equipment are selected and coordinated based on specified requirements and established procedures
	1.7	Work roles and tasks are allocated according to requirements and individual's competencies
	1.8	Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.11	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
2 Assess the impact of the system on the external environment	2.1	System logistics are determined and impact on interconnected systems is assessed
	2.2	OHS and sustainable energy principles, functionality and practices to reduce the incidents of accidents and minimise waste are incorporated into the project in accordance with requirements and established procedures
	2.3	Decisions are made on the basis of safety and effective outcomes according to requirements and established procedures
	2.4	Mathematical models are used to analyse the effectiveness of the finished product as per requirements and established procedures
	2.5	Technical advice is given to hazards, assessed risks and control measures so that monitoring can be undertaken and appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
	2.6	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.7	Testing is undertaken according to requirements and established procedures
	2.8	Work teams are arranged to ensure planned goals are met according to established

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ELEMENT	PERFORMANCE CRITERIA	
		procedures
	2.9	Solutions to non-routine problems are identified and actioned, using acquired Essential Knowledge and Associated Skills, according to requirements
	2.10	Quality of work is monitored against personal performance agreement and established organisational and professional standards
	2.11	Strategic plans are developed incorporating organisational initiatives as per established procedures
3 Identify options for the system and evaluate options and prepare specifications	3.1	Final inspections are undertaken to ensure they comply with all requirements and include all specifications and documentation needed to complete the project
	3.2	Design and construction resources are identified and availability and price is determined and maintenance requirements are documented
	3.3	Cost benefit analysis is prepared and evaluation criteria are determined, any shortfalls in recommended option are justified and all compliance requirements are met
	3.4	Appropriate persons are notified of completion and reports and completion documents are finalised.
	3.5	Reports and completion documents are submitted to relevant persons for approval and where applicable, statutory or regulatory approval
	3.6	Approved copies of documents are issued and records are updated in accordance with established procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for preparing design specifications of a gas system.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G121B Gas system design specifications

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 5.1.1 Supervise Gas Industry operations

Evidence shall show an understanding of the requirements to undertake the supervision of Gas Industry operations, indicated by the following:

- Implementation of risk management and Occupational Health and Safety (OHS) practices and principles including, but not limited to:
  - risk assessment, risk control and risk control measures
  - hierarchy of control
  - personal protective equipment — strengths and weaknesses
  - identifying hazards and their consequences

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- identifying hazards, assessing associated risks and implementing appropriate control measures
- developing hazard checklists
- reporting hazards including hazardous events

- planning theory and study of HAZOPS and HAZANS
- knowledge of applicable legislative requirements and Australian/New Zealand and ISO standards and codes of practice for the Gas Industry
- Implementation of relevant organisational policies and procedures
- identification and implementation of control measures
- establishing emergency management techniques
- principles and guidelines including critical incident analysis.

G 5.1.3 Plan for, respond to and manage emergencies

Evidence shall show an understanding and application of emergency management techniques in a Gas Industry environment, indicated by the following:

- emergency management concepts and principles:
  - auditing and planning
  - systems analysis
  - policies and procedures for non-employees and contractors
  - types of emergencies
  - dealing with an emergency
  - elements of an emergency plan
  - employee assistance programs.
- Develop an emergency management plan which includes:
  - First Aid and welfare
  - recovery and post recovery plans
  - legislative requirements
  - interaction with authorities/emergency services
  - communication with key stakeholders
  - initial response/assessment and make safe

G 6.1.1 Understand and utilise concepts and skills for Gas Industry supervisors

Evidence shall show an understanding and interpretation of the concepts and skills required of Gas Industry supervisors to undertake activities, indicated by the following:

- applicable mathematical techniques and principles to enable production of relevant supervisory level

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calculations, data processing requirements and reports
- engineering principles and operating principles of pipeline systems
- understanding of safe design principles
- appropriate environmental requirements
- correctly read, analyse, interpret and record data
- third-party service location methods
- construction principles and safety
- applicable gas chemistry, properties and characteristics.

G 6.1.2 Understand and utilise information for Gas Industry supervisors

Evidence shall show an understanding of the requirements to undertake supervision/management in a Gas Industry environment, indicated by the following:

- principles of gas flow and gas metering
- organisational standard operating procedures
- site specific safety legislation and safety requirements
  - overview of Occupational Health and Safety including systematic approaches to OHS
  - health and safety stakeholders (union, employers, workers, contractors and managers) hazards
  - risk assessment and control relating to areas such as:
    - electrical safety
    - vibration
    - outdoor work
    - stress
    - equipment, tools and plant
    - noise
    - chemicals and substances
    - manual handling
    - confined spaces
  - Stakeholder Relations
    - managing contractors, industry awards, and employee entitlements
    - understanding government and business relations
    - employee associations
    - industry associations
    - awards and agreements
    - collective bargaining and individual agreements
    - conciliation, arbitration, mediation and negotiation

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- coordinate the work of others
- adhere to OHS legislation and regulations
  - understanding government and the development of statute and common law
  - principles of Occupational Health and Safety and risk management
  - Occupational Health and Safety legislation and regulations
- observe environmental and legislative requirements
  - understanding government and the development of statute and common law
  - principles of Occupational Health and Safety
  - environmental and other legislative requirements
- apply applicable permit to work system including types of permit limitations
  - understanding the permit to work system
  - identifying the limitations in a permit to work system
- develop and review standard operating procedures
- review and report on completed work
- employ correct waste management procedures
  - appropriate waste management procedures
  - organisational requirements for waste management
  - consequences of not managing waste effectively
- knowledge of native title issues and legislation
- analyse relevant workplace data eg incident and environmental monitoring to evaluate the effectiveness of the OHS management system.

G 6.1.4 Communicate effectively

Evidence shall show an understanding and utilisation of technology for communication in a Gas Industry environment, indicated by the following:

- effective communication for Gas Industry managers and supervisors
  - motives for communication
  - communication networks: who communicates with whom
  - verbal and non-verbal communication
  - choosing the medium and the flow of a message
  - blocks to effective communication
- analyse and interpret recorded data, review and report
- use information technology for communication

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- understanding how to use information technology
- effective use of email, internet and other communication mediums.

G 6.1.6 Plan and carry out project management

Evidence shall show an understanding and application of the requirements to undertake project management in a Gas Industry environment, indicated by the following:

- project management and costing
  - project planning processes
  - determining project costing
  - planning for events and milestones
  - determining inputs
  - producing outputs to a plan
- planning theory and its processes
  - the importance of planning
  - the planning process
  - organisational goals and objectives
  - strategic planning
  - operational planning
  - forecasting
- prioritise techniques
  - organising/prioritise work flows
  - time management
  - stress management
- managing persons and resources including consultants
  - understanding people
  - understanding behaviour
  - perceiving the causes of behaviour
  - defining leadership
- manage meetings
  - understanding organisational communication
  - formal and informal organisational communication
  - managing meetings and recording minutes
  - drafting minutes
- prepare reports
  - planning the writing process
  - developing the scope and outline of a document/report
  - drafting documents/reports utilising a plan and outline

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- finalising documents/reports
- facilitate contracts and employment
  - parliament, government and the law
  - statute law
  - common law
  - contracts and contract law
  - employment law
- understanding of sound business principles and performance measures
  - understanding organisational behaviour
  - business fundamentals
  - establishing the principles of performance management
  - establishing performance measures
- understanding of competition policy, budgets and product pricing and tariffs
  - understanding of government business relations in the Gas Industry
  - how tariffs are determined
  - working within legislative guidelines in tariffs and pricing.

G 6.1.7 Understand chemical and physical behaviours of gas

Evidence shall show an understanding of the chemical and physical behaviour of gases, and their effects in a gas system indicated by the following:

- chemical and physical behaviours of natural and liquefied petroleum gas
  - understanding of basic chemistry and physics of gases
  - the chemical makeup and properties of natural gas and LPG
  - dangers of working with natural gas and LPG and how to manage natural gas and LPG
- transportation of LPG and natural gas
  - understanding of issues associated with transporting of natural gas and LPG
- LPG supply logistics
  - correct filling procedures for LPG
  - identifying abnormal cylinder conditions
  - correct storage of LPG.

G 6.1.8 Manage environmental and culturally sensitive issues

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Evidence shall show an understanding and implementation of the effective management of environmental and culturally sensitive issues in a Gas Industry environment, indicated by the following:

- understanding applicable environmental legislative compliance and regulation
  - understanding government and laws
  - penalties
  - acting in compliance with laws
- understanding of cultural and community standards and their sensitivities
  - communities and their interaction with government and business in Australia
  - cultural issues in Australia
  - using ethical behaviour in approaching cultural issues
  - anti discrimination legislation in Australia
  - native title issues in Australia
- understanding the impacts of gas installations and infrastructure on the environment and its impacts to native title
  - government and business environmental obligations
  - Australian environmental legislation and its affect on industry
  - the impact of construction of assets to the Australian environment
  - native title considerations for Gas Industry asset owners
- managing sensitive negotiations and communicating with a wide variety of stakeholders
  - understanding stakeholder politics in Australia
  - negotiation and bargaining
  - conciliation and arbitration
  - understanding of sensitive issues and the implications for negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in

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EVIDENCE GUIDE

conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence **9.2)**

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required to demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least first 3, Or, last 3	Gas systems: Natural gas systems

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		Transmission and distribution pipelines Control systems Custody transfer stations Odorising plant Corrosion control Interconnecting system LPG storage greater than 50kL Underground storage Tankers and ships
B	At least 3	Environmental hazards: Hazards associated with LPG Hazards associated with natural gas Geological features Soil types Neighbouring plants Residential areas Separation distances and emission and contamination hazards
C	Any 1	System logistics: Land and sea transport routes and equipment Transmission and distribution pipelines Land ownership and easements
D	Any 2	Resources: Appropriate/relevant persons Materials, tools and equipment Personal protective

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		equipment Company standard operating procedures Equipment manuals Training resources
E	At least 2	Relevant persons: Company planners and marketers Department heads Business unit managers Company engineers and consultant engineers Technical specialists Statutory authorities and environmental specialists
F	At least 2	Legislative requirements: Occupational Health and Safety legislation Relevant Government Acts, regulations and codes of practice Local government traffic management
G	At least 2	Relevant authorities: Local and shire councils Local government authorities Emergency transport authorities Rail departments Landowners/Traditional land owners
H	At least 8	Relevant documentation: Contracts Specifications/drawings/plans

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		Manufacturer's specifications Work permits Company standard operation and safety procedures Company management plans and policies Hot work permits Company forms and files OHS legislation and codes of practice Other Government legislation Pipeline licenses Quality assurance Commercial agreements
I	All	Interpreting Gas Industry drawings Understanding of emergency management procedures Understanding of concepts and skills for Gas Industry supervisors Communication for Gas Industry supervisors Understanding of project management techniques Understanding of chemical and physical behaviours of gas Ability to manage environmental and cultural sensitive issues
J	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide

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		appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in preparing safe design specifications of a gas system.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and

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demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG117B	Plan and implement the data acquisition and metering requirements of a gas system
UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications
UEGNSG119B	Manage workplace risk
UEGNSG120B	Manage gas system environmental compliance
UEGNSG115B	Manage gas system projects
UEGNSG122B	Manage a customer service gas business unit
UEGNSG123B	Manage financial resources
UEGNSG116B	Manage physical resources

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to preparing design specifications of a gas system.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an

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RANGE STATEMENT

integral part of the Range Statement of this unit:

Gas systems

Environmental hazards

System logistics

Resources

Relevant documentation (6)

Legislative compliance

Safe design principles

Relevant authorities

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG122B Manage a customer service gas business unit

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the requirements to manage a customer service gas business unit, to meet the needs of its customer base. This competency standard refers to Resources; Appropriate persons; Relevant persons; Legislative requirements; Effective communication; Relevant documentation; Records and reports; Business plans and marketing plans.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1. Assess potential in the market place	1.1	Organisational, strategic and business plans and other relevant documentation is analysed and market analysis and environmental scans are performed according to established procedures
	1.2	Products and services to form part of the business are selected consistent with the needs of the marketplace and the objectives of the organisation
	1.3	Work roles and tasks are allocated according to requirements and individual's competencies
	1.4	Work is prioritised and sequenced for the most effective outcome and completed within an acceptable timeframe to a quality standard and in accordance with established procedures
	1.5	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.6	Risk control measures are identified, prioritised and evaluated against the work schedule
2 Develop business plans for the business unit	2.1	Business unit objectives and key performance indicators are developed in consultation with relevant personnel and principle stakeholders
	2.2	A marketing strategy is developed and budgets and business unit objectives are promoted through effective communication to appropriate personnel

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ELEMENT	PERFORMANCE CRITERIA	
	2.3	Decisions are made on the basis of safety and effective outcomes according to requirements and established procedures
	2.4	Mathematical models are used to analyse the effectiveness of the finished product as per requirements and established procedures
	2.5	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.6	Testing is undertaken according to requirements and established procedures
	2.7	Work teams are arranged to ensure planned goals are met according to established procedures
	2.8	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills,
	2.9	Quality of work is monitored against personal performance agreement and established organisational and professional standards
	2.10	Strategic plans are developed incorporating organisation initiatives as per established procedures
3 Manage the business unit and review and assess performance of the business unit	3.1	Distribution systems are developed and sales and product pricing schedules are developed and confirmed with appropriate personnel
	3.2	Key performance indicators are reviewed with appropriate personnel and barriers to performance are identified, analysed and recommendations for improvements made
	3.3	Product quality and sales trends are monitored and recommendations made for replacement of product or review of marketing strategies

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ELEMENT	PERFORMANCE CRITERIA
	3.4 Customer energy needs are projected and new products identified and forward estimates made according to established procedures
	3.5 Reports and completion documents are submitted to relevant persons for approval and where applicable, statutory or regulatory approval
	3.6 Approved copies of documents are issued and records are updated in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for managing a customer service gas business unit.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G122B Gas business unit customer service

G 6.1.1 Understand and utilise concepts and skills for Gas Industry supervisors

Evidence shall show an understanding and interpretation of the concepts and skills required of Gas Industry supervisors to undertake activities, indicated by the following:

- applicable mathematical techniques and principles to enable production of relevant supervisory level calculations, data processing requirements and reports
- engineering principles and operating principles of pipeline systems
- understanding of safe design principles
- appropriate environmental requirements

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- correctly read, analyse, interpret and record data
- third-party service location methods
- construction principles and safety
- applicable gas chemistry, properties and characteristics.

G 6.1.2 Understand and utilise information for Gas Industry supervisors

Evidence shall show an understanding of the requirements to undertake supervision/management in a Gas Industry environment, indicated by the following:

- principles of gas flow and gas metering
- organisational standard operating procedures
- site specific safety legislation and safety requirements
  - overview of Occupational Health and Safety including systematic approaches to OHS
  - health and safety stakeholders (union, employers, workers, contractors and managers) hazards
  - risk assessment and control relating to areas such as:
    - electrical safety
    - vibration
    - outdoor work
    - stress
    - equipment, tools and plant
    - noise
    - chemicals and substances
    - manual handling
    - confined spaces
  - Stakeholder Relations
    - managing contractors, industry awards, and employee entitlements
    - understanding government and business relations
    - employee associations
    - industry associations
    - awards and agreements
    - collective bargaining and individual agreements
    - conciliation, arbitration, mediation and negotiation
    - coordinate the work of others
- adhere to OHS legislation and regulations
  - understanding government and the development of statute and common law
  - principles of Occupational Health and Safety and risk

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management
    - Occupational Health and Safety legislation and regulations
- observe environmental and legislative requirements
    - understanding government and the development of statute and common law
    - principles of Occupational Health and Safety
    - environmental and other legislative requirements
- apply applicable permit to work system including types of permit limitations
    - understanding the permit to work system
    - identifying the limitations in a permit to work system
- develop and review standard operating procedures
- review and report on completed work
- employ correct waste management procedures
    - appropriate waste management procedures
    - organisational requirements for waste management
    - consequences of not managing waste effectively
- knowledge of native title issues and legislation
- analyse relevant workplace data eg incident and environmental monitoring to evaluate the effectiveness of the OHS management system.

G 6.1.4 Communicate effectively

Evidence shall show an understanding and utilisation of technology for communication in a Gas Industry environment, indicated by the following:

- effective communication for Gas Industry managers and supervisors
    - motives for communication
    - communication networks: who communicates with whom
    - verbal and non-verbal communication
    - choosing the medium and the flow of a message
    - blocks to effective communication
- analyse and interpret recorded data, review and report
- use information technology for communication
    - understanding how to use information technology
    - effective use of email, internet and other communication mediums.

G 6.1.6 Plan and carry out project management

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Evidence shall show an understanding and application of the requirements to undertake project management in a Gas Industry environment, indicated by the following:

- project management and costing
  - project planning processes
  - determining project costing
  - planning for events and milestones
  - determining inputs
  - producing outputs to a plan
- planning theory and its processes
  - the importance of planning
  - the planning process
  - organisational goals and objectives
  - strategic planning
  - operational planning
  - forecasting
- prioritise techniques
  - organising/prioritise work flows
  - time management
  - stress management
- managing persons and resources including consultants
  - understanding people
  - understanding behaviour
  - perceiving the causes of behaviour
  - defining leadership
- manage meetings
  - understanding organisational communication
  - formal and informal organisational communication
  - managing meetings and recording minutes
  - drafting minutes
- prepare reports
  - planning the writing process
  - developing the scope and outline of a document/report
  - drafting documents/reports utilising a plan and outline
  - finalising documents/reports
- facilitate contracts and employment
  - parliament, government and the law
  - statute law

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- common law
- contracts and contract law
- employment law

- understanding of sound business principles and performance measures
  - understanding organisational behaviour
  - business fundamentals
  - establishing the principles of performance management
  - establishing performance measures
- understanding of competition policy, budgets and product pricing and tariffs
  - understanding of government business relations in the Gas Industry
  - how tariffs are determined
  - working within legislative guidelines in tariffs and pricing.

G 6.1.8 Manage environmental and culturally sensitive issues

Evidence shall show an understanding and implementation of the effective management of environmental and culturally sensitive issues in a Gas Industry environment, indicated by the following:

- understanding applicable environmental legislative compliance and regulation
  - understanding government and laws
  - penalties
  - acting in compliance with laws
- understanding of cultural and community standards and their sensitivities
  - communities and their interaction with government and business in Australia
  - cultural issues in Australia
  - using ethical behaviour in approaching cultural issues
  - anti discrimination legislation in Australia
  - native title issues in Australia
- understanding the impacts of gas installations and infrastructure on the environment and its impacts to native title
  - government and business environmental obligations
  - Australian environmental legislation and its affect on industry

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- the impact of construction of assets to the Australian environment
- native title considerations for Gas Industry asset owners

- managing sensitive negotiations and communicating with a wide variety of stakeholders
  - understanding stakeholder politics in Australia
  - negotiation and bargaining
  - conciliation and arbitration
  - understanding of sensitive issues and the implications for negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

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The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment. Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised.

These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions. Evidence shall comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated

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environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 3	Resources: Appropriate/relevant persons Materials, tools and equipment Personal protective equipment Company standard operating procedures Equipment manuals Training resources
B	At least 2	Appropriate persons: Organisation employees Contractors Maintenance persons Appropriately experienced and qualified persons Site security persons
C	At least 5	Relevant persons: Other supervisors Managers Inter-company departments Other utilities

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		Consultants Council representatives Government bodies/agencies Producers Transporters Shippers Customers Landowners/Traditional landowners
D	All	Legislative requirements: Occupational Health and Safety legislation Relevant Government Acts, regulations and codes of practice Australian Standards and Codes of Practice Environmental legislative requirements
E	All	Effective communication: Verbal directions Relevant documentation Projects records/reports Presentations and meetings
F	At least 4	Relevant documentation: Company business plans and marketing plans Business projections Budgets and forecasts Profit and loss statements Company standard operation and safety procedures/management plans and policies Company forms and files

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		OHS, legislation and codes of practice Relevant Government Acts, regulations and codes of practice Environmental legislative requirements Quality assurance Commercial agreements
G	At least 2	Records and reports: Business plans and marketing plans KPI's reports Financial reports and forecasts Monthly statements/invoices Persons reports Lost time Injury reports Debtor/creditor reports
H	All	Understanding of concepts and skills for Gas Industry supervisors Communication for Gas Industry supervisors Understanding of project management techniques Managing environmental and cultural sensitive issues
I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

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Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in, Context of and specific resources for assessment, evidence should show demonstrated competency in Manage a customer service gas business unit

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and **9.5)**

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relationship with other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG117B	Plan and implement the data acquisition and metering requirements of a gas system
UEGNSG118B	Select and commission equipment to meet pressure and temperature control specifications
UEGNSG119B	Manage workplace risk
UEGNSG120B	Manage gas system environmental compliance
UEGNSG121B	Prepare and design specifications for a gas system
UEGNSG115B	Manage gas system projects
UEGNSG123B	Manage financial resources
UEGNSG116B	Manage physical resources

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to managing a customer service gas business unit.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Resources

Appropriate persons (6)

Relevant persons

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RANGE STATEMENT

Legislative requirements

Effective communication (6)

Relevant documentation (6)

Records and reports (6)

Business plans and marketing plans

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG123B Manage financial resources in a gas industry facility

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Unit covers the requirements to manage financial resources to achieve organisational and operational objectives. This competency standard refers to Budget formats; Operating budget; Policy; Financial reports; Management information systems.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection,

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License to practice **3)**

telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 5 Writing 5 Numeracy 5

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Develop a budget	1.1	Budget format is determined and consistent with organisational guidelines and procedures, cost elements are identified and quantified and cost benefit analyses are prepared for major cost items in accordance with the organisations policy and procedures
	1.2	Sub-budgets prepared by other staff are coordinated in order that desired objectives are achieved
	1.3	Organisational established procedures on policies and specifications are obtained or established with the appropriate persons
	1.4	Testing parameters are established from organisational established procedures on policies and specifications
	1.5	Testing procedures are discussed with appropriate persons in order to ascertain the project brief
	1.6	Cost benefit analysis are prepared for major cost items in accordance with the organisation's policy and procedures
	1.7	Work roles and tasks are allocated according to requirements and individual's competencies
	1.8	Work is prioritised and sequenced for the most effective outcome, completed within an acceptable timeframe to a quality standard and in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Sub-budgets prepared by other staff are coordinated in order that desired objectives are achieved
	1.10	Liaison and communication issues with authorised persons, authorities and resolved and activities coordinated to carry out work
	1.11	Risk control measures are identified, prioritised and evaluated against the work schedule
2 Allocate, authorise and monitor expenditure	2.1	Financial resources are allocated as agreed in the operational plan and is monitored to ensure that expenditure management meets the financial accountability requirements of the organisation
	2.2	Supply and expenditure processes are performed in accordance with corporate governance and organisational protocols and procedures
	2.3	Mathematical models are used to analyse the financial reports as per requirements and established procedures
	2.4	Sub-budgets and financial allocation is continually monitored against organisational objectives and priorities ensuring optimum service delivery
	2.5	Essential Knowledge and Associated Skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
	2.6	Re-allocation of resources is undertaken taking into account of enterprises needs and priorities
	2.7	Work teams are arranged to ensure planned goals are met according to established procedures
	2.8	Solutions to non-routine problems are identified and actioned, according to requirements, using acquired Essential Knowledge and Associated Skills,

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ELEMENT		PERFORMANCE CRITERIA	
		2.9	Quality of work is monitored against personal performance agreement and established organisational and professional standards
		2.10	Strategic plans are developed incorporating organisation initiatives as per established procedures
3	Utilise relevant financial management information systems and review budget management	3.1	Management information systems are used for planning, implementing and monitoring the use of financial resources in accordance with company policies and established procedures
		3.2	Management information system reports are produced, verified and interpreted
		3.3	Management of budget is reviewed in accordance with company policies and established procedures
		3.4	Management of budget is reported in accordance with company policies and established procedures
		3.5	Appropriate persons are notified of completion and reports and completion documents are finalised.
		3.6	Reports and completion documents are submitted to relevant persons for approval and where applicable, statutory or regulatory approval
		3.7	Approved copies of documents are issued and records are updated in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

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REQUIRED SKILLS AND KNOWLEDGE

Evidence shall show that knowledge has been acquired of working practices for managing financial resources in a Gas Industry facility.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G123B Gas industry financial management

G 6.1.9 Understand and implement financial management

Evidence shall show an understanding of the requirements to perform applicable Gas Industry financial management activities, indicated by the following:

- Understanding financial management with the ability to reporton project and company budgets utilising financial statements as required by organisational policies and procedures. These include but are not limited to:understanding financial management fundamentals and the how the following are tracked through in an accounting system:
  - assets and liabilities
  - revenue
  - expenses
  - equity
  - source documents
  - journals
  - ledgers
  - trial balance
- reading, interpreting and reporting on project/company progress using accounting reports such as budget and cash flow reports
- understanding of resource management systems to monitor inventory, stock, consumables and physical resources and other assets
  - managing resources
  - maintaining assets/assets management
  - stock/consumables control
  - maintaining assets register
- understanding of computer accounting/bookkeeping software effectively

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- accounting software systems
- invoicing
- reconciling accounts
- purchasing
- stock control
- general ledger
- payroll
- reporting.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence

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need to be ‘rich’ in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its ‘richness’. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the ‘Assessment Guidelines — UEG11’. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills

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- Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 1	Budget formats: Zero based budgeting Program budgeting Line item budgeting
B	All	Operating budget: Staffing costs Capital expenditure/income Recurrent expenditure/income Forward estimates Cash flow
C	All	Policy: Supply Procurement Expenditure Audit Reporting and recording policies
D	At least 1	Financial reports: Annual reports Program financial statements Accrual reports Monthly/quarterly financial reports

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E	At least 6	Management information systems: Computers Communication channels Records management data Procedures Protocol Legislation Guidelines and awards Organisation, legal and policy materials Client information Market trends Registry and file records Financial records Basic statistical information
F	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency of managing financial resources in a Gas Industry facility.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG117B Plan and implement the data acquisition and metering requirements of a gas system

UEGNSG118B Select and commission equipment to meet pressure and temperature control specifications

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UEGNSG119B Manage workplace risk

UEGNSG120B Manage gas system environmental compliance

UEGNSG121B Prepare and design specifications for a gas system

UEGNSG115B Manage gas system projects

UEGNSG122B Manage a customer service gas business unit

UEGNSG116B Manage physical resources

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to managing financial resources in a Gas Industry facility.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Budget formats

Operating budget

Policy

Financial reports

Management information systems

Unit Sector(s)

Not applicable.

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Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG131A Compile a gas industry technical report

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

The competency standard unit covers the compilation of a gas industry technical report. The competency standard unit encompasses determining the safety requirements are met and all regulatory responsibilities are adhered to. The person deemed competent in this competency standard unit must demonstrate an ability to identify information and collect and analyse gas industry data to compile a technical report.

Application of the Unit

Application of the Unit **2)**

This unit is intended for competency development entry-level employment-based programs incorporated in approved contracts of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at

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License to practice **3)**

which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve competency in this unit if they have reading, writing and Numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Prepare to develop a technical report	1.1	OHS procedures for a given work area are obtained and understood.
		1.2	Established techniques for report writing are reviewed and adopted in accordance with organisational requirements
		1.3	The scope of the report is evaluated and report parameters established using a formal evaluation/survey process
		1.4	Criteria from other related works impacting on the report are determined
		1.5	Source and availability of information is identified
2	Develop a technical report	2.1	Report is developed to include scenarios/requirements established in consultation with appropriate persons and to regulatory and company requirements
		2.2	Report is developed in collaboration with all relevant personnel
		2.3	Competent persons are identified to assist in the compilation of the report
		2.4	Report is reviewed against all inputs and adjusted to rectify any anomalies
		2.5	Report is compiled in accordance with organisation’s policies and procedures
3	Complete the final	3.1	Report is presented and discussed with senior

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ELEMENT	PERFORMANCE CRITERIA	
report		personnel for feedback and evaluation
	3.2	Alterations to the report resulting from presentation/discussion are negotiated with appropriate persons and to established procedures
	3.3	Final report is presented and approval for completion obtained from relevant personnel according to company procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8)This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and the compilation of a gas technical industry report.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G131A Gas industry technical report

G 2.1.1 Work in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G2.2.2 Enterprise work activities records

Evidence shall show an ability to identify and recognise and understand the variety of symbols and abbreviations used in Gas Industry workplaces, specifically:

- Commonly used symbols and abbreviations
- Purpose of a scale/legend

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- Read and interpret scales and legends.

G 2.2.20 Computer use basics

Evidence shall show an understanding of the knowledge required to install cast iron pipelines, fittings and accessories in a Gas Industry workplace, indicated by the following:

- Characteristics of cast iron pipeline, pipe sizes
- Situations in which a cast iron pipeline is used
- Range of fittings and accessories for cast iron
- Cast iron lead & hemp joints and how they are constructed
- Appropriate selection of transition fittings and adaptors to other materials
- Advantages/disadvantages in using cast iron pipe
- Read and interpret MSDS applying appropriate measures

G 2.2.21 Engineering analysis, decision making and reporting

Evidence shall show an understanding of the requirements to work with cast iron pipelines and fittings on a Gas Industry pipeline, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Dangers of working with live gas
- Equipment, tools and materials required for working with cast iron pipelines
- Purpose and function or equipment, tools and materials
- Requirements of Australian Standards and gas industry standards for working with cast iron pipe and fittings
- Safety requirements and procedures for using equipment, tools and materials
- Procedures for joining cast iron pipeline to other pipeline

G 2.2.25 Research concepts

Evidence shall show an understanding of the processes required for the cutting out and replacing of steel pipeline on a Gas Industry workplace (distribution) pipeline, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Dangers of working with live gas
- Purpose and function of equipment, tools and materials, including but not limited to, cutting and stopping equipment
- Demonstrate the correct use of stop off equipment and

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cutting equipment

- Requirements of Australian Standards and gas industry standards for working with steel pipe and fittings
- Safety requirements and procedures for using equipment, tools and materials
- Gas leak testing
- Pressure testing procedures
- Apply procedures for ensuring continuity of supply including checking of network maps, gauging, fitting of bypasses and purging.
- Replace marker tape
- Coating types and repair
- Use of cross-bonding leads and neon testers

G 2.2.33 Working in a team

Evidence shall show an understanding and an ability to locate services, indicated by the following:

- Identification of relevant authorities or enterprises to contact regarding the location of other utilities services (gas, water, electricity, telecommunication, sewerage and stormwater)
- Read and interpret plans and drawings to identify the location of utilities and services
- Identification of utilities and services conduits and cables
- Correct use of electronic and manual service locators
- Apply hand excavation as required for the purposes of locating utilities and services

G 2.2.35 Data collection techniques

Evidence shall show an understanding of the knowledge to prepare the site for excavation on a Gas Industry workplace, indicated by the following:

- OHS and traffic control procedures for setting up a healthy and safe site
- Environmental control procedures for setting up a site
- Orally communicating with appropriate persons, team mates and customers regarding relevant aspects of site preparation.

G 2.2.36 Data analysis and presentation

- Evidence shall show an understanding of how to set out trenches on a Gas Industry workplace, indicated by the following:
- reading and interpreting job specifications and standard operating procedures

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- grades and depth required for excavation of trenches for gas pipelines
- techniques for marking out trench location.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit. It must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be ‘rich’ in nature to minimise error in judgment.

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Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit must be considered holistically. Each Element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEG11'. Evidence shall also comprise:

- A representative body of performance criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
    - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
    - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
    - Demonstrate an appropriate level of employability skills

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- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Working knowledge of company policies and procedures especially related to report writing Understanding company briefs Analysing information to prepare a technical report Advanced literacy and report writing capability Research capability for technical report writing Effective use of a computer and software for technical report writing Negotiation skills for altering material with appropriate personnel
B	All	Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for **9.3)**

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assessment

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment it must ensure that the conditions for assessment are authentic and as far as possible reproduce and replicate the workplace and is consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to the selection of electronic components.

Method of assessment **9.4)**

This unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

For optimisation of training and assessment effort, competency development in this unit may be arranged concurrently with unit:

Nil

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Range Statement

RANGE STATEMENT

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Use computers and appropriate software

Dealing with general enquiries from the public

Relevant Acts, Standards and Codes for gas inspection

SOPs, Established Policies and procedures

Established procedures and requirements

Appropriate Persons (7)

Non-conformance notices and procedures for issuance

Incident reporting

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Cross Discipline

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UEGNSG132A Carry out basic work activities in a gas industry work environment

Modification History

This unit is a revised version of the UEG11 unit UEGNSG102B Carry out work activities in a utilities industry work environment.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers basic work activities carried out on a gas industry work site in accordance with relevant legislation, standards, codes and established procedures.

It encompasses following procedures to correctly and safely carry out the work using appropriate materials, tools, and measuring devices.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe workplace where Gas Industry operations occur subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace

This unit is intended as an AQF 2 entry level competency for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the

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following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to carry out basic work activities	1.1	WHS/OHS, environmental and sustainable energy measures, policies and procedures relevant for the workplace are identified, accessed and understood.
	1.2	Relevant requirements and established procedures for the workplace are provided and discussed with relevant persons to establish and confirm the work schedule.
	1.3	Hazards are identified and reported to relevant persons to assess the risks and implement control

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ELEMENT	PERFORMANCE CRITERIA	
		measures according to established procedures.
	1.4	Scope of work is received and confirmed with relevant persons according to requirements and established procedures
	1. 5	Appropriate persons are consulted to ensure the work is carried out effectively with others.
	1.6	Tools, equipment and personal protective equipment needed to carry out the work are identified, obtained and checked for correct operation and safety.
	1.7	Materials, plans, diagrams, drawing and resources required for the work are received in accordance with established routines and procedures.
	1.8	Workplace preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out basic work activities	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Machines/plants/equipment are confirmed as being safe where necessary in strict accordance WHS/OHS requirements and procedures.
	2.3	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.4	Work is carried out efficiently, to the required quality standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.5	Any WHS/OHS risks and incidents are reported to the immediate authorised persons at the workplace for directions according to established procedures
	2.6	Procedures for referring non-routine events to immediate supervisor for directions are

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ELEMENT	PERFORMANCE CRITERIA	
		followed.
	2.7	Routine quality and safety checks are carried out in accordance with work instructions.
3 Check the results of the completed work	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Workplace is tidied, re-instated and made safe in accordance with established procedures.
	3.3	Tools, equipment and measuring devices are cleaned and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Relevant work documentation is completed accurately and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G132 Work in a gas industry environment A

Evidence shall show an understanding of the basic work activities carried out at a gas industry workplace in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Basic gas industry calculations relevant to the work activities which may include volumes, area, pressures and measurements.

T2. Basic graphs and tables interpretation

T3. Overview of basic problem solving processes

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T4. Gas industry equipment/tools/measurement devices

- identification, selection and use of appropriate equipment/tools measurement devices for the relevant work activities
- dangers and precautions required when using equipment/tools/measurement devices in a gas industry environment

T5. Industry Personal Protection Equipment (PPE)

- requirements
- types and applications
- checking,
- maintaining
- storing
- correct use

T6. Overview of job specifications and standard operating procedures (SOP)

- types and examples
- following instructions
- working within SOPS

Evidence Guide

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by

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various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range

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- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Carry out basic work activities in a gas industry work environment as described in 9.) Range Statement and including:

Range of Tools/Equipment/Procedures/Workplace		
Group No	**The Minimum number of items on which skill is to be demonstrated**	**Item List**
A – WHS/OHS Procedures	All	Participate in: • Hazard Identification • Risk Assessment • Implement Control Measures
B – Tools/ Equipment	At Least 5	• Measurement Devices • Digging Tools • Probes • Lighting Equipment • Service Locators • Pneumatic Tools • Hand Tools • Power Tools • Metallic Welding equipment • Polyethylene welding equipment • Mobile plant • Fixed plant • Plant controls • Pipeline controls

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		• Tanks • Cylinder filling scales • Dispenser guns • Load points • Compressors • Pumps, valves • Gas detectors • PPE • Barricades • Signage • Communication devices • Human machine interfaces
C – Workplace Procedures	At least 6	• Utilities industries calculations • Prestart checks, • Work in accordance with Permit to work, • Conduct basic risk assessment • Utilise and participate in JSA, • Work in accordance with work authorisation, • Complete task documentation. • Obtain and follow organisational procedures, • Follow manufacturer's instructions.
D – Unplanned events	On at least one occasion	Respond to an unplanned event by drawing on required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for **8.3)**

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assessment

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Skills and Knowledge described in this unit.

Concurrent assessment and **8.5)**

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relationship with other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

And/or with the following units of competency if delivered in a Certificate II qualification:

UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134B	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to carrying out basic work in a gas industry environment, which includes:

- Interpreting drawings, diagrams, schedules, procedures and manuals.
- Assembly and disassembly of mechanical components
- Monitoring pressures and flows
- Safe guarding an asset
- Sourcing and checking materials, equipment and tools on the job
- Selection and use of materials, tools, measurement devices and personal protection equipment.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- OHS policies and procedures
- Tools and equipment

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- Appropriate persons
- Established procedures and requirements
- Legislation
- Safety Equipment
- Personal Protective Equipment
- Emergency and Hazardous Work Situations

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Utilities

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UEGNSG133A Comply with environmental policies and procedures in the utilities industry

Modification History

This unit is a revised version of the UEG11 unit UEGNSG104B Comply with environmental policies and procedures

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the compliance of environmental policies and procedures whilst undertaking tasks in a utilities industry workplace.

It encompasses the requirements for compliance with relevant sections of Commonwealth and State Environmental Protection, and Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) Acts and Regulations, and their application to relevant work site procedures.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where utility industry operations occur which includes the gas industry, electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Environmental Legislative requirements, Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and Duty of Care requirements being met for the environment and the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the utilities industry. It is suitable for pre-employment and employment-based programs under an

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approved contract of training

Licensing/Regulatory Information

Licence to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Environmental Legislation, Chemical Management, Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Prerequisite Unit(s) **4)**

UEGNSG005A	Prepare to work in the Australian gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to comply with environmental	1.1	Work instructions and WHS/OHS measures for the site are identified, obtained and understood.

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ELEMENT	PERFORMANCE CRITERIA	
policies and procedures		
	1.2	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule.
	1.3	Environmental aspects are identified and associated potential or actual environmental impacts are evaluated. Significant impacts are prioritised. Note: Environmental aspects include: Air, Land, Water, Waste, Flora (Vegetation), Fauna, Heritage, Resource Use, Community.
	1.4	Environmental sustainability principles are considered before works commence including purchasing/using environmentally beneficial equipment and materials, waste disposal considerations, precautionary approach.
	1.5	Environmental legislation, environmental policies and procedures and WHS/OHS requirements to be followed for the work to be performed are received and confirmed
	1.6	Suggestions to assist with complying with environmental policies and procedures are made to others involved in the work.
	1.7	Environmental and WHS hazards are identified, risks assessed and control measures are prioritised, implemented and monitored per environmental policies and procedures.
	1.8	Resources including environmental compliance equipment required for the job are identified, obtained and checked for correct operation and safety.
	1.9	Schedule of work including practices for working safely is confirmed in accordance with established procedures
	1.10	Client issues are referred to appropriate persons in accordance with industry and community

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ELEMENT	PERFORMANCE CRITERIA	
		standards
2 Comply with environmental policies and procedures	2.1	WHS/OHS risk control measures, policies and procedures for carrying out the work are followed
	2.2	Environmental requirements for the work are implemented, reviewed and control measures recommended for inclusion in the work process
	2.3	Appropriate materials, tools and equipment are selected and used correctly and safely.
	2.4	Any environmental incidents and potential problems are immediately reported to appropriate persons and dealt with in accordance with established procedures and legislative requirements.
	2.5	Operational knowledge for compliance with environmental policies and procedures is confirmed to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements and established procedures
	2.6	Compliance with environmental policies and procedures is carried out in an agreed timeframe, to a quality standard and with a minimum of waste in accordance with given instructions and established procedures
	2.7	Procedures for referring non-routine (accidents and incidents) events to the immediate authorised persons for directions are followed.
	2.9	Routine quality checks of the work are carried out in accordance with work instructions
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work site is tidied and made safe.
	3.3	Tools, equipment, vehicles and plant and any

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ELEMENT	PERFORMANCE CRITERIA	
		surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of the completion of the work in accordance with established procedures
	3.5	All waste is disposed of in accordance with procedures and reports completed as required
	3.6	Relevant environmental completion records, report forms/data sheets are completed accurately in accordance with established procedures

Required Skills and Knowledge

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for complying with environmental policies and procedures in the utilities industry.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge required is provided below. It forms an integral part of this unit.

KS01-G133B Environmental compliance in a utilities industry work environment

Evidence shall show an understanding and ability to perform work in the utilities industry in compliance with environmental policies and procedures to an extent indicated by the following aspects:

T1. Relevant Commonwealth/State/Territory environmental legislation, regulations and codes of practice.

T2. Role of regulatory bodies in monitoring environmental activities, risk and incident compliance

T3. Employee's and employer's responsibilities to comply with relevant environmental legislation, regulations, codes and enterprise procedures for:

- flora control
- erosion control

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- fauna control
- the protection of indigenous and cultural heritage sites

T4. Environment protection procedures, records, inspections/audit and incident reporting

T5. Environmental hazards

T6. Environmental risk assessment

T7. Environmental control measures implementation

T8. Response to workplace environmental incidents

T9. Application to relevant work site procedures

- the use of plant/machinery/equipment
- cleaning materials and aids
- spill response equipment;
- sediment erosion control equipment;
- emission control and sampling equipment

Note: Environmental damage can be caused by chemicals, oil, water contamination, carcinogenic agents, gases, dusts, waste contamination and noise

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

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Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

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- Demonstrate consistent performance across a representative range of contexts from the prescribed items below.
  - Comply with environmental policies and procedures in the utilities industry as described in 9) Range and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Identifying, locating and interpreting relevant information procedures	At least 3	• Interpret alignment sheets, maps, technical drawings and symbols • Identify environmental aspects and potential or actual impacts • Identify potential environmental hazards • Carry out risk assessment, JHA or JSA that includes environmental risks • Ensure practical application of Environmental legislation, Environmental Management Plans and Environmental Procedures and relevant codes of practise (such as EPA)

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B. Environmental control measure procedures	At least 5	• Installation of sediment & erosion control measures as per Legislative or Best Practice requirements. • Weed spread mitigation • Chemical management controls (MSDS, storage, labelling, bunding) • Noise control techniques & work hour limitations • Air emission control & reduction practices • Waste Management principles (recycling). • Hazardous waste management • Water management requirements (works near waterways) • Vegetation Management requirements • Fauna protection • Heritage Management techniques. • Community consultation requirements • Rehabilitation requirements
C. Procedures to control and minimise the impact of an environmental incident	At least 3	• Control environment incident· • Incident reporting • Apply incident reporting and notification procedures
D. Environmental incident review procedure	At least 2	• Review environmental incident • Make recommendations to prevent reoccurrence • Implement recommendations

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s		
E. Safety procedures	All	• Work utilising the relevant WHS legislation, policies and procedures effectively • Maintain a safe and clean workplace environment • Communicate effectively with others • Apply basic planning techniques
F. Unplanned event procedures	At least one occasion	• Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry

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practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Skills and Knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

9) **This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.**

This Unit shall be demonstrated in relation to compliance with environmental policies and procedures in at least one of the following utilities industry work sites including:

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- Above ground level sites
- Below ground level sites
- Easements
- Public sites, requiring pedestrian and traffic control
- Private sites.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Legislation
- Inspection
- Safety equipment
- Personal Protective Equipment
- Relevant regulation and procedures
- Emergency and hazardous work situations
- Relevant sections of standard operating procedures

Unit Sector(s)

Utilities industry

Competency Field

Competency Field **11)**

Cross discipline

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UEGNSG134A Establish a utilities infrastructure work site

Modification History

This unit is a revised version of the UEG11 unit UEGNSG105B Establish the work site.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers establishing utilities infrastructure work sites in accordance with relevant legislation, standards, codes and established procedures.

It encompasses planning and scheduling work, organising resources, materials, procedures and the site for the required work.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to when establishing a utilities infrastructure work site. These include workplaces in the gas industry (transmission and distribution construction), electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry.

It is subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the utilities industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, Workplace Health and Safety/Occupational Health and Safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to establish a utilities work site	1.1 WHS/OHS, environmental and sustainable energy measures, policies and procedures relevant for the site are identified, accessed and understood.

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ELEMENT	PERFORMANCE CRITERIA	
	1.2	Relevant requirements and established procedures for the site are provided and discussed with relevant persons to establish and confirm the work schedule.
	1.3	Hazards are identified and reported to relevant persons to assess the risks implement control measures according to established procedures.
	1.4	Scope of work is received and confirmed with relevant persons according to requirements and established procedures
	1. 5	Appropriate persons are consulted to ensure the work is carried out effectively with others.
	1.6	Resources including equipment, tools, materials, drawings, notices and personal protective equipment required for the job are identified, obtained and checked for correct operation and safety.
	1.7	Relevant responsibilities associated with related work safety and emergency procedures for an incident at the work site are checked and confirmed.
	1.8	Client issues are referred to appropriate persons in accordance with industry standards.
	1.9	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Establish a utilities work site	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Machines/plant/equipment is confirmed as being safe where necessary in strict accordance WHS/OHS requirements and procedures.
	2.3	Appropriate tools and equipment are selected and used correctly and safely.

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ELEMENT	PERFORMANCE CRITERIA	
	2.4	Establishing the work site is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.5	Any WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.6	Procedures for referring non-routine events to the immediate authorised persons for directions are followed
	2.8	Routine quality and safety checks of the work are carried out in accordance established procedures.
3 Complete work and relevant documentation.	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work site is tidied and made safe in accordance with established procedures.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of the completion of the work according to established procedures.
	3.5	Relevant work completion documentation is completed accurately and provided to the appropriate persons in accordance with established procedures.

Required Skills and Knowledge

7) **This describes the required skills and knowledge and their level, required for this unit.**

Evidence shall show that knowledge has been acquired of safe working practices for establishing the work site.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge

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required is provided below. It forms an integral part of this unit.

KS01-G134A Establish a worksite in a utilities industry environment

Evidence shall show an understanding of establishing utilities industry work sites to an extent indicated by the following aspects:

T1. High risk utility industry work activities – awareness

T2. Site inspection

T3. Prestart checks

T4. Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements

T5. Risk Assessment, controls, precautions and conditions;

- hazard identification, including confined spaces, trenching and shoring
- field risk assessment
- hierarchy of controls

T6. Protocols for dealing with accidents and emergencies

T7. Basic drawings and diagrams

T8. Relevant equipment, tools and machinery

T9. Stakeholder communication

T10. Security requirements

T11. Storage

T12. Council and Community requirements / restrictions

T13. Short and Long term site requirements

Evidence Guide

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment

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intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

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Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety/Occupational Health and Safety, workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Establish a utilities infrastructure work site as described in 9) Range and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Identifying, locating and interpreting relevant	At least 4	• Access and use plans, drawings and maps • Utilise Dial Before You Dig information or its equivalent application • Obtain procedures and

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information procedures		work instructions • Correctly interpret and follow instructions • Advise stakeholders of upcoming work • Utilise and participate in the preparation of a safe work method statement or JSA • Work in accordance with all work permits/precautions as necessary
B. Procedures to control and minimise the impact of an environmental incident	At least 6	• Locate all assets in area • Check all materials and equipment • Access all relevant MSDS sheets • Identify and monitor all possible environmental hazards • Utilise control measures for identified hazards • Correctly use PPE appropriate to the Industry • Perform machinery daily log checks and verify operator qualifications
C. Risk control procedures	At least 3	• Inspect site • Isolated work site • Erect barricades • Layout warning and safety signs • Establish a muster point where appropriate • Log all steps onto permit or work sheet • Control traffic • Isolate gas supply and detect gas • Follow emergency response plans, • Follow safe lift plans,

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		• Follow JSA, • Work with contractors
D. WHS/OHS procedures	All	• Work utilising relevant OHS legislation, regulations, policies and procedures • Maintain a safe and clean workplace • Work safely with hazardous materials and equipment • Apply safe manual handling techniques • Communicate effectively in the workplace • Apply basic planning skills
E. Unplanned events	At least one occasion	• Respond to an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

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These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Skills and Knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment

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UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry

Range Statement

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Unit shall be demonstrated in relation to establishing utilities work sites including:

- Above ground level sites
- Below ground level sites
- Public sites, requiring pedestrian and traffic control
- Private sites

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in UEG Training Package.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Responsibility
- Work plans
- Procedures
- Documentation

Unit Sector(s)

Utilities

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Competency Field

Competency Field **11)**

Cross discipline

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UEGNSG135A Monitor and control gas odourisation

Modification History

This unit is a revised version of the UEG11 unit UEGNSG107B Control gas odourisation.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers monitoring and controlling the odourisation of gas in accordance with relevant legislation, standards, codes and established procedures.

It encompasses the use of the appropriate tools, equipment and chemicals; the response procedures for uncontrolled release and completion of the relevant documentation.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe work site where monitoring and control of gas odourisation occurs. It is subject to all Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) **Elements describe the essential outcomes of a competency standard unit**

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to monitor and control odourisation of gas	1.1 WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2 Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule.

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ELEMENT	PERFORMANCE CRITERIA	
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed
	1.4	Hazards are identified, WHS/OHS risks are assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of work under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures.
	1.6	Resources including personnel, equipment, tools, materials and personal protective equipment needed to do the work are identified, scheduled and obtained and check for correct operation and safety.
	1.7	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.8	Relevant responsibilities associated with First Aid and other related work procedures for an incident at the worksite and checked and confirmed
	1.9	Appropriate persons are consulted to ensure the work is coordinated effectively with others.
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed in accordance with established procedures
	1.11	Site preparation, safety plan, schedule of work and standard operation procedures are confirmed in accordance with established procedures
2 Monitor and control odourisation of gas	2.1	WHS/OHS risk control measures, schedule of work and standard operation procedures for carrying out the work are followed.

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ELEMENT	PERFORMANCE CRITERIA	
	2.2	Hazardous activities such as lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are conducted in accordance with given instructions and requirements
	2.3	The monitoring and control of gas odourisation is carried out efficiently, to the required standard without waste of materials or damage to the apparatus, circuits, the surrounding environment or services and using sustainable energy principles
	2.4	Odourant is handled and transported and potential hazards, safety risks and control measures are monitored and preventative action taken in accordance with requirements and established procedures
	2.5	Procedures for referring non-routine events to the immediate authorised persons for directions are followed
	2.6	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	Emergency shutdown is carried out effectively in the event of a spill according to established procedures
	2.8	Routine quality checks are carried out in accordance with established procedures
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work site is cleaned up and made safe in accordance with established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.4	Relevant work permit(s) are signed off and equipment is returned to service in accordance

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ELEMENT	PERFORMANCE CRITERIA	
		with requirements
	3.5	Appropriate persons are notified of the completion of the work in accordance with established procedures
	3.6	Work completion documentation is completed accurately and provided to the appropriate persons in accordance with established procedures

Required Skills and Knowledge

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for monitoring and controlling gas odourisation in accordance with relevant legislation, standards, codes and established procedures.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

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KS01-G135A Gas odourisation

Evidence shall show an understanding of the monitoring and controlling gas odourisation in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas odourisation

- purpose
- requirements
- correct odourant and dosing levels

T2. Odourising chemicals

- MSDS
- Storage, transporting and handling
- WHS/OHS and environmental requirements
- job safety analysis
- spills/leaks
- gas detection equipment
- disposing of waste

T3. Legislation, standards, codes requirements

- approvals
- permits/authorisations

T4. Monitor and adjust odourant levels

- equipment
- tools and measuring devices
- odourmeter
- lance, hoses, regulators
- level indicators
- established procedures and schedules for measuring, filling and adjusting odourant levels

T5. Emergency/spill response

- types of emergencies/spills
- emergency response plans/procedures
- required emergency equipment/kit
- absorption material neutralisers
- fire control systems
- emergency containers
- transfer pump
- molecular sieve for venting

T6. Odourisation shutdown

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- requirements
- procedures

T7. Documentation relevant to odourisation

- MSDS
- approval, records and reporting requirements
- reports, forms, etc.

Evidence Guide

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment

intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence

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need to be ‘rich’ in nature so as to minimise error in judgment

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its ‘richness’. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the ‘Assessment Guidelines — UEG11’. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills

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- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Monitoring and controlling gas odourisation as described in the 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Odourant storage and handling procedures	All	• Applying environmental and WHS/OHS legislation • Interpret MSDS • Transport and handling requirements • Spill and waste management procedures

B. Odourant monitoring and control procedures	All	• Interpret relevant technical drawings and symbols
		• Obtain work authorisation
		• Communicate with other authorities and stakeholders
		• Carry out pre- start checks
		  • check odourant levels
		  • ensure spill response procedures are in place
		• Use of gas detection equipment
		• Correct and monitor odourant levels

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		• Adding odourant
C. Tools/equipment	At least 6	• Odourmeter • Lance, hoses, regulators • Emergency response kit • Neutralisers • Masking agent • Level indicators • Fire control systems • Emergency containers • Transfer pumps • Molecular sieve for venting
D. Unplanned Event	At least one occasion	Dealing with unplanned events by drawing on required skills and knowledge, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment

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environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required Skills and Knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG133A	Comply with environmental policies and procedures in the utilities industry

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BSBFLM312B Contribute to team effectiveness

BSBFLM303C Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

10) **This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.**

This unit shall be demonstrated in relation to monitoring and controlling gas odourisation in accordance with relevant legislation, standards, codes and established procedures. This includes ensuring relevant permits/authorisations are in place, safely storing and handling required chemicals, monitoring and adjusting odourisation levels, responding to chemical spills and completing relevant documentation.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and Equipment
- Spill and contamination response
- Documentation

Unit Sector(s)

Gas

Competency Field

Competency Field **11)**

Cross discipline.

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UEGNSG136A Carry out transmission pipeline construction work activities

Modification History

This unit is a revised version of the UEG11 unit UEGNSG125A Carry out transmission pipeline construction work activities

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Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers the basic gas transmission pipeline construction work activities in accordance with relevant legislation, standards, codes and established procedures.

This encompasses the phases of work in a gas transmission construction environment, the safety and environmental hazards and the tools necessary to conduct the activities. This may include slinging, welding, trenching, shoring, hydro testing, pipeline coating and coating testing, cathodic protection components, directional drilling

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe work site where Gas Industry operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract

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of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

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Pre-Requisites

Prerequisite Unit(s)

4) Prerequisites:

4.1)CSU(s): Competencies

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

4.2) Literacy and numeracy skills

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 "Literacy and Numeracy"

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills

5)

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged

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Employability Skills **5)**

will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) **Elements describe the essential outcomes of a competency standard unit**

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to carry out transmission pipeline construction work activities	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to do the work are identified, scheduled, obtained and checked for correct operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others

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ELEMENT	PERFORMANCE CRITERIA	
		involved
	1.8	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.9	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out transmission pipeline construction work activities	2.1	WHS/OHS risk control measures, schedule of work and standard operation procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches and/or aloft, use of power tools equipment, techniques and practices are conducted in accordance with given instructions and requirements
	2.4	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.5	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.6	Procedures for referring non-routine events to the immediate authorised persons for directions are followed
	2.7	Routine quality checks are carried out in accordance with work instructions.

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ELEMENT	PERFORMANCE CRITERIA	
3 Complete basic work activities and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work area is tidied and made safe according to established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to the appropriate persons in accordance with established procedures.

Required Skills and Knowledge

7) **This describes the required skills and knowledge and their level, required for this unit.**

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work activities in a transmission pipeline construction industry work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the Required Skills and Knowledge required is provided below. It forms an integral part of this unit.

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KS01-G136A Transmission pipeline construction

Evidence shall show an understanding of the transmission pipeline construction work activities in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Transmission Pipeline construction activity lifecycle

- alignment
- clearing
- excavation
- construction
- testing
- back filling
- reinstatement
- commissioning
- re-vegetation

T2. Transmission pipeline construction activities

- slinging
- welding
- trenching
- shoring
- hydro testing
- pipeline coating and coating testing
- cathodic protection components
- directional drilling

T3. Relevant legislation, regulations, codes

- awareness and knowledge of approvals

T4. Equipment, tools and PPE for transmission construction work

T5. Communication protocols and equipment

T6. Relevant Safety and Environmental hazards and mitigation measures

- signage and marking
- traffic control requirements
- construction risks
- remote area hazards
- drug and alcohol awareness
- treatment of disturbed materials

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Evidence Guide

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1) Overview:

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines - UEG11". Evidence shall also comprise:

- A representative body of performance criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range; and
  - Apply sustainable energy principles and practices as specified in the performance criteria and range; and
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills; and
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures; and
- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - Carry out transmission pipeline construction work activities as described in 9.) Range Statement and including:

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Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A WHS/OHS	All	Workplace/Occupational Health and Safety policies and procedures followed
B Tools and equipment:	At least 6	• General concrete mixer • General vacuum cleaner • General trolley • Non pressurised pumps and hoses • Wheelbarrows • Traffic barriers • Extra low voltage lighting equipment • Hand held tools • Holiday detection equipment • Power tools • Pressurised pumps and hoses • Tru bend • Hand wrapping machines • Follow standard operating procedures
C Calculations	All	Utilities industries calculations
D Information	All	• Read and interpret workplace documents • Communicate in a team environment
E Unplanned event	At least one occasion	Dealing with an unplanned event by drawing on essential knowledge and

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		associated skills to provide appropriate solutions

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment

8.4)

This Competency Standard Unit shall be assessed by methods

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given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG002A	Prepare to work in the Australian gas industry
UEGNSG102C	Carry out work activities in a gas utilities industry work environment
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

9) **This relates to the unit of competency as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.**

This Competency Standard Unit shall be demonstrated in relation to carrying out work activities in a transmission pipeline construction industry work environment in accordance with relevant legislation, standards, codes and established procedures.

This may include slinging, welding, trenching, shoring, hydro testing, pipeline coating and coating testing, cathodic protection components, directional drilling.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an

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integral part of the Range Statement of this unit:

- WHS/OHS policies and procedures
- Tools and equipment
- Appropriate persons
- Established procedures and requirements
- Legislation
- Safety Equipment
- Personal Protective Equipment
- Emergency and Hazardous Work Situations

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Transmission

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UEGNSG137A Operate and Maintain Gas Station Water Bath Heaters

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the monitoring, operating and maintenance of gas station Water Bath Heaters and associated equipment in accordance with relevant legislation, codes, regulations and procedures.

It encompasses gas fired and electric Water Bath Heaters.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to the following the types of gas facilities, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace:

- Trunk Receiving Stations (TRS)
- Pressure Reduction Stations

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, Workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

A 'high risk work licence' may be required for performing maintenance on Turbine engines, heaters and boilers. Check with your state regulator such as 'WorkSafe' or 'WorkCover' for more information. Pressure equipment such as Water Bath heaters used in Australia are subject to periodic external and internal inspection as determined by AS3788 as well as the typical commissioning or re-commissioning inspection. Persons performing these inspections must be suitably qualified and licensed.

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age at which persons can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

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Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills
The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to operate & maintain gas station water bath heaters	1.1 WHS/OHS and environmental measures for the site are identified, obtained and understood. 1.2 Work requirements for the work are interpreted from plans, specifications and instructions 1.3 Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule and respective responsibilities. 1.4 WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed. 1.5 Hazards are identified, WHS/OHS risks are assessed and control measures are prioritised, implemented and monitored according to established procedures. 1.6 Scope of the responsibility under the relevant work permit and/or relevant notification is received and confirmed to access, isolate/de-energise systems and perform work according to requirements and established procedures 1.7 Equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for correct operation and safety. 1.8 Appropriate persons are consulted to ensure the work is coordinated effectively with others involved 1.9 Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures 1.10 Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.

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ELEMENT	PERFORMANCE CRITERIA
2 Operate & maintain gas station water bath heaters	1.11 Third party issues are referred to appropriate persons in accordance with established procedures. 1.12 Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures. 2.1 WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed. 2.2 Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely. 2.3 Hazardous activities such as lifting, climbing, working in confined spaces, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements 2.4 Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles. 2.5 Hazard warnings and safety signs are recognised and WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures 2.6 Information on gas temperature, water levels and utility supply gas is collected and reported in accordance with established procedures. 2.7 Scheduled maintenance of components conducted in accordance with the work schedule and established procedures 2.8 Water bath heater components are maintained and operated in accordance with established procedures 2.9 Faults and operational conditions of the components are identified, repaired or replaced and reported in accordance with organisational requirements 2.10 Procedures for referring non-routine events to the immediate authorised persons for directions are followed. 2.11 Routine quality checks are carried out in accordance with work instructions

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ELEMENT	PERFORMANCE CRITERIA
3 Complete work and relevant documentation	3.1 WHS/OHS risk control work completion measures and procedures are followed. 3.2 Work site is tidied and made safe in accordance with established procedures 3.3 Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored. 3.4 Appropriate persons are notified of work completion according to established procedures 3.5 Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G137A Water Bath Heater Maintenance and operation

Evidence shall show an understanding of operating and maintaining gas fired and electric water bath heaters in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Fundamentals of dew point control and gas heating

- Joule Thompson effect
- Relationship of Pressure, Temperature and Volume

T2. Water bath heaters

- Types and applications: gas fired and electric
- Operation
- Components
- Skid layouts

T3. Operating modes

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- Dual heater skid operation
- Automatic
- Manual
- Set point Control

T4. Temperature control systems

T5. Fuel gas supply systems

T6. Component venting and purging operations

T7. Start-up and shut-down operation

T8. Heater run changes

T9. Routine inspection requirements

T10. Maintenance requirements including:

- Gas burner maintenance including pilot and main burner control both ‘natural’ and ‘forced draft’
- Temperature monitoring and control
- Water condition monitoring and corrosion inhibitors

T11. Manufactures specifications, manuals and procedures.

T12. Organisations manuals and procedures

T13. Relevant Legislation, Standards, Codes and Regulations including:

- Regulator (Workcover) pressure vessels inspection requirements
- AS1210 - 1997 Pressure vessels
- AS3788 Pressure Vessel in-service inspections
- AS4343 Pressure equipment - Hazard levels
- AS 2971 - 2002, Serially produced pressure vessels
- AS5601 Gas installations

T14. Reporting and documentation requirements

T15. Fault-finding and trouble-shooting water bath heaters

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2**

Before the critical aspects of evidence are considered all

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prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines — UEG11". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carry out work on water bath heaters in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:
    A. Ideas described asntifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.
    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices
    C. Operating and maintaining water bath heaters and associated equipment including utility supply gas and temperature control systems

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D. Operating, adjusting/testing, fault finding and maintaining pressure measurement, controls and relief devices

E. Purging and venting components

F. Completing required documentation and reporting.

G. Dealing with unplanned events by drawing on required skills and knowledge , procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with

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the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG132A	Carry out work activities in a utilities industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish the work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to operating, fault finding, repair, replacement and maintenance of gas fired and electric water bath heaters typically located at:

- Trunk Receiving Stations (TRS)
- Pressure Reduction Stations

Note:

Fault finding is limited to the component level.

This does not include electrical work that requires either a full or restricted electrical licence.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Local and remote monitoring, adjusting and controlling
- Regulation of gas temperature
- Water bath condition monitoring
- Recording and reporting
- Regulation of the system
- Equipment
- Organisational and statutory requirements

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Unit Sector(s)

Gas Sector

Competency Field

Competency Field **11)**

Gas systems operations

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UEGNSG138A Install and commission stationary gas fuelled turbine engines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope

1.1) Descriptor

This unit covers the installation and commissioning of stationary gas fuelled turbine engines, up to a capacity of 5GJ/hr (1300kw), for approval where required.

It encompasses working safely and to installation standards matching the plant/equipment, location, components and fuel train pipe-work to given specifications. Commissioning the plant and equipment including: pre commissioning tests, start up, adjusting components and controls to safe and efficient operation. Completing all necessary installation and commissioning documentation.

Note: 500kw equates to a gas input of approximately 6Gj/hr.

Application of the Unit

Application of the Unit

2)

2.1) General Application

This competency standard unit is suitable for employment-based programs under an approved contract of training at the AQF level of the qualification in which the unit is first packaged or higher.

The unit may be selected as an elective (see qualification packaging rules) provided that all prerequisite units are undertaken or addressed through recognition processes.

This unit may be included in a skill set.

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2.2) Importation

RTOs wishing to import this unit into any qualification under the flexibility provisions of NQC/NSSC Training Package Policy should ensure all pre-requisite units are also imported into the relevant Training Package and qualification.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit in some States/Territories requires an authority to practice in the workplace. Other conditions may apply under State and Territory legislative and regulatory requirements.

Pre-Requisites

4.1) Competencies

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Common Unit Group

UEGNSG005A	Prepare to work in the Australian gas industry

WHS/OHS Unit Group

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Or

CPCCOHS1001A	Work safely in the construction industry

And

HLTAID001	Perform cardiopulmonary resuscitation

4.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

5)

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a unit of competency*	*Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the evidence guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to install and commission stationary gas fuelled turbine engine	1.1 WHS/OHS procedures for a given work area are identified, obtained and understood. 1.2 Health and safety risks are identified and established risk control measures and procedures in preparation for the work are followed. 1.3 Safety hazards that have not previously been identified are noted and established risk control measures are implemented. 1.4 Design specification for gas fuelled turbine engines to be installed and commissioned is accessed, analysed, interpreted and confirmed through a detailed site inspection. 1.5 Design specification matters requiring clarification are resolved through liaison with designer and gas authorities. 1.6 Formal authority to proceed with installation and commissioning is obtained before commencing work, in accordance with regulatory and code of practice requirements. 1.7 Installation is prepared in consultation with others affected by the work and sequenced appropriately in line with quality assurance requirements. 1.8 The nature and location of the work is determined from documentation or appropriate person to establish the scope of work to be undertaken. 1.9 Plant, equipment and component specifications and manufacturer manuals are obtained for planned work activity. 1.10 Locations of plant, equipment, fuel train pipe-work and components are planned within the constraints of work site, significants and requirements. 1.11 Materials needed for the installation work are obtained in accordance with design specification and established procedures 1.12 Tools, equipment, including personal protective equipment, and testing devices needed to for the installation and commissioning work are obtained in accordance with established procedures and checked for correct operation and safety. 1.13 Work area is prepared to support efficient installation and commissioning of the plant and equipment. 1.14 Preparatory work is checked to ensure no damage has occurred and complies with

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ELEMENT	PERFORMANCE CRITERIA	
		requirements.
2 Install stationary gas fuelled turbine engine	2.1	WHS/OHS risk control measures and procedures for carrying out the work are followed.
	2.2	Regulatory and code of practice recording and reporting requirements are satisfied at appropriate times throughout the work sequence.
	2.3	Gas and electrical circuits/machines/plant are checked as being isolated where necessary in strict accordance WHS/OHS requirements and procedures.
	2.4	Stationary gas fuelled turbine engine components, including fuel train and associated pipe-work and flue/exhaust systems are installed in accordance with approved design specification and comply with technical standards and regulatory requirements, with sufficient access to affect terminations, adjustment and maintenance.
	2.5	Ventilation systems are installed in accordance with approved design specifications
	2.6	Electrical components, wiring enclosures and wiring, including terminations are installed in accordance with design and manufacturer's specifications, and functional and regulatory requirements.
	2.7	Ongoing compliance and safety inspections of the installed turbine engine , equipment, pipe-work, components and accessories are undertaken and defects are rectified
	2.8	Installation is carried out efficiently without unnecessary waste of materials or damage to plant, equipment, pipe-work, components, accessories, the surrounding environment or services and using sustainable energy principles.
	2.9	Unexpected situations are dealt with safely and with the approval of an authorised person.
3 Commission stationary gas fuelled turbine engine	3.1	WHS/OHS risk control measures and procedures for carrying out the work are followed.
	3.2	Regulatory and code of practice recording and reporting requirements are satisfied at appropriate times throughout the work sequence.
	3.3	Gas and electrical safety checks and isolation procedures, including purging are completed

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ELEMENT	PERFORMANCE CRITERIA	
		and recorded to manufacturer and other authority requirements before testing and commissioning are commenced.
	3.4	Operational parameters of individual components are tested and adjusted to conform to specifications
	3.5	The turbine engine operations are tested first without and then with fuel, adjustments are completed as necessary and results recorded in accordance with approving authority requirements.
	3.6	Exhaust gases are analysed in accordance with recognised industry practice and other authority requirements.
	3.7	Unexpected situations are dealt with safely and with the approval of an authorised person
	3.8	Commissioning is conducted efficiently without waste of materials or damage to apparatus and the surrounding environment or services and using sustainable energy practices
4 Completion and report installation and commissioning activities.	4.1	WHS/OHS work completion risk control measures and procedures are followed.
	4.2	Final check of the installed turbine engine is made to verify that it complies with all requirements, including any certification required by local authorities.
	4.3	Work area is cleared and materials disposed of or recycled in accordance with federal, state and territory legislation and workplace procedures.
	4.4	Tools and equipment are cleaned, checked, serviced and stored in accordance with manufacturer recommendations and workplace procedures
	4.5	Work site is cleaned and made safe in accordance with established procedures.
	4.6	'As-installed' turbine engine equipment components, pipe-work, flue/exhaust systems and accessories are documented, accessed and an appropriate person or persons notified in accordance with established procedures.

Required Skills and Knowledge

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices and installing and commissioning of gas fuelled turbine engines up to a capacity of

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500kW or speeds of 3600RPM.

All knowledge and skills detailed in this unit should be contextualised to current industry standards, technologies and practices The extent of the required skills and knowledge is given below. It forms an integral part of this unit.

KS01-G138A Installation and commissioning of gas fuelled turbine engines

Evidence shall show an understanding of installation and commissioning techniques for stationary gas fuelled turbine engines, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:

T1. Gas fuel

- Types, properties and applications
- Safety
- Hazards
- Combustion
- Ignition types

T2. Gas fuelled turbine engine overview

- Types
- Major components
- Operating principles
- Manufacturer’s specifications and diagrams

T3. Fuel train requirements

- Pipe-work and connections
- Valves
- Metering devices
- Regulating valves
- Electrical controls

T4. Exhaust/flue requirements

- Materials
- Terminations
- Sizing

T5. Location ventilation requirements

- Materials
- Calculations
- Interlocks
- Locations

T6. Hazardous area requirements

- Locations

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- Housing requirements
- Distances

T7. Codes, regulations and standards

- AS 3814
- AS 5601

T8. Design specifications

- Accessing
- Analysis and interpretation
- Calculations

T9. Required authority to proceed

- Regulatory requirements (Scope and restrictions)
- Standards and code of practice requirements.
- Required documentation and submissions

T10. Site Arrangements

- Location and environment
- Piping requirements for gas fuel train pipe-work
- Suitable equipment/equipment plant locations

T11. Site Safety

- Hazards
- Checklists
- Reports

T12. Plant/equipment diagrams

- Mechanical layouts
- Gas pipe-work drawings
- Electrical circuits

T13. Installation

- Turbine engines plant and equipment
- Gas train pipe-work and components
- Exhaust/flue system
- Ventilation system
- Pressure testing and purging
- Authorisations and certification requirements and procedures

T14. Commissioning

- Inspection of the installed turbine engine s, pipe-work, components and accessories
- Testing turbine engine operation first without and then with fuel
- Testing and adjusting regulator, operation and safety controls

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- Exhaust gases analysis throughout operating parameters including bifuel applications
- Compliance with design specification, regulations, codes, standards and manufacturers specifications
- Documentation and reports
  - As-installed' turbine engine components, pipe-work, flue/exhaust systems and accessories are documented and reported

Evidence Guide

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data

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gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Before the critical aspects of evidence are considered all prerequisites shall be met.

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the required skills and knowledge as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:

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- Install and commission gas turbine engines as described in 9) Range Statement and including:

  A Obtaining formal authority to proceed with installation and commissioning before commencing work, in accordance with regulatory and code of practice requirements.

  B Reading and interpreting drawings related to plant/equipment locations and pipe-work connections

  C Installing, securing, aligning and connecting plant, equipment, pipe-work, components and accessories accurately in their planned location and in compliance with codes and standards.

  D Undertaking on-going compliance and safety inspections

  E Rectifying any defects revealed through on-going inspections

  F Pressure testing, repairing leaks and purging the fuel train system entire system to the appropriate design test pressures.

  G Commissioning plant and equipment operation as necessary and results recorded in accordance with approving authority requirements

  H Correctly documenting ‘as-installed’ plant, equipment, pipe-work, components and accessories

  I Dealing with unplanned events

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

WHS/OHS policy and work procedures and instructions.

Suitable work environment, facilities, equipment and materials

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to undertake actual work as prescribed by this unit.

These should be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to installing low voltage electrical apparatus and associated equipment.

Method of assessment

8.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent Assessment

8.5)

There are no concurrent assessment recommendations for this unit.

The critical aspects of occupational health and safety covered in either UEGNSG141A or CPCCOHS1001A and HLTCPR201A and other discipline specific occupational health and safety units shall be incorporated in relation to this unit

Range Statement

9) *This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments*

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and situations that will affect performance.

This unit shall be demonstrated in relation to installation and commissioning of stationary gas fuelled turbine engines up to a capacity of 5GJ/hr (1300kw), which includes each of the following:

- Installing and connecting gas fuel train pipe-work, regulators, valves, metering and protective devices from gas pipeline to the turbine engine.
- Installing and connecting flue/exhaust system
- Pressure testing and purging gas fuel train
- Commissioning gas fuelled turbine engine, adjusting components and controls to safe and efficient operation.

The gas fuel can be from gas gathering lines, gas transmission pipelines, distribution pipeline, and consumer gas installations. Gas Fuels can be natural gas, LPG, SNG, bio-gas, waste gas or sewage gas, used as a single gas fuel or part of a dual fuel system.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Maintenance

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UEGNSG139A Repair and maintain stationary gas fuelled turbine engines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope**

1.1) Descriptor

This unit covers the isolation, disconnecting, repairing, reconnecting and maintenance of stationary gas fuelled turbine engines up to a capacity of 5GJ/hr (1300kw), for approval where required.

It encompasses working safely and to relevant standards disconnecting, carry out repairs and replacement of fuel train components to given specifications. Reconnecting the engine including: pre start tests, start up, adjusting components and controls to safe and efficient operation. Completing all required documentation.

Note: 500kw equates to a gas input of approximately 6Gj/hr.

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Application of the Unit

Application of the Unit **2)**

2.1) General Application

This competency standard unit is suitable for employment-based programs under an approved contract of training at the AQF level of the qualification in which the unit is first packaged or higher.

The unit may be selected as an elective unit (see qualification packaging rules) provided that all prerequisite units are undertaken or addressed through recognition processes.

This unit may be included in a skill set.

2.2) Importation

RTOs wishing to import this unit into any qualification under the flexibility provisions of NQC/NSSC Training Package Policy should ensure all pre-requisite units are also imported into the relevant Training Package and qualification.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit in some States/Territories requires an authority to practice in the workplace. Other conditions may apply under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite unit(s) **4.1) Competencies**

Granting competency in this unit shall be made only after

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competency in the following unit(s) has/have been confirmed

Common Unit Group	
UEGNSG005A	Prepare to work in the Australian gas industry
WHS/OHS Unit Group	
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
Or	
CPCCOHS1001A	Work safely in the construction industry
and	
HLTAID001	Perform cardiopulmonary resuscitation

4.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	**Prepare to repair and maintain gas fuelled turbine engines**	1.1	WHS/OHS procedures for a given work area are identified, obtained and understood.
		1.2	Health and safety risks are identified and established risk control measures and procedures in preparation for the work are followed.
		1.3	Safety hazards that have not previously been identified are noted and established risk control measures are implemented.
		1.4	Formal authority to proceed with repair and maintenance is obtained before commencing work, in accordance with regulatory and code of practice requirements
		1.5	Repair and maintenance is prepared in consultation with others affected by the work

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ELEMENT		PERFORMANCE CRITERIA	
			and sequenced appropriately.
		1.6	The nature and location of the work is determined from documentation or appropriate person to establish the scope of work to be undertaken.
		1.7	Plant, equipment and component specifications and manufacturer manuals are obtained for planned work activity
		1.8	Material needed for the repair and maintenance work is obtained in accordance with established procedures and checked against job requirements.
		1.9	Tools, equipment, including personal protective equipment, and testing devices needed to for the repair and maintenance work are obtained in accordance with established procedures and checked for correct operation and safety.
		1.10	Preparatory work is checked to ensure no damage has occurred and complies with requirements.
2	**Repair and maintain gas fuelled turbine engines**	2.1	WHS/OHS risk control measures and procedures for carrying out the work are followed.
		2.2	Regulatory and code of practice recording and reporting requirements are satisfied at appropriate times throughout the work sequence.
		2.3	Gas and electrical circuits/machines/plant are checked and recorded as being isolated and safe where necessary in strict accordance authority and WHS/OHS requirements and procedures before work is commenced.
		2.4	Nature and possible cause of faults or out of specification performance are identified from defect reports or operational records.

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ELEMENT	PERFORMANCE CRITERIA	
	2.5	Fault finding is approached methodically drawing on knowledge of gas fuelled turbine engines using observation, measurement, calculations and comparison with normal system and component parameters/values.
	2.6	Faults beyond the scope of gas fuel train, ignition or fume exhaust work are identified and arrangements are made for appropriately competent and authorised person to rectify faults
	2.7	Engine is disconnected where necessary to carry out maintenance and repairs in strict accordance authority and WHS/OHS requirements and procedures. Note: No modifications are permitted.
	2.8	Components are removed/dismantled where necessary and parts stored to protect them against loss or damage
	2.9	Faulty components are rechecked and their fault status confirmed.
	2.10	Materials required to rectify faults are sourced and obtained in accordance with established procedures
	2.11	Repair and maintenance work is carried out efficiently without unnecessary waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.12	Effectiveness of the repair is tested in accordance with established procedures.
	2.13	System is reassembled, reconnected and finally tested to ensure it is operating safely, effectively and complies with relevant requirements.
	2.14	Unexpected situations are dealt with safely and with the approval of an authorised person.
3 Completion and	3.1	WHS/OHS work completion risk control

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ELEMENT	PERFORMANCE CRITERIA	
report repair and maintenance		measures and procedures are followed.
	3.2	Final check of the engine is made to verify that it complies to all requirements, including any certification requirements by local authorities.
	3.3	Work area is cleared and materials disposed of or recycled in accordance with federal, state and territory legislation and workplace procedures.
	3.4	Tools and equipment are cleaned, checked, serviced and stored in accordance with manufacturer recommendations and workplace procedures
	3.5	Work site is cleaned and made safe in accordance with established procedures.
	3.6	Maintenance and repair work is documented and an appropriate person or persons notified in accordance with established procedures.

Required Skills and Knowledge

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices and repairing and maintaining gas fuelled turbine engines up to a capacity of 500kW or speeds of 3600RPM.

All knowledge and skills detailed in this unit should be contextualised to current industry standards, technologies and practices. The extent of the required skills and knowledge required is given below. It forms an integral part of this unit.

KS01-G139A Repairing and maintaining gas fuelled turbine engines

Evidence shall show an understanding of repairing and maintaining stationary gas fuelled turbine engines, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:

T1. Gas fuel

- Types, properties and applications

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- Safety
- Hazards
- Combustion
- Ignition types

T2. Gas fuelled turbine engines

- Types
- Major components
- Operating principles
- Manufacturer’s specifications and diagrams

T3. Fuel train requirements

- Pipe-work and connections
- Valves
- Metering devices
- Regulating valves
- Electrical controls

T4. Exhaust/flue requirements

- Materials
- Terminations
- Sizing

T5. Location’s ventilation requirements

- Locations
- Materials
- Calculations
- Interlocks

T6. Hazardous area requirements

- Locations
- Housing requirements
- Distances

T7. Codes, regulations and standards

- AS 3814
- AS 5601

T8. Design specifications

- Accessing
- Analysis and interpretation
- Calculations

T9. Required authority to proceed

- Regulatory requirements (Scope and restrictions)

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- Standards and code of practice requirements.
- Required documentation and submissions

T10. Site Arrangements

- Location and environment
- Piping requirements for gas fuel train pipe-work
- Suitable equipment/equipment plant locations

T11. Site Safety

- Hazards
- Checklists
- Reports

T12. Engine diagrams

- Mechanical layouts
- Gas pipe-work drawings
- Electrical circuits

T13. Fault finding

- Taking readings and gathering information
- Symptoms and possible faults
- Logical fault diagnosis sequence and flow charts
- Manufacturer’s fault diagnosis tables
- Confirming actual fault

T14. Disconnect requirements and procedures

- Regulator, business and customer requirements
- Manufacturers specifications and procedures

T15. Repairs and maintenance requirements and procedures

- Gas train pipe-work and components
- Exhaust/flue system
- Ventilation system
- Oil change
- Oil and air filter replacement

T16. Reconnection requirements and procedures

- Regulator, business and customer requirements
- Manufacturers specifications and procedures
- Inspection of the installed engine, pipe-work, components and accessories
- Pressure testing and purging
- Testing engine operation first without and then with fuel
- Testing and adjusting regulator, operation and safety controls
- Exhaust gases analysis.

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- Compliance with design specification, regulations, codes, standards and manufacturers specifications back to Commissioned settings
- Documentation and reports
  - As-installed' plant and equipment components, pipe-work, flue/exhaust systems and accessories are documented and reported

Evidence Guide

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

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- Implement Workplace/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
- Apply sustainable energy principles and practices as specified in the performance criteria and range statement
- Demonstrate an understanding of the required skills and knowledge as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Repairing and maintaining gas fuelled turbine engines as described in 9) Range Statement and including:

    A Conducting maintenance

    B Finding faults efficiently

    C Disconnecting engine

    D Rectifying faults without damage

    E Reconnecting

    F Providing written reports on work undertaken

    H Dealing with unplanned events

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Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to installing low voltage electrical apparatus and associated equipment.

Method of assessment

8.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no concurrent assessment recommendations for this unit.

The critical aspects of occupational health and safety covered in either UEGNSG141A or CPCCOHS1001A and HLTCPR201A and other discipline specific occupational health and safety units shall be incorporated in relation to this unit.

Range Statement

9) *This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments*

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and situations that will affect performance.

This unit shall be demonstrated in relation to repairing and maintaining stationary gas fuelled turbine engines up to a capacity of 5GJ/hr (1300kw), which includes each of the following:

- Gas fuel train pipe-work, regulators, valves, metering and protective devices from gas pipeline to the engine.
- Flue/exhaust system
- Pressure testing and purging gas fuel train
- Disconnecting and reconnecting gas fuelled turbine engines, adjusting components and controls to safe and efficient operation.

It does not include the following:

- Repairs the internal mechanical components of the engine

The gas fuel can be from gas gathering lines, gas transmission pipelines, distribution pipeline, and consumer gas installations. Gas Fuels can be natural gas, LPG, SNG, bio-gas, waste gas or sewage gas, used as a single gas fuel or part of a dual fuel system.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Maintenance

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UEGNSG140A Apply environmental policies and procedures in the utilities industry

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the application of environmental policies and procedures whilst undertaking tasks in a utilities industry workplace.

It encompasses the requirements for applying with relevant sections of Commonwealth and State Environmental Protection, and Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) Acts and Regulations, and their application to relevant workplace procedures.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe workplace where utility industry operations occur which includes the gas industry, electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Environmental Legislative requirements, Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and Duty of Care requirements being met for the environment and the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the utilities industry. It is suitable for pre-employment and employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

Licence to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Environmental Legislation, Chemical Management, Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry

Literacy and numeracy **4.2)**

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Prerequisite Unit(s)	**4)**
skills	Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy' Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills	**5)**
	The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to apply environmental policies and procedures	1.1	Work instructions and WHS/OHS measures for the workplace are obtained, accessed and understood.
	1.2	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the

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ELEMENT	PERFORMANCE CRITERIA	
		work schedule.
	1.3	Environmental and WHS/OHS policies, procedures and requirements for the work to be performed are received and confirmed
	1.4	Environmental and WHS/OHS hazards are identified and reported to relevant persons to assess the risks and implement control measures according to established procedures.
	1.5	Resources including environmental protection equipment required for the work are obtained, received and checked for correct operation and safety.
	1.6	Workplace preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Apply environmental policies and procedures	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Environmental policies and procedures requirements are applied and control measures are included in the work processes
	2.3	Appropriate materials, tools and equipment are selected and used correctly and safely.
	2.4	Any environmental incidents, accidents and potential problems are immediately reported to appropriate persons and dealt with in accordance with established procedures and legislative requirements.
	2.5	Routine quality checks of the work are carried out in accordance with work instructions
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Workplace is tidied and made safe.

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ELEMENT	PERFORMANCE CRITERIA	
	3.3	Tools, equipment, vehicles and plant and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of the completion of the work in accordance with established procedures
	3.5	All waste is disposed of in accordance with procedures as required
	3.6	Relevant environmental records, report forms/data sheets are completed accurately in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level, required for this unit..*

Evidence shall show that knowledge has been acquired of safe working practices for applying environmental policies and procedures in the utilities industry.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge required is provided below. It forms an integral part of this unit.

KS01-G140A Environmental policies and procedures in a utilities industry work environment

Evidence shall show an understanding and ability to apply environmental policies and procedures whilst undertaking tasks in a utilities industry workplace to an extent indicated by the following aspects:

T1. Relevant Commonwealth/State/Territory environmental legislation, regulations and codes of practice.

T2. Role of regulatory bodies in monitoring environmental activities, risk and incident compliance

T3. Employee's and employer's responsibilities under the relevant environmental legislation, regulations, codes and enterprise procedures for:

- flora control

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- erosion control
- fauna control
- the protection of indigenous and cultural heritage sites

T4. Overview of environment protection procedures, records, inspections/audit and incident reporting

T5. Overview of environmental hazards, risk assessment, control measures and incident responses

T6. Application to relevant work site procedures

- use of plant/machinery/equipment
- cleaning materials and aids
- spill response equipment
- sediment erosion control equipment
- emission control and sampling equipment.

Note: Environmental damage can be caused by chemicals, oil, water contamination, carcinogenic agents, gases, dusts, vehicles, plant, equipment, waste contamination and noise, poor planning and work practices and procedures.

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

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Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge

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and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate consistent performance across a representative range of contexts from the prescribed items below.
  - Apply environmental policies and procedures in the utilities industry as described in 9) Range and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Accessing and interpreting relevant information	At least 3	• Access alignment sheets, maps, technical drawings and symbols • Identify environmental aspects and potential or actual impacts • Identify potential environmental hazards • Participate in risk assessment, JHA or JSA that includes environmental risks
B. Environmental control measure procedures	At least 5	• Installation of sediment & erosion control measures as per Legislative or Best Practice requirements. • Weed spread mitigation • Chemical management controls (MSDS, storage, labelling, bunding) • Noise control techniques

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		& work hour limitations • Air emission control measures • Waste management principles (recycling) • Hazardous waste management • Water management requirements (works near waterways) • Vegetation management requirements • Fauna protection • Heritage management techniques. • Community consultation requirements • Rehabilitation requirements
C Awareness of Environmental incident review procedures	At least 2	• Environmental incident review • Incident reporting and notification • Incident Investigation • Recommendations to prevent reoccurrence
D Unplanned event procedures	At least one occasion	Respond to an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a

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workplace. This should include:

WHS/OHS policy and work procedures and instructions.

Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.

- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment

8.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Skills and Knowledge described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with

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allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to applying environmental policies and procedures in at least one of the following utilities industry work sites including:

- Above ground level sites
- Below ground level sites
- Easements
- Public sites, requiring pedestrian and traffic control
- Private sites.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Legislation
- Inspection
- Safety equipment
- Personal Protective Equipment
- Relevant regulation and procedures
- Emergency and hazardous work situations
- Relevant sections of standard operating procedures

Unit Sector(s)

Utilities Industry

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Competency Field

Competency Field **11)**

Cross discipline

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UEGNSG141A Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

Modification History

This unit is a replacement in the gas supply industry for unit UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace.

Unit Descriptor

Unit Descriptor **1)**

1.1) Descriptor

This unit specifies the mandatory requirements of Workplace Health and Safety (WHS)/Occupational Health and Safety (OH&S) and how they apply to the various gas supply industry work functions.

It encompasses responsibilities for health and safety, risk management processes at all operative levels and adherence to safety practices as part of the normal way of doing work.

Application of the Unit

Application of the Unit **2)**

This unit addresses information, processes and techniques for the application of general workplace/occupational health and safety requirements in gas supply industry workplaces and is essential for employees without managerial or supervisory responsibilities.

It is subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OH&S) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas supply industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licencing, Workplace Health and Safety/Occupational Health and Safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit are not subject to license regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OH&S), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

4.1) Competencies

There are no prerequisite competencies for this unit.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

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Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a unit of competency*

Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to enter a work area	1.1	Work area access permits are obtained from appropriate personnel according to established procedures
	1.2	Safe work methods for controlling risk are obtained, read and understood prior to undertaking a work activity.
	1.3.	Preparations for the isolation of the plant/machine/equipment are carried out where required to prevent creation of hazards from loss of machine/system/process control according to established procedures.

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ELEMENT	PERFORMANCE CRITERIA	
	1.4	Tools and equipment needed for the work are checked for safety and correct functionality according to established procedures and regulatory requirements.
2 Apply safe working practices.	2.1	Safe work methods for controlling risk are followed accurately.
	2.2	Workplace procedures for dealing with accidents, fires and emergencies are followed according to work procedures and scope of responsibility and competencies.
3. Follow workplace procedures for hazard identification and risk control	3.1	Hazards are identified and control measures implemented and monitored through active participation in the consultation process with employer and other employees.
	3.2	Hazards in the work area are recognised and reported to appropriate personnel according to established procedures.
	3.3	WHS/OH&S records of incidents are completed in accordance with regulatory requirements and established procedures.
	3.4	Workplace instructions and training are followed accurately within established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices and applying WHS/OH&S practices in the workplace.

The knowledge and skills shall be contextualised to current industry standards, technologies and practices. The extent of the required skills and knowledge is provided below. It forms an integral part of the unit.

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REQUIRED SKILLS AND KNOWLEDGE

KS01-G141A Workplace/Occupational Health and Safety principles in the gas supply industry

Evidence shall show an understanding of Workplace Health and Safety (WHS)/Occupational Health and Safety (OH&S) to an extent indicated by the following aspects

T1. The basic legal requirements covering workplace/occupational health and safety in the workplace encompassing:

- underlying principles of WHS/OH&S
- general aims and objectives of the relevant state or territory legislation relating to WHS/OH&S.
- enterprise policies and procedures
- employer and employee responsibilities, rights and obligations.
- major functions of safety committees and representatives.
- powers given to Workplace/Occupational Health and Safety Inspectors
- housekeeping and potential hazards in relation to improper housekeeping
- selecting appropriate personal protective equipment (PPE) given hazardous situations

T2. The work environment encompassing:

- typical hazards associated with a range of work environments
- procedures used to control the risks associated with these hazards
- principles of risk assessment / management and state the purpose of each.
- hierarchy of WHS/OH&S hazard control measures.
- required documentation for risk assessment.
- commonly used workplace safety signs.
- workplace emergencies that pose a threat to health and safety and suitable procedure for an emergency workplace evacuation.
- appropriate fire extinguisher for a given type of fire.
- requirements for the location, mounting and maintenance of portable fire extinguishers.
- basic process of fighting a fire.
- Importance of safe premises, buildings and security in an industrial setting and the consequences of non- compliance.
- standard work procedure.

T3. Manual Handling encompassing:

- typical manual handling injuries and the effect they can have on lifestyle
- situations that may cause manual handling injuries
- correct procedures for lifting and carrying to prevent manual handling injuries

T4. Chemicals in the workplace encompassing:

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REQUIRED SKILLS AND KNOWLEDGE

- hazardous substances and dangerous goods.
- classification of chemicals as hazardous substances and/or dangerous goods
- requirements for labelling of chemicals in the workplace
- safe storage procedures for chemicals
- purpose and interpretation of material safety data sheet (MSDS)

T5. Working at heights encompassing:

- dangers associated with working on ladders and scaffolds
- identification of work area as a height risk and use appropriate safety equipment to prevent a fall
- selecting an appropriate ladder for a given situation and perform a safety check before use
- precautions that should be taken when ascending and working off a ladder
- precautions that should be taken when working on and around a scaffold and elevated platforms.

T6. Confined spaces encompassing:

- hazards associated with working in a confined space
- identifying workplace situations that could be classified as a confined space
- requirements for working in a designated confined space

T7. Hazardous areas encompassing:

- hazards associated with working in a hazardous area
- identifying workplace situations that could be classified as a hazardous area
- requirements for working in a designated hazardous area

T8. Physical and psychological hazards encompassing:

- short and long term effects of excessive noise and techniques to avoid damage to hearing due to excessive noise
- effects of vibration on the human body and work practices to protect against vibration
- effects of thermal stress on the human body and work practices to protect against thermal stress
- effects of ultraviolet (UV) radiation on the human body and work practices to protect against UV radiation.
- dangers associated with laser operated equipment and tools and suitable protective measures to overcome the danger.
- occupational overuse syndrome, how it occurs and means to overcome it
- factors that cause stress in the workplace, symptoms of a person suffering from stress and personal stress management techniques
- detrimental effects and dangers of drug and alcohol use in the workplace

T9. Working safely with gases encompassing:

- types and classes: fuelled, flammable and other relevant gases

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REQUIRED SKILLS AND KNOWLEDGE

- effects of gases on the human body
- common causes of gas accidents and ignition
- products of (complete and incomplete) combustion
- precautions that can minimise the chance of gas accidents and ignition
- requirements for working with gases
- fire protection and control/extinguishing

T10. Working safely with electricity encompassing:

- effects of electric shock on the human body
- common causes of electrical accidents
- static electricity
- precautions that can minimise the chance of electric shock
- precautions when of removing an electric shock victim from a live electrical situation

T11. First Aid in the workplace encompassing:

- First Aid response procedures
  - DRS
  - Overview of ABCD
- responsibilities of the First Aider.
- priorities of first aid management for any accident or injury.
- procedures required at an accident scene.
- legal and ethical issues, which may impact on the management of care.
- 'Duty of Care'.
- examination of a casualty for injuries.

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment	**8.1)** Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the

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EVIDENCE GUIDE

industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Workplace/Occupational Health and Safety workplace procedures and practices, including the use

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EVIDENCE GUIDE

of risk control measures as specified in the performance criteria and range statement encompassing:

- Apply sustainable energy principles and practices as specified in the performance criteria and range statement
- Demonstrate an understanding of the required knowledge and skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Applying WHS/OH&S practices in the workplace as described in 9) Range and including:

    A Preparing to enter the workplace including, the use of work permits and clearances and isolation permissions.

    B Understanding and following risk control safe work methods.

    C Applying work procedures and instructions as they apply to risk control measures.

    D Dealing with accidents and emergencies within the scope of responsibility.

    E Participation in consultation processes, identifying hazards and implementing and monitoring control measures.

    F Dealing with unplanned events

Note:
Ability to implement these Workplace/Occupational Health and Safety measures shall be demonstrated on all occasions safety issues arise.

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EVIDENCE GUIDE

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OH&S policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to applying WHS/OH&S practices in the workplace.

Method of assessment

8.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified required knowledge and skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

This unit shall be assessed concurrently, as it relates to other units undertaken in a possible skill clusters or qualification.

Components of this unit are included in the critical aspects of evidence of all units to help ensure the appropriate level of responsibility for safety has been acquired

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Range Statement

RANGE STATEMENT

9) *This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to each of the following:

- Relevant Workplace/Occupational Health and Safety legislation, regulations and codes of practice related to hazards present in the industry and particular workplace
- Accepted industry work procedures and the specific safety procedures and work instructions for particular workplaces in the gas supply industry

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **11)**

Cross discipline

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UEGNSG142A Conduct isolations under the permit to work system for gas industry work sites

Modification History

This unit replaces UEG11 unit UEGNSG112B Conduct isolation procedures for permit to work system for a gas industry work site

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the planning and carrying out of isolations under the permit to work system for a gas industry work site, in accordance with relevant legislation, standards, codes and established procedures.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

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License to practice **3)**

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti- discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
MSAPMOHS217A	Gas test atmospheres
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability

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Employability Skills	**5)** Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan and prepare for isolation,	1.1	WHS and environmental measures for the site are identified, obtained and understood.
	1.2	Work requirements for the work are interpreted from plans, specifications and instructions
	1.3	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule and respective responsibilities.
	1.4	WHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.5	Hazards are identified, WHS risks are assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Scope of the responsibility under the relevant work permit and/or relevant notification is received and confirmed to access, isolate/de-energise systems and perform work according to requirements and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.7	Isolation points are identified and communicated to the work party.
	1.8	Resources including persons and equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for correct operation and safety
	1.9	Resources including persons and equipment required are identified, scheduled, coordinated and confirmed
	1.10	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.9	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work"
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised by permits to work where applicable in accordance with established procedures
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Conduct isolation	2.1	WHS/OHS, environmental and sustainable energy policies and schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment PPE and measuring devices are selected and used correctly and safely
	2.3	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.

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ELEMENT	PERFORMANCE CRITERIA	
	2.4	Hazard warnings and safety signs are recognised and WHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.5	Isolations are completed, tagged, (locked out) and documented on work permit in accordance with established procedures and requirements.
	2.6	Solutions to non-routine problems are identified and actioned, according to requirements
	2.7	Ongoing checks of quality of the work are undertaken in accordance with established procedures
3 Conduct de-isolation and restoration	3.1	WHS risk control work completion measures and procedures are followed.
	3.2	De-isolations and restoration are performed, tags removed and results recorded in accordance with established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	De-isolations are confirmed with others involved in, or affected by the work in accordance with enterprise procedures
	3.3	Work completion documentation including relevant permits are completed accurately and provided to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices in conducting isolations under the permit to work system for a gas industry work sites.

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REQUIRED SKILLS AND KNOWLEDGE

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge required is provided below. It forms an integral part of this unit.

KS01-G142A Gas industry worksite isolations

Evidence shall show an understanding of planning and carrying out of isolations under the permit to work system for a gas industry work site in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedures

requirements for and use of qualified specialists

- establishing the appropriate worksite

T2. Safety requirements

- hazards
- risk assessment
- control measures

T3. Gas industry drawings

T4. Permit to Work requirements and procedures

T5. Isolation requirements and procedures including:

- points of isolations to ensure a safe work area
- isolation methods including valves, circuit breakers, pneumatics, utility gas
- communication with the work party
- document, tag and lock-out identified isolation points

T6. De-isolation at the end of each job

- requirements
- procedures
- document any remaining points of isolation

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

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Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Plan and carry out of isolations under the permit to work system for a gas industry work site in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• OHS legislation • Enterprise safety procedures, site safety and emergency procedures

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B	All	• Risk management • Planning skills • Communication skills • Problem solving skills
C	All	Isolate a range of energy sources including: • Gas • Electricity • Pneumatics • Mechanical energy.
D	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency of conducting isolations procedures for permit to work system for a Gas Industry work site

Assessment of this competency must also be undertaken in either

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an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills in section 3.1 of this competency standard.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required Knowledge and Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Unit shall be demonstrated in relation to conducting isolations under the permit to work system for a Gas Industry work site.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Strategies
- Reference information
- Communication
- Documentation (5)
- Preparation and implementation strategies

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Unit Sector(s)

Gas industry

Competency Field

Competency Field **11)**

Cross discipline

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UEGNSG204B Coordinate and conduct gas distribution pipeline repair and modifications

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the coordination of gas distribution pipeline repair and modifications. Inspection and testing techniques are included for this competency standard. It encompasses identifying and attending to leaks as classified in AS4645.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection,

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License to practice **3)**

telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare and plan for coordination of repairs and modifications of a gas distribution pipeline	1.1 Information concerning the identified repair/modification is conveyed to all parties and work schedule(s), including drawings, plans, requirements, established procedures; and material lists are received, analysed and confirmed if necessary by site inspection
	1.2 Necessary plans, specifications and other relevant information and established procedures for the work are communicated to all persons and identified for all work sites
	1.3 OHS, environmental and sustainable energy policies and procedures related to the coordinating of gas distribution pipeline repairs and modifications are obtained and confirmed for the purposes of the work performed and communicated
	1.4 Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5 Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
	1.6 Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7 Resources including persons, equipment, tools

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ELEMENT	PERFORMANCE CRITERIA	
		and personal protective equipment required for the job are identified, scheduled, obtained and confirmed in working order
	1.8	Relevant persons at worksite are confirmed to be current in First Aid and other related work procedures according to requirements
	1.9	Liaison and communication issues with other authorised persons, authorities, clients and land-owners is completed so work can be carried out where necessary
	1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.12	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2 Coordinate pipeline repairs or modifications for gas distribution pipelines and notify completion of work	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3	Essential Knowledge and Associated Skills are applied to the coordinating of gas distribution pipeline repairs and modifications to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements

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ELEMENT	PERFORMANCE CRITERIA	
	2.4	Coordination of gas distribution pipeline repairs and modifications is carried out in accordance with the work schedule and to established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the authorised persons for directions according to established procedures
	2.6	Repair work is monitored and unplanned events and amendments and modifications in the coordinating pipeline repair and modifications are undertaken within the scope of established procedures
	2.7	Known solutions to a variety of problems are applied using acquired Essential Knowledge and Associated Skills
	2.8	All required testing procedures are followed and ongoing checks of work quality are undertaken in accordance with given instructions and established procedures
3 Re-establish distribution pipeline to operational conditions and notify completion of work	3.1	System is re-established in order to meet distribution pipeline requirements and the work undertaken is checked against works schedule for conformance with requirements and anomalies reported in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance

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ELEMENT	PERFORMANCE CRITERIA
	with requirements
	3.6 Records and drawings are updated to reflect repair, modifications and work completion records, reports as installed and documentation finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for the coordination of gas distribution pipeline repair and modifications.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G204 Distribution pipeline repair and modification B

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G 2.2.14 Cut out, repair and replace damaged nylon or PVC pipe

Evidence shall show an understanding of requirements to repair a damaged nylon pipe in a Gas Industry workplace, indicated by the following:

- Undertake procedures for disconnecting and terminating nylon or PVC Pipe
- Selection and application of various squeeze off equipment for Nylon including Hydraulic squeezers
- Undertake repair methods for nylon or PVC pipeline, trace wire and marker tape
- Demonstrate procedures for cutting out and replacing nylon or PVC pipe of various diameters and in various locations including fixed connection points.
- Demonstrate procedures for accessing inserted nylon or PVC pipe including breaking out Cast Iron conduits and cutting out Steel conduit
- Apply procedures for ensuring continuity of supply including checking of network maps, gauging, fitting of bypasses and purging.
- Undertake joining and testing of trace wire and marker tape
- Static Electricity in gas pipes

G 2.2.19 Repair damaged PE pipeline

Evidence shall show an understanding of the requirements to repair damaged PE pipe on a Gas Industry pipeline, indicated by the following:

- Identify Environmental and Safety Hazards, assess risks and implement control measures
- Dangers of working with live gas
- Undertake procedures for disconnecting and terminating PE pipe
- Selection and application of various squeeze off and stop off equipment including Hydraulic squeezers
- Undertake repair methods for PE pipeline, saddles, trace wire and marker tape
- Demonstrate procedures for cutting out and replacing PE pipe of various diameters and in various locations including fixed connection points
- Gas leak testing
- Pressure testing procedures
- Apply procedures for ensuring continuity of supply including checking of network maps, Gauging, fitting of bypasses and purging

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- Jointing methods for repair work
- Undertake joining and testing of trace wire and marker tape

G 2.2.22 Cut out, repair and replace cast iron pipeline

Evidence shall show an understanding of how to repair or replace a cast iron pipeline on a Gas Industry workplace, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Dangers of working with live gas
- Stop off equipment for cast iron
- Cutting methods for cast iron
- Undertake procedures for disconnecting and terminating cast iron pipe
- Undertake repair methods for cast iron pipeline, saddles, trace wire and marker tape
- Demonstrate procedures for cutting out and replacing cast iron pipe of various diameters and in various locations including fixed connection points
- External injection of Anaerobic sealants
- Gas leak testing
- Pressure testing procedures
- Apply procedures for ensuring continuity of supply including checking of network maps, Gauging, fitting of bypasses and purging.
- Undertake joining and testing of trace wire and marker tape
- Use of cross-bonding leads and neon testers

G 2.2.25 Cut out, repair and replace steel pipeline

Evidence shall show an understanding of the processes required for the cutting out and replacing of steel pipeline on a Gas Industry workplace (distribution) pipeline, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Dangers of working with live gas
- Purpose and function of equipment, tools and materials, including but not limited to, cutting and stopping equipment
- Demonstrate the correct use of stop off equipment and cutting equipment
- Requirements of Australian Standards and gas industry standards for working with steel pipe and fittings

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- Safety requirements and procedures for using equipment, tools and materials
- Gas leak testing
- Pressure testing procedures
- Apply procedures for ensuring continuity of supply including checking of network maps, gauging, fitting of bypasses and purging.
- Replace marker tape
- Coating types and repair
- Use of cross-bonding leads and neon testers

G 2.2.29 Cut out, repair and replace damaged copper pipe

Evidence shall show an understanding of how to repair a damaged copper pipe on a Gas Industry pipeline, indicated by the following:

- Equipment, tools and materials required for joining copper pipeline and fittings
- Purpose and function of equipment, tools and materials
- Safety requirements and procedures for cutting and joining copper pipeline including mechanical and soldered or welded joints
- Procedures for cutting and tapping copper pipeline
- Procedures for pressure testing a pipeline
- Procedures and safety requirements for joining copper pipeline to other pipeline
- Procedures for joining copper pipeline
- Use of cross-bonding leads and neon testers

G 3.2.11 Prepare for testing and inspection of pipeline system

Evidence shall show an understanding of the requirements to test and inspect Gas Industry pipeline (Distribution) systems, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Interpret and apply enterprise policies and procedures
- Interpret and apply environmental and safety regulations
- Knowledge of the properties and characteristics of gas relevant to the pipeline systems to be tested
- Knowledge of the different classification of leaks and relevant procedures associated with each class of leak

G 3.2.12 Select and use appropriate tools and equipment to inspect and test the pipeline system in accordance with procedures and legislative requirements

Evidence shall show an understanding of the requirement to

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select the appropriate tools and equipment required to undertake the testing of Gas Industry pipeline (Distribution), systems, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Interpret and apply enterprise policies and procedures
- Range of testing and inspection methods appropriate to the system under test
- Correct and appropriate use of test and inspection equipment such as:
  - Gas detectors
  - Pressure measuring and monitoring equipment
  - Snoop for leaks on flanges and fittings
  - Measuring devices
- Interpret SI units such for pressure, temperature etc.
- Procedures to ensure that supply pressure is maintained
- Procedures required to monitor gaseous atmosphere

G 3.2.13 Record and interpret test data

Evidence shall show an understanding of the requirements to record and interpret test data for Gas Industry pipeline (Distribution) systems, indicated by the following:

- Interpret SI units such for pressure, temperature etc
- Record information and test data on completion of testing/inspection procedures
- Analyse test data to identify system defects and faults
- Use test data to correctly classify leaks for prioritising repairs
- Report results to relevant third parties using a range of reporting methods (forms, reports etc)

G 3.2.14 Monitor pipeline system during repair work

Evidence shall show an understanding of the requirements to monitor pipeline system during repair work on a Gas Industry pipeline (Distribution), indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Interpret and apply enterprise policies and procedures
- Procedures to conduct gas pressure and flow monitoring
- Interpret and apply manufacturer's maintenance specifications
- Coordinate resources to prevent outages during repair work
- Monitor impact of the work on environment, people and

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equipment

G 3.2.15 Conduct repairs and make amendments or modifications as required

Evidence shall show an understanding of the requirements to conduct repairs and make amendments or modifications as necessary on a Gas Industry pipeline (Distribution) systems, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Interpret and apply enterprise policies and procedures
- Conduct repairs with appropriate tools and equipment according to established work procedures
- Comply with procedures when evaluating and implementing amendments or modifications
- Comply with procedures to assess the quality of work and ensure compliance with procedures, legislative and environmental requirements

G 3.2.16 Re-establish system and restore site

Evidence shall show an understanding of the re-establishment of the system and the restoration of the site on Gas Industry pipeline (Distribution) systems, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Interpret and apply enterprise policies and procedures
- Confirmation that repairs and modifications are complete
- Identify relevant third parties for notification purposes
- Complete work permits
- Effectively communicate results to relevant third parties

G 3.2.17 Maintain records

Evidence shall show an ability to maintain of records for the repair and modification of Gas Industry pipelines (Distribution) systems, indicated by the following:

- Interpret and apply enterprise policies and procedures
- Collate all relevant data
- Identify and complete the relevant records, drawings, documents and forms
- Store records in a secure manner consistent with enterprise policies and procedures

G 3.2.18 Obtain information relevant to pipeline repair and modification

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Evidence shall show an ability to obtain information and procedures for repairing or modifying Gas Industry pipelines (Distribution) systems, indicated by the following:

- Source relevant documentation including plans, drawings, maps and specifications
- Identify any potential issues associated with the relevant documentation like missing or incorrect information
- Assess the scope of the repair or modifications required
- Determine affects on customer supply and extent of the repair or modification
- Determine materials and equipment required

G 3.2.19 Liaise and communicate with relevant parties

Evidence shall show an understanding of liaising and communicating with relevant parties involved in repair or modification of Gas Industry pipelines (Distribution), specifically:

- Interpret and apply enterprise policies and procedures
- Identify key stakeholders
- Identify specialists that can assist in repair/modification work
- Identify responsibilities and reporting requirements of third parties
- Establish communication lines with parties that require notification of repairs/modifications

G 3.2.20 Prepare work site for repairs/modifications work

Evidence shall show an understanding of the preparation of Gas Industry (Distribution) workplaces for repairs/modifications work, indicated by the following:

- Identify environmental and safety hazards, assess risks and implement control measures
- Interpret and apply enterprise policies and procedures
- Determine strategies for maintaining supply
- Comply with procedures for locating services on the worksite
- Identify and control possible sources of ignition
- Identify communications protocols and requirements
- Prepare procedures for the coordination of site activities
- Maintain records of communications with relevant third parties

G 3.2.21 Organise required equipment, materials and persons

Evidence shall show an understanding of the requirements to organise required equipment, materials and persons for Gas

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Industry pipeline (Distribution) work activities, indicated by the following:

- Identify Environmental and Safety Hazards, assess risks and implement control measures associated with obtaining equipment and materials
- Interpret and apply enterprise policies and procedures relevant to obtaining equipment and materials
- Identify and comply with legislative requirements relevant to obtaining equipment and materials
- Locate and comply with all relevant MSDS' associated with obtaining equipment and materials
- Interpret documentation to ensure correct equipment and materials are sourced
- Coordinate the deployment of required equipment, materials and persons to a worksite

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the

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most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range

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- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
- Competency is demonstrated across the range of variables highlighted in the range of variables guideline A, B, C, D, E, F, G, H, I for the coordination of gas distribution pipeline repair and modifications.
- Group A and B must be done
- At least 3 groups must be completed from C, D, E, F, G, H
- Group I must be completed

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Interpret technical drawings and symbols Ensure emergency response procedures in place Communicate with other authorities and stakeholders Communicate schedules /coordinate to persons Carry out job safety analysis Obtain work permit Use and interpret Dial

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		Before You Dig report
B	At least 3	Excavation Trenching Shoring Stitch bore Horizontal drilling Directional drilling
C	At least 3	Nylon (polymide) pipeline laying techniques Nylon gluing Nylon stop off
D	At least 5	PE pipeline laying techniques Large diameter PE PE electro fusion PE butt fusion Saddle fusion Socket fusion PE stop off Compression couplings or flanges Connection of PE to nylon Practical application of AS3723 Installation and Maintenance of plastic pipe systems
E	At least 4	UPVC pipeline laying techniques UPVC solvent cemented joints UPVC moulded joints UPVC stop off UPVC couplings or flanges Connection of UPVC to steel

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		Practical application of AS3723 Installation and maintenance of plastic pipe systems
F	At least 2	Steel pipeline coating repair Steel pipeline coating testing (Jeeper) Steel, field joint coating
G	At least 3	Connection of PE to steel mains Steel mains welding Steel mains repair Sleeve application Clamp application Hot tap and stopple
H	At least 2	High pressure stop off — 312 Bagtube Squash off jacks Squash off pliers
I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

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- OHS policy and work procedures and instructions.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency working:

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B	Carry out work activities in a utilities industry work environment
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace

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UEGNSG104B	Comply with environmental policies and procedures
UEGNSG105B	Establish the work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the coordination of gas distribution pipeline repair and modifications.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Inspection and testing techniques (3)

Leaks (3)

Repair and maintenance equipment (3)

Repair/modification techniques (3)

Documentation/records (3)

Tools, materials and equipment

Pipeline systems

Pipeline control systems

Appropriate authorities

Appropriate person

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Distribution.

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UEGNSG207B Coordinate construction, laying and testing of gas distribution pipelines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the coordination of the construction, laying and testing of gas distribution pipelines and associated equipment. The competency standard also requires that other services are notified; communication with appropriate persons; the relevant materials, tools and equipment are used; work is undertaken observing the relevant standard operating procedures and safe working practices.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly

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License to practice **3)**

related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare to coordinate pipeline installation	1.1 Alignment of gas main and associated equipment is confirmed and location of other services verified against work schedule(s) and established procedures and confirmed if necessary by site inspection
	1.2 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3 OHS, environmental and sustainable energy policies and procedures related to the coordination of construction, laying and testing of gas distribution pipelines are obtained and confirmed for the purposes of the work performed and communicated
	1.4 Appropriate persons are consulted to ensure the work plan is coordinated and that work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5 Risk control measures for identified hazards are implemented, prioritised and monitored against the work schedule
	1.6 Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures

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ELEMENT		PERFORMANCE CRITERIA	
		1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
		1.8	Relevant persons at worksite are confirmed to be current in in First Aid and other related work procedures according to requirements
		1.9	Liaison and communication with authorised persons, authorities, clients and land-owners is completed so work can be carried out where necessary
		1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
		1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
		1.12	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2	Coordinate construction, laying and insertion of pipelines and associated	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	equipment and test pipeline for conformance to specifications	2.2	Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
		2.3	Essential Knowledge and Associated Skills for the coordination of construction, laying and testing of gas distribution pipelines are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste

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ELEMENT		PERFORMANCE CRITERIA	
			according to requirements
		2.4	Performing the coordination of construction, laying and testing of gas distribution pipelines is carried out in accordance with the work schedule and to established procedures
		2.5	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the authorised persons for directions according to established procedures
		2.6	Unplanned events in the coordination of construction, laying and testing of gas distribution pipelines is undertaken within the scope of established procedures
		2.7	Known solutions to a variety of problems are applied using acquired Essential Knowledge and Associated Skills
		2.8	Ongoing checks of work quality are undertaken in accordance with given instructions and established procedures
3	Complete the coordination of construction, laying and testing of gas distribution	3.1	Final inspection are undertaken to ensure the construction, laying and testing conforms to requirements and anomalies reported in accordance with established procedures
	pipelines	3.2	Accidents and injuries are reported in accordance with established procedures where applicable
		3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
		3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
		3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements

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ELEMENT	PERFORMANCE CRITERIA
	3.6 Work completion records, reports and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for coordinating construction, laying and testing of gas distribution pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G207B **Distribution pipeline testing**

G3.2.45 Plan and prepare coordination of pipeline installation

Evidence shall show an understanding of the requirements to plan and prepare coordination of repairs to pipelines, facilities and equipment on a Gas Industry pipeline (Distribution), indicated by the following:

- identification of the types of problems and faults that may require repair
- obtaining, interpreting and using relevant technical drawings, plans or specifications during preparation and planning of repair work
- identification of hazards (including confined spaces) and explanation of OHS, procedures and environmental requirements that require implementation prior to and during repair work
- identification of procedures, persons, equipment and processes required for the repair work and plan the coordination of resources
- required work permits
- locating and securing of emergency equipment and ensuring all personnel are familiar with emergency plans.

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G3.2.46 Secure work area and equipment prior to installation

Evidence shall show an understanding of the requirements to secure work area and equipment prior to repair on a Gas Industry pipeline (Distribution), indicated by the following:

- discuss the requirements for and use of work permits, safety plans, non-routine procedures and safety checks
- implementation and adherence to procedures, OHS and environmental requirements to ensure a safe worksite is established and maintained
- equipment for repair work is depressurised, tagged and locked out
- routine checks and documentation of facilities/equipment and overall repair process
- verification that facilities/equipment are safe for repair work to commence by ensuring that all procedures have been followed and requirements met.

G3.2.47 Coordinate construction, laying and insertion of pipelines and associated equipment

Evidence shall show an understanding of the requirements to coordinate the construction, laying and insertion of pipelines and associated equipment on a Gas Industry pipeline (Distribution), indicated by the following:

- management plans and construction and installation procedures are understood for communication to all persons affected
- procedures to monitor persons, systems, equipment and environmental conditions to ensure procedure, OHS and environmental requirements are maintained during the construction, laying and insertion of pipeline process
- coordination techniques for construction of pipeline ensuring that all procedures, OHS and environmental requirements are met
- assessment of the identification and location of pipelines requiring renewal
- verification that the required pipe laying and pipe joining techniques and supervision of procedures for compliance is met and understood
- coordination for the monitoring and installation and/or insertion of pipeline and validation of the standard to ensure it meets OHS, environmental and legislative requirements
- assessment of progress of installation/insertion to evaluate and implement required amendments or modifications and communication of changes to

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appropriate persons
- dangerous and/or emergency situations in accordance with procedures, OHS and environmental requirements.

G3.2.48 Test pipeline for conformance

Evidence shall show an understanding of the testing procedures for a Gas Industry pipeline (Distribution), for conformance, indicated by the following:

- identification of the most appropriate techniques for testing and inspecting gas pipelines
- types of faults and their associated characteristics which could be encountered during inspection and testing procedures
- selection of pipeline testing equipment and substances
- pipeline inspection and testing procedures and compliance with procedures, OHS and environmental requirements
- documentation and confirmation to test results and implement procedures to determine appropriate action
- communication of required results, findings and actions using appropriate reporting and recording systems.

G3.2.49 Conduct final inspection

Evidence shall show an understanding of the requirements to conduct final inspection procedures, indicated by the following:

- new pipeline locations are correctly recorded in accordance with procedures and legislative requirements
- site reinstatement and notification of authorities is performed correctly in relation to completion of work procedures
- all documentation is inspected in relation to pipeline construction, laying and testing to ensure correct and accurate completion for processing
- coordination of the clearing of work area of equipment, tools, materials is understood and applied in accordance with OHS and environmental requirements.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in

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EVIDENCE GUIDE

accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to **9.2)**

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demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Interpret technical drawings and symbols Ensure emergency

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		response procedures in place Communicate with other authorities and stakeholders Communicate schedules/coordinate to persons Carry out job safety analysis Obtain work permit Use and interpret Dial Before You Dig report or its equivalent
B	At least 3	Excavation Trenching Shoring Stitch bore Horizontal drilling Directional drilling
C	At least 4	Nylon (polymide) pipeline laying techniques Nylon gluing Connection of Nylon to other materials Nylon stop off UPVC pipeline laying techniques UPVC solvent cemented joints UPVC moulded joints UPVC stop off UPVC couplings or flanges Connection of UPVC to other materials Practical application of AS3723 Installation and maintenance of plastic pipe

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		systems
D	At least 5	PE pipeline laying techniques Large diameter PE PE electro fusion PE butt fusion Saddle fusion Socket fusion PE stop off Compression couplings or flanges Connection of PE to other materials Practical application of AS3723 Installation and Maintenance of plastic pipe systems and AS 2865 Safe working in confined spaces
E	At least 2	Steel pipeline coating repair Steel pipeline coating testing (Jeeper) Steel, field joint coating
F	At least 3	Connection of PE to steel mains Steel mains welding Steel mains repair Sleeve application Clamp application Hot tap and stopple
G	All	Isolate, vent and purge gas pipeline systems Operation of gas detector Operate service locator Where relevant, calculate nitrogen volume needed

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H	At least 2	High pressure stop off 312 Bagtube Squash off jacks Squash off pliers
I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in coordinating construction, laying and testing of gas distribution pipelines.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

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Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B	Carry out work activities in a utilities industry work environment
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEGNSG104B	Comply with environmental policies and procedures
UEGNSG105B	Establish the work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

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RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the coordination construction, laying and testing of gas distribution pipelines.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Other services (3)

Appropriate persons (3)

Materials (3)

Tools and equipment (3)

Safe working procedures (3)

Standard operating procedures (3)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Distribution.

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UEGNSG210B Supervise and monitor contract staff for work on distribution pipelines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the supervision and monitoring of contractors working in the field. It requires the application of skills and knowledge to provide information, guidance and direction to contractors in the conduct of their duties. It does not cover the high levels of technical expertise required to actually perform the services but focuses on the key knowledge and skills required to supervise and monitor the process from a contractor management perspective. The competency standard is applied against the procedures found under the latest version of AS 1697 Australian and New Zealand Standard.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

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Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability

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Employability Skills	**5)** Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare for supervising and monitoring contract staff	1.1 Works schedule(s), including drawings, plans, requirement, established procedures and material lists are detailed, analysed if necessary by site inspection and the extent of the preparation of the work determined for planning and coordination
	1.2 Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3 Risk control measures are identified, prioritised and evaluated against the work schedule
	1.4 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5 OHS, environmental and sustainable energy policies and procedures are obtained and confirmed for the purposes of the work performed and communicated
	1.6 Relevant work permits are obtained to access and perform work according to requirements and

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
	1.8	Contractual requirements, such as qualifications of personnel to perform the work, competency of the contractor, site induction and condition of equipment are confirmed
	1.9	Relevant persons at work site are confirmed to be current in First Aid and other related work procedures according to requirements
	1.10	Liaison and communication with authorised persons, authorities, clients and land-owners is completed so work can be carried out where necessary
	1.11	Persons participating in the work are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with established procedures
	1.12	Site is prepared according to work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.13	Road signs, barriers and warning devices are positioned in accordance with requirements
2 Monitor and supervise contractor activities.	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a

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ELEMENT	PERFORMANCE CRITERIA	
		minimum of waste according to requirements
	2.4	Contractor activity is carried out in accordance with the work schedule and to established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the authorised persons for directions according to established procedures
	2.6	Solutions to non-routine problems are identified and actioned using acquired Essential Knowledge and Associated Skills according to requirements.
	2.7	Known solutions to a variety of problems are applied using acquired Essential Knowledge and Associated Skills
	2.8	First Aid and other related work procedures are performed according to requirements and established procedures
	2.9	Ongoing checks of work quality are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved
3 Complete monitoring and supervision records.	3.1	Inspection of the contract job is checked against works schedule to determine conformance with requirements and anomalies reported in accordance with established procedures
	3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Waste materials are safely disposed of and the work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned,

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ELEMENT	PERFORMANCE CRITERIA
	checked and returned to storage in accordance with established procedures
	3.5 Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6 Data is accurately recorded and work completion records, reports as modified drawings and documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for supervising and monitoring contract staff for work on distribution pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G210B Distribution pipeline contract staff

G 2.1.1 Work in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G 2.1.4 Apply relevant OHS regulations, policies and procedures

Evidence shall show an understanding of the basic workplace health and safety legislation and how this applies to individuals in a Gas Industry workplace, indicated by the following

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- Employer's responsibilities to relevant OHS legislation
- Employee's responsibilities to OHS legislation and organisation's policies and procedures
- OHS policies and procedures at the worksite.
- Australian Standards, guidelines and codes of practice

G 2.1.5 Work safely in the gas industry by reducing risk and using correct PPE

Evidence shall show an understanding of how to work safely in the gas industry indicated by the ability to:

- Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements
- Correctly interpret gas markers
- Identify the correct PPE required for work in the Gas Industry
- Locate and comply with procedures for correctly checking, maintaining and storing PPE
- Apply the process of Hazard identification, Risk assessment and Control
- Complete Risk Assessment forms such as Work Permits and JHA’s, JSA’s, JSEA’s, SWM’s etc
- Report workplace hazards

G 2.1.6 Work safely with hazardous materials and equipment

Evidence shall show an understanding of what constitutes hazardous materials and the equipment and processes used to safely work with these indicated by the following:

- Identify hazardous materials and equipment
- Location and purpose of Material Safety Data Sheets (MSDS)
- Read, interpret and discuss MSDS
- Knowledge of methods for safe disposal of hazardous waste materials
- Read, interpret and discuss relevant manufacturer's specifications
- Use and dispose of hazardous materials and equipment safely
- Use of spill kits and PPE

G 2.1.7 Apply safe manual handling techniques in the workplace

Evidence shall show an understanding of manual handling and how to apply this knowledge to handling heavy and awkward objects in a Gas Industry workplace, specifically:

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- Principles for managing manual handling
- Characteristics and types of safe manual handling
- Safe manual handling techniques
- Manual handling and risk management

G 2.1.9 Respond to emergency and accident situations

Evidence shall show knowledge and skills in dealing with emergency or accident situations at a Gas Industry workplace, indicated by the following:

- Situations of accidents and emergency
- Comply with procedures for accidents and incidents
- Correct use of emergency equipment and procedures for a fire
- Correct use of breathing apparatus
- Correct use of gas detectors/oxygen monitoring devices
- Correct use of emergency equipment and procedures for a gas leak or vapour emission
- Report emergencies and accidents

G 2.1.14 Read and interpret Gas Industry documents

Evidence shall show an ability to read and interpret Gas Industry documents indicated by the following:

- Understand and use signs, symbols terminology and legends as used in gas industry procedures and documents
- Identify, locate and implement gas industry standards, policies and procedures
- Interpret and read basic drawings and diagrams

G 2.1.15 Complete workplace forms, and reports

Evidence shall show an ability to complete routine Gas Industry forms, memos and reports either written or electronic, indicated by the following:

- Identify, locate, interpret and use workplace forms, and reports
- Enter the required information accurately on gas industry forms and reports

G 2.1.16 Identify requirements of work activity

Evidence shall show ability to:

- Clarify expected outcomes of a work activity in a Gas Industry workplace
- Receive, clarify and respond to verbal work instructions for work activity

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- Interpret and discuss an organisation's policies, quality requirements and specifications for work activity

G 2.1.17 Apply basic planning skills

Evidence shall show a demonstrated ability to apply basic planning skills in a Gas Industry workplace, indicated by the following:

- Develop checklists of tasks
- Prioritise tasks
- Identify resources required to complete tasks safely and efficiently
- Identify resource or scheduling conflicts and apply solutions
- Develop time lines to complete tasks

G 2.1.19 Review work activities

Evidence shall show an ability to review work activities undertaken in a Gas Industry workplace, indicated by the following:

- Check work activities against a work plan
- Seek feedback on the outcome of work activities with appropriate persons
- Report outcomes of work activities in writing or orally according to enterprise procedures

G 2.1.21 Problem solving

Evidence shall show an understanding of the requirements to undertake basic problem solving in a Gas Industry workplace, indicated by the following:

- Demonstrate problem solving and diagnostics methodology
- Identify possible solutions
- Recommend probable solutions and
- Apply basic problem solving techniques

G 2.1.22 Operate in confined spaces

Evidence shall show an understanding of the requirements to recognise and operate in confined spaces in a Gas Industry workplace, indicated by the following:

- Knowledge of the requirements of Legislation, Regulations, Australian Standards and enterprise specific procedures for safe working in confined spaces
- Ability to recognise what a confined space is and the entry safety requirements
- Ability to understand and comply with manufacturers’

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guidelines for the safe use of PPE used in confined spaces
- Understand how and when to use gas detectors for confined spaces entry
- Understand how and when to use breathing apparatus and rescue and recovery equipment

Note: A confined spaces entry ticket would satisfy and exceed the requirements of this EKAS clause

G 2.1.25 Protect the environment

Evidence shall show an understanding and ability to perform work in the gas industry in a manner that protects the environment indicated by the following:

- Understanding of the relevant Commonwealth/State/Territory environmental legislation, regulations and codes of practice
- Understanding of employee's and employer's responsibilities to relevant environmental legislation, regulations and codes
  - Understanding and compliance with enterprise procedures for flora control
  - erosion control
  - fauna control
  - the protection of indigenous and cultural heritage sites
- Understanding the role of regulatory bodies in monitoring environmental activities, risk and incident compliance
- Understanding community expectations for protecting the environment
- Correct use of environment protection procedures, records, inspections and incident reporting
- Identifying environmental hazards
- Assessing environmental risks
- Implementing environmental control measures
- Ability to respond to workplace environmental incidents

Note: Environmental damage can be caused by chemicals, oil, water contamination, carcinogenic agents, gases, dusts, waste contamination and noise

G 2.1.26 Communicate in the workplace

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Evidence shall show an understanding and ability to communicate effectively in a Gas Industry work team indicated by the following:

- Effective use oral and written communications methods to achieve work related outcomes and solutions.
- Effectively receive, interpret and respond to workplace information and instructions
- Effectively convey and report work related information to fellow workers and customers
- Interact with fellow workers in a socially and culturally appropriate manner

G 2.2.32 Comply with requirements for excavating and reinstating site

Evidence shall show an understanding of the requirements for preparing, conducting and completing an excavation indicated by the following:

- Identifying plans, codes, standards and drawings relevant to specific worksites
- Reading and interpreting relevant plans, codes, standards and drawings
- Regulatory requirements and procedures for excavating trenches and reinstating sites
- Apply shoring or benching requirements
- Notification of appropriate authorities and requirements for temporary or permanent restorations

G 2.2.33 Locate utilities and services

Evidence shall show an understanding and an ability to locate services, indicated by the following:

- Identification of relevant authorities or enterprises to contact regarding the location of other utilities services (gas, water, electricity, telecommunication, sewerage and stormwater)
- Read and interpret plans and drawings to identify the location of utilities and services
- Identification of utilities and services conduits and cables
- Correct use of electronic and manual service locators
- Apply hand excavation as required for the purposes of locating utilities and services

G 2.2.46 Use tools, plant and equipment relevant to the gas industry

Evidence shall show an ability to safely use tools, plant and equipment relevant to the Gas Industry, indicated by the following:

- Identify the various types, uses and application of tools,

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plant and equipment used in the Gas Industry
- Understand and comply with manufacturer's guidelines for the correct use of tools, plant and equipment used in the Gas Industry
- Understand and comply with the enterprises procedures for the correct use of tools, plant and equipment used in the Gas Industry
- Understand and comply with all OHS requirements for the correct use of tools, plant and equipment used in the Gas Industry
- Comply with power safety rules when using electrically operated tools, plant and equipment
- Identify site hazards, assess risks and implement control measures when using tools, plant and equipment used in the Gas Industry
- Comply with good manual handling techniques when lifting, moving or storing tools, plant and equipment

Tools and equipment may include but not limited to drills, shovels, hammers, knives, saws, hand tools, small generator sets, air compressors and hoses, pneumatic and/or electric hammers, rollers and compactors, concrete and ceramic cutters, boring equipment, trenching equipment, etc.

G 2.2.48 Prepare an excavation site

Evidence shall show an understanding and ability to prepare the site for excavation on a gas industry workplace, indicated by the following:

- Use of Dial Before you dig services
- Preparation of traffic management plans
- Identify Environmental and Safety Hazards, assess risks and implement control measures
- Communicating with third parties, colleagues and customers regarding the excavation site
- Reading and interpreting job specifications and standard operating procedures
- Grades and depth required for excavation of trenches for gas pipelines
- Techniques for marking out trench location

G 3.1.2 Work independently in a Gas Industry environment

Evidence shall show an understanding of working independently in a Gas Industry environment, indicated by the following:

- understanding of how to work autonomously or under limited/remote supervision.

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G 3.2.7 Prepare reports

Evidence shall show an understanding of the preparation of reports applicable to the commissioning and decommissioning of Gas Industry pipelines (Distribution), indicated by the following:

- Apply procedures and legislative requirements for maintaining appropriate reporting and recording systems
- Complete job records and process information to appropriate/relevant department
- Recorded non-conformances and incidents including customer outages in accordance with procedures and legislative requirements.

G 4.1.1 Operate and supervise in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies

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- property/land owners (including traditional land owners) and tenants
- emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

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EVIDENCE GUIDE

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Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

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Critical aspects of evidence required to demonstrate competency in this unit

9.2)

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- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**

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A	All	Have a working knowledge of the relevant sections of AS1697 Interpret technical drawings and symbols Ensure emergency response procedures in place Communicate schedules/coordinate to persons Carry out job safety analysis and inductions Obtain work permit Apply basic planning skills Work utilising relevant OHS and environmental legislation, regulations, codes of practice, policies and procedures. Maintain a safe clean workplace Contractor management Communicate effectively in the workplace Problem solving skills Maintain documentation Planning and organising
B	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific **9.3)**

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resources for assessment

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in, Context of and specific resources for assessment, evidence should show demonstrated competency of supervising and monitoring contract staff for work on distribution pipelines.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with **9.5)**

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other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B	Carry out work activities in a utilities industry work environment
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEGNSG104B	Comply with environmental policies and procedures
UEGNSG105B	Establish the work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to supervising and monitoring contract staff. The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Tools and equipment (4)

Maps and drawings

Established procedures

PPE and First Aid equipment

Resources

Records/documentation

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RANGE STATEMENT

Safe working procedures

Operational

Relevant persons

Types of faults

Traffic control

Facility

Assessing risk

Competency

Gas/petrochemical liquid characteristics

Interpersonal skills

Permit to work

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Distribution.

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UEGNSG212B Construct, lay and connect a gas distribution service to a plastic main

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers excavated bed preparation and the construction, laying and connection of a gas service to a plastic main. This includes the installation of the meter to service riser, subject to local regulatory requirements

It encompasses the use of relevant tools and equipment, working safely using standard operating procedures, complying with relevant legislative, standard and code requirements, and completing necessary documentation.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe work site where the construction and laying of a gas service and connection to a plastic main occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

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Prerequisite Unit(s) **4)**

UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to construct and lay a service to a plastic main	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to construct and lay gas services are identified, obtained and checked for operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.8	Materials, plans, diagrams, drawings and resources required to construct and lay gas services are confirmed, scheduled and obtained in accordance with established procedures
	1.9	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.

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ELEMENT	PERFORMANCE CRITERIA	
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out construction and laying of a service to a plastic main	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
	2.4	Excavation is prepared for laying of pipe according to appropriate standards and procedures
	2.5	Construction and laying of gas services are conducted according to appropriate standards and procedures
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.9	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete the work and relevant	3.1	WHS/OHS risk control work completion measures and procedures are followed.

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ELEMENT	PERFORMANCE CRITERIA	
documentation		
	3.2	Appropriate persons are notified of completion of the work according to established procedures.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.4	Work site is tidied and made safe in accordance with established procedures
	3.5	Work completion documentation is completed and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work activities in a utilities industry work environment. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G212B Gas distribution service to a plastic main

Evidence shall show an understanding of constructing, laying and connecting a gas distribution service to a plastic main in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas service pipelines

- types and characteristics
- pipe sizes
- fittings
- accessories
- material specifications

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- applications
- handling and storage
- advantages and disadvantages
- MSDS/SDS

T2. Plastic gas main pipelines

- Types and characteristics
- pipe sizes
- fittings
- accessories
- material specifications
- applications

T3. Relevant Australian Standards

T4. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas
- MSDS/SDS and handling of Solvents and jointing materials

T5. Cutting, tapping and joining plastic mains pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T6. Transition fittings and adaptors to other piping materials

- types
- selection
- Adapting risers to installation requirements, bending and cutting to fit above ground requirements

T7. Bedding requirements for service pipelines

- trench width and depth
- required coverage depth in various locations
- obstacles affecting minimum depth of cover for pipeline
- solutions for dealing with obstacles affecting the depth of cover including transitioning to other approved materials and applying protection.
- pipeline support
- backfilling requirements

T8. Installation of service pipelines

- requirements
- procedures
- trace wire
- marker tape

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T9. Termination and testing of service pipeline

- requirements
- procedures

T10. Static Electricity in plastic gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries

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risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling

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employment

- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Construct and lay single point gas services and connection to a plastic main in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

    A Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.

    B Identifying the plant and equipment and their safe operating parameters/requirements

    C Cutting, joining, laying, covering and connecting gas distribution services pipelines in accordance with requirements

    D Isolating, venting, purging and testing for soundness and leaks, commissioning and making safe gas services

    E Completing required documentation and reporting.

    F Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials

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to undertake actual work as prescribed by this Unit.

- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Knowledge and Associated Skills described in this unit.

Concurrent assessment and **9.5)**

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relationship with other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the utilities industry

Range Statement

RANGE STATEMENT

10) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Unit shall/may be demonstrated in relation to preparing an excavation bed, constructing and laying of a gas service and connection to a plastic main. This includes the installation of the meter to service riser.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services (2)
- Appropriate persons (2)
- Materials (2)
- Tools and equipment (2)
- Safe working procedures (2)
- Legislative requirements (2)
- Standards

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Unit Sector(s)

Gas industry

Competency Field

Competency Field **11)**

Gas Distribution discipline.

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UEGNSG213B Construct, lay and connect a gas distribution service to a steel main

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers excavated bed preparation and the construction, laying and connection of a gas service to a steel main. This includes the installation of the meter to service riser, subject to local regulatory requirements.

It encompasses the use of relevant tools and equipment, working safely using standard operating procedures, complying with relevant legislative, standard and code requirements and completing necessary documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where the construction and laying of a gas service and connection to a steel main occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract

Licensing/Regulatory Information

License to practice **3)**

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License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and

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Prerequisite Unit(s) **4)**

	procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to construct and lay a service to a steel main	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to construct and lay gas services are identified, obtained and checked for operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.8	Materials, plans, diagrams, drawings and resources required to construct and lay gas services are confirmed, scheduled and obtained in accordance with established procedures
	1.9	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.

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ELEMENT	PERFORMANCE CRITERIA	
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out construction and laying of a service to a steel main	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
	2.4	Excavation is prepared for laying of pipe according to appropriate standards and procedures
	2.5	Construction and laying of gas services are conducted according to appropriate standards and procedures
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.9	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete the work and relevant	3.1	WHS/OHS risk control work completion measures and procedures are followed.

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ELEMENT	PERFORMANCE CRITERIA	
documentation		
	3.2	Appropriate persons are notified of completion of the work according to established procedures.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.4	Work site is tidied and made safe in accordance with established procedures
	3.5	Work completion documentation is completed and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work activities in a utilities industry work environment. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G212B Gas distribution service to a steel main

Evidence shall show an understanding of constructing, laying and connecting a gas distribution service to a steel main in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas service pipelines

- types and characteristics
- pipe sizes
- fittings
- accessories
- material specifications

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- applications
- handling and storage
- advantages and disadvantages
- MSDS/SDS

T2. Steel gas main pipelines

- Types and characteristics
- pipe sizes
- fittings
- accessories
- material specifications
- applications

T3. Relevant Australian Standards

T4. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas
- MSDS/SDS and handling of Solvents and jointing materials

T5. Cutting, tapping and joining steel mains pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T6. Transition fittings and adaptors to other piping materials

- types
- selection
- Adapting risers to installation requirements, bending and cutting to fit above ground requirements

T7. Bedding requirements for service pipelines

- trench width and depth
- required coverage depth in various locations
- obstacles affecting minimum depth of cover for pipeline
- solutions for dealing with obstacles affecting the depth of cover including transitioning to other approved materials and applying protection.
- pipeline support
- backfilling requirements

T8. Installation and testing of service pipelines

- requirements
- procedures
- trace wire
- marker tape

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T9. Termination of service pipeline

- requirements
- procedures

T10. Static Electricity in steel gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries

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risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

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- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Construct and lay gas services and connection to a steel main in accordance with relevant legislation, code, regulations and procedures as described as described in 9.) Range Statement and including:
    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.
    B. Identifying the plant and equipment and their safe operating parameters/requirements
    C. Cutting, joining, laying, covering and connecting gas distribution services pipelines in accordance with requirements
    D. Isolating, venting, purging and testing for soundness and leaks, commissioning and making safe gas services
    E. Completing required documentation and reporting.
    F. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.

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- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements
- Appropriate work environment, equipment and tools.

steel

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment

8.4)

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Knowledge and Associated Skills described in this unit.

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Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the utilities industry

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Unit shall/may be demonstrated in relation to preparing an excavation bed, constructing and laying of a gas service and connection to a steel main. This includes the installation of the meter to service riser.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements
- Standards

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Unit Sector(s)

Gas industry

Competency Field

Competency Field **11)**

Gas Distribution discipline.

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UEGNSG216A Commission or decommission gas distribution pipelines

Modification History

This unit is a revised version of the UEG11 unit UEGNSG203B Commission or decommission gas distribution pipelines

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers the commissioning, decommissioning and re-commissioning of gas distribution pipelines in accordance with relevant legislation, standards, codes and established procedures.

It encompasses the use of relevant tools, equipment and procedures; pipeline systems; pipeline control systems; testing; and liaison with appropriate authorities

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe work site where Gas Industry operations occur subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate

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Prerequisite Unit(s) **4)**

	escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) ***Elements describe the essential outcomes of a competency standard unit***

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to commission/decommission gas distribution pipelines	1.1 WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2 Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule.
	1.3 WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4 Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes in accordance with established procedures
	1.5 Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented, and monitored according to established procedures.
	1.6 Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.7 Resources including personnel, equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled and obtained and checked for operation and safety
	1.8 Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.
	1.11	Pipeline in check for readiness (cleaned, pigged, bypassed, etc.) for commissioning/ decommissioning
	1.12	Site preparations, safety plan and the work schedule are confirmed in accordance with established procedures
	1.13	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed in accordance with established procedures
	1.14	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2 Commission/decommission gas distribution pipelines	2.1	WHS/OHS and risk control measures and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and requirements.
	2.4	Pipeline purging/flaring is undertaken according to procedures
	2.5	Commissioning/decommissioning of gas distribution pipelines is carried out efficiently, to the required standard without waste of materials

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ELEMENT	PERFORMANCE CRITERIA	
		or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6	Gas is tested for compliance with pressure, concentration and odourant level requirements
	2.7	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed
	2.9	Routine quality Reports and ongoing checks of work quality are carried out undertaken in accordance with work given instructions and established procedures
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed Tools and equipment appropriate to the testing requirements are selected and work undertaken is checked against works schedule for conformance with requirements and anomalies reported in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and securely stored. returned to storage in accordance with established procedures
	3.5	Relevant work permits are signed off and equipment is returned to service in accordance with requirements
	3.6	Appropriate persons are notified of work

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ELEMENT	PERFORMANCE CRITERIA	
		completion according to established procedures
	3.7	Final inspections are undertaken and work completion documentation records, reports and information are finalised and processed and is completed accurately and provided to appropriate persons notified in accordance with established procedures

Required Skills and Knowledge

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the commissioning/decommissioning of gas distribution pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the Required Skills and Knowledge required is provided below. It forms an integral part of this unit.

KS01-G216A Distribution pipeline commissioning and decommissioning

T1. Relevant legislation, standards, codes and established procedures.

T2. Site preparation

- identify equipment, pipes, fittings, purge substances
- apply purge volume and time tables and charts

T3. Environmental and safety hazards

- risks and control measures
- site emergency procedures

T4. Required documentation and communication

- notify affected customers
- decommissioning
- commissioning/recommissioning
- non-conformances and incidents reports including customer outages

T5. Decommissioning requirements, equipment, tools and procedures

- bringing/taking pipeline system on/off line
- effect on distribution system
- fitting bypass apparatus ensuring continuity of supply
- stopping off and isolation of pipelines using internal and external stop off

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equipment

- monitoring of system pressure at appropriate locations depending on network design and operating conditions
- regulating and maintaining system pressures
- test and verify

T6. Commissioning/Recommissioning requirements, equipment, tools and procedures

- checking pipework is ready (tested, pigged, etc.)
- purging the pipe system using a variety of media and testing procedures
- testing and sealing of pipelines,
- odour level requirements
- effect on distribution system
- monitoring of system pressure at appropriate locations depending on network design and operating conditions
- regulating and maintaining system pressures
- equipment faults
- test and verify

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

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Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control

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measures as specified in the Performance Criteria and range

- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - De-commission, commission and recommission gas distribution pipelines as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. WHS/OWS procedures	All	• Interpret technical drawings and symbols • Ensure emergency response procedures in place • Communicate with other authorities and stakeholders • Communicate schedules/coordinate to persons • Carry out job safety analysis • Obtain work permit if required

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B. Work Procedures	All	• Isolate, vent and purge gas pipeline systems • AS2865/relevant confined spaces code of practice • Operation of gas detector • Operate service locator • Calculate nitrogen volume needed
C. Isolation Methods	At least 2	• High pressure stop off • 312 • Bagtube • Squash off jacks/pliers • Hot tap and stopple
D. Unplanned event	At least one occasion	• Deal with an unplanned event by drawing on required knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

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These should be part of the formal learning/assessment environment.

Assessment of this competency must be undertaken in an actual workplace. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness

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BSBFLM303C Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) ***This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.***

This unit shall be demonstrated in relation to commissioning/decommissioning and re-commissioning distribution pipelines in accordance with relevant legislation, standards, codes and established procedures. This includes carrying out job safety analysis; obtaining the required work permit/authorisation; isolating, venting and purge gas pipeline systems; and using gas detectors.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons
- Tools, Materials and Equipment
- Appropriate authorities
- Pipeline systems
- Documentation

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Gas Distribution.

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UEGNSG217A Launch and recover PIGs in a gas distribution pipeline

Modification History

This unit is a revised version of the UEG11 unit UEGNSG205B Launch and recover PIG in a gas distribution pipeline

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the assembly, launch and recovery of PIGs (Pipeline Inspection Gauge) in gas distribution pipelines to ensure the pipeline is clean and dry with no obstructions prior to commissioning in accordance with relevant legislation, standards, codes and established procedures.

It also encompasses inspecting and using various types of PIGs and PIG traps to manufacturers' requirements and reporting outcomes.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe gas industry work site where Pigging operations occur. It is subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

Licence to Practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a

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Prerequisite Unit(s) **4)**

	utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) ***Elements describe the essential outcomes of a competency standard unit***

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare and plan for pigging gas distribution pipelines	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS, environmental and sustainable energy policies and procedures are obtained and confirmed
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritized, implemented, and monitored according to established procedures.
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is obtained and confirmed with relevant persons to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.6	Resources including personnel, equipment, tools and personal protective equipment required for the work are identified, scheduled and obtained and checked for operation and safety
	1.7	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.8	Relevant responsibilities associated with First Aid and other related work procedures for an incident are checked and confirmed
	1.9	Liaison and communication with authorised persons, authorities, clients and land-owners is completed where necessary,
	1.10	Site preparation, safety plan and the work schedule are confirmed in accordance with

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures.
	1.11	Site PIG and pipeline is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures Note: This includes setting up of PIG launcher and receiver for new or decommissioned pipelines
	1.12	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed in accordance with established procedures
	1.13	Road signs, barriers and warning devices are positioned in accordance with requirements
2 Launch, and recover distribution pipeline PIG	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are conducted safely according to given instructions and requirements
	2.4	The launch and recovery of gas distribution pipeline PIG is carried out in accordance with the work schedule and to established procedures
	2.5	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6	Data/results from distribution pipeline pigging operations is gathered/retrieved and analysed to determine internal pipeline conditions in

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ELEMENT	PERFORMANCE CRITERIA	
		accordance with established procedures
	2.7	Testing and inspecting of the pipeline and pigging equipment is conducted in accordance with requirements and established procedures
	2.8	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.9	Procedures for referring non-routine events to the immediate authorized persons for direction are followed.
	2.10	Routine quality checks are carried out in accordance with work instructions
3 Re-establish distribution pipeline to operational conditions and notify of completion of work	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Inspection of the received PIG is undertaken to determine the wear sustained to the PIG, material is checked against works schedule for conformance with requirements and anomalies reported in accordance with established procedures
	3.3	Waste materials are safely disposed of and the work site is rehabilitated, cleaned up and made safe in accordance with established procedures
	3.4	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.5	Appropriate persons are notified of work completion according to established procedures
	3.6	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.7	Data is accurately recorded and work completion documentation is completed accurately and provided to the appropriate persons in

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ELEMENT	PERFORMANCE CRITERIA
	accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the launching and recovering of a pig in a gas distribution pipeline.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the Required Skills and Knowledge required is provided below. It forms an integral part of this unit.

KS01-G217A PIG launch and recovery

Evidence shall show an understanding of the assembly, launch and recovery of PIGs in gas distribution pipelines to ensure the pipeline is clean and dry with no obstructions prior to commissioning.in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Pipeline preparation

- Types of pipeline materials including steel, plastic, etc.
- New pipelines
- Traps launchers and receivers installed
- Water and waste disposal requirements
- Directional gates/bars installation
- PIG pushing agent (water or air) requirements
- Pipeline Pigging sequence
- Additional preparation for de-commissioned pipelines
- Purging
- De-scaling

T2. Documentation and communication for Pigging

T3. Types of PIGs and applications

T4. OH & S and environmental requirements for using PIGs

- Risk assessment
- Hazards including high water and air pressure/velocity
- Hazardous and flammable materials

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- Noise

T5. Pigging a main pipeline

- Insertion
- Monitoring and communication
- Checking the cleanliness/dryness of the pipe
- Capture
- Traps
- Dangers
- Waste disposal

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place,

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access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range

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- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Launch and recover PIGs in a gas distribution pipeline as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Preparation procedures	All	• Interpret technical drawings and symbols • Ensure emergency response procedures in place • Communicate with other authorities and stakeholders • Carry out job safety analysis • Obtain work permit if required
B. Pigging procedures	All	• Prepare pig trap for launch • Connections to compressors • Prepare trap for receiving

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		• Determine volume of water /compressor requirements from chart/table • Install disc pig • Install foam pig • Carry out pigging operation • Recover pig
C. Unplanned event	At least one occasion	Apply procedures/ protocols to deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items For example: identifying stuck or lost pigs, procedures for location/clearing

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

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These should be part of the formal learning/assessment environment

Assessment of this competency must be undertaken in an actual workplace. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

9) ***This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.***

This unit shall be demonstrated in relation to the launch and recovery of PIGs in new or decommissioned gas distribution main pipelines. This includes the following activities:

- Prepare pig trap for launch
- Connections to compressors
- Prepare trap for receiving
- Determine volume of water /compressor requirements from chart/table needed
- Install disc pig
- Carry out pigging operation
- Install foam pig
- Carry out pigging operation
- Recover pig
- Pressure test pipeline

Note: The de-commissioning is covered by UEGNSG203B.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Equipment

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Distribution.

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UEGNSG218A Carry out surveillance on gas distribution assets

Modification History

This unit is a revised version of the UEG11 unit UEGNSG208B Gas distribution pipeline surveillance

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers carrying out surveillance on gas distribution assets in accordance with relevant legislation, standards, codes and established procedures.

It encompasses the areas to be monitored for security and condition; third party areas; system's pipe work; structures; fittings; equipment; organisational and statutory requirements and recording and reporting.

Note: Aerial surveillance is not covered by this unit, but UEGNSG315B

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas distribution assets. It is subject to all Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to carry out surveillance on gas distribution assets	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the

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ELEMENT	PERFORMANCE CRITERIA	
		work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are obtained and confirmed.
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures and surveillance KPIs
	1.5	Hazards are identified, WHS/OHS risks are assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Scope of responsibility under the relevant work authorisation, permit and/or relevant notification is received and confirmed with relevant persons according to established procedures.
	1.7	Resources including plant, equipment, tools and personal protective equipment required for gas distribution pipeline surveillance work are identified, obtained and checked for correct operation and safety.
	1.8	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.8	Liaison and communication issues with authorised persons, authorities and clients are resolved where necessary
	1.9	Persons participating in the work are fully briefed and respective responsibilities confirmed in accordance with established procedures
	1.10	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out surveillance on gas distribution assets	2.1	WHS/OHS risk control measures, schedule of work and standard operation procedures for carrying out the work are followed

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ELEMENT	PERFORMANCE CRITERIA	
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Dealings with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.4	The work carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles
	2.5	Leakages and damaged assets and fittings are recorded in accordance with the work schedule and established procedures
	2.6	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	System breaches, faults, non-routine events and the operational condition of the network are identified and reported according to established procedures.
	2.8	The key issues are identified and required solutions/options are developed, communicated and implemented according to established procedures.
	2.9	Routine quality checks are carried out in accordance with work instructions

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ELEMENT	PERFORMANCE CRITERIA	
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work area is tidied and made safe according to established procedures
	3.3	Tools and equipment are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of the work completion, non-conformances and proposed solutions/options in accordance with r established procedures
	3.5	Surveillance completion documentation is completed accurately and provided to the appropriate personnel in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the gas distribution pipeline surveillance investigation of billing exceptions/conditions.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge required is provided below. It forms an integral part of this unit.

KS01-G218A Gas assets surveillance

Evidence shall show an understanding of carrying out surveillance on gas distribution assets in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. WHS/OHS and emergency procedures and environmental, cultural and heritage requirements in relation to pipeline surveillance

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REQUIRED SKILLS AND KNOWLEDGE

- flora, fauna, working outside

T2. Documentation and communication relevant to pipeline surveillance

T3. Land holder engagement

T4. Information gathering techniques

T5. Pipeline risks managed through surveillance

T6. Signage

T7. Third party activities

- Authorities to stop 3rd party activities.

T8. Easements and access rights

T9. Types of assets

- Pipes and other fittings that need monitoring, i.e. valves, CPS equipment etc.

T10. Variation in surface condition, vegetation or fencing etc.

T11. Impediments to access along easements'

T12. Development encroachment (clearances)

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

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Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

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- Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carry out surveillance on gas distribution assets as described in 9.) Range Statement and including:

Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A Preparation procedures	All	• Operation of Dial Before You Dig services and how it applies to working or its equivalent near gas assets • Liaison with affected landowners and relevance of property visits • Deteriorating conditions, i.e. visibility, warning signage
B	All	• Different types of

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Surveillance procedures		surveillance, i.e. vehicle, foot • Surveillance techniques • Identification of leaks, damaged assets, pipes and fittings and the recording of these in accordance with established procedures • Identifying non-conformances per company surveillance schedules • Recording information
C Unplanned events	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment

8.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

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Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG132A	Carry out work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to carrying out surveillance on gas distribution assets in accordance with relevant legislation, standards, codes and established procedures. This will include:

- Different types of surveillance, i.e. vehicle, foot etc.
- Liaison with affected landowners and relevance of properties
- Identification and recording non-conformances per company surveillance schedules for example leaks, pressure/flow, damaged assets, pipes and fittings

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section.

- Areas to be monitored
- Inspection of areas
- System's pipe work
- Structures
- Fittings

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RANGE STATEMENT

- Organisational and statutory requirements
- Recording and reporting

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Distribution.

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UEGNSG219A Conduct excavations in the utilities industry

Modification History

This unit is a revised version of the UEG11 unit UEGNSG215A Carry out transmission pipeline construction work activities

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers excavating in the utilities industry in accordance with relevant legislation, standards, codes and established procedures.

This encompasses the preparation and planning, the actual excavation and back filling. Planning includes Dial Before you Dig, site preparation and traffic control.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where utilities industry excavation operations occur, which includes the gas industry, electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is an AQF 2 competency and is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti- discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG004A	Locate, prove and protect utility assets
UEGNSG005A	Prepare to work in the Australian gas industry

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) **Elements describe the essential outcomes of a competency standard unit**	**Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.**

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to conduct excavation work	1.1	WHS/OHS and environmental measures for the site are identified received and confirmed
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures for the work are received and confirmed
	1.4	Hazards are identified and reported to the supervisor to assess the risks and implement control measures according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, tools and personal protective equipment required for the work are identified, obtained and checked for correct operation and safety.
	1.7	Materials, plans, diagrams, drawings and resources required for work are confirmed and obtained in accordance with established procedures
	1.8	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed.
	1.9	Client issues are referred to appropriate persons in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.10	Location of other services, site preparation and the work schedule are confirmed in accordance with established procedures.
	1.11	Traffic management signs, barriers and warning devices are confirmed as positioned in accordance with requirements and traffic management plans
2 Conduct excavation work	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, plant and equipment are selected and used safely
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, use of power tools equipment, techniques and practices are conducted in accordance with given instructions and requirements
	2.4	Excavation work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.5	WHS/OHS risks incidents and non-routine events are reported to the immediate authorised persons for directions according to established procedures
	2.6	Routine quality and safety checks are carried out in accordance with established procedures
3 Complete excavation work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Backfilling is performed, the work site is rehabilitated, tidied made safe and markers are installed or re-instated in accordance with the work schedule and established procedures
	3.3	Tools, plant, equipment and any surplus

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ELEMENT	PERFORMANCE CRITERIA	
		resources and materials are cleaned, checked and securely stored. .
	3.4	Appropriate persons are notified of the completion of the work in accordance with established procedures
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for used for underground utilities services and to carry out excavation work.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the Required Skills and Knowledge required is provided below. It forms an integral part of this unit.

KS01-G219A Excavation of trenches and manholes

Evidence shall show an understanding of conducting excavations in the utilities gas industry in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, regulations, codes, policies and forms

T2. Enterprise procedures, plans and drawings

T3. Overview of relevant Safety and Environmental hazards and mitigation measures

- Hazards and Field Risk Assessments
- Electrical, gases, toxins and fumes
- Security and fall prevention
- Prevention of trench collapse
- Confined spaces awareness
- Traffic hazards
- Emergency control measures

T4. Excavation process activities and work designs

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REQUIRED SKILLS AND KNOWLEDGE

- Excavation types, steps, approval, documentation and maps
- Tools, materials and equipment for preparing the site, excavating trenches and reinstating the site
- Working in proximity to other assets
- Clearances and separations
- Spotter/competent observer requirements

T5. Excavation and shoring techniques to suit varying conditions (surface types, soil types, weather, traffic, time of day, location)

- manual excavation
- mechanical excavation
- shared trenching

T6. Basic overview of boring, drilling and non-invasive excavation machines

T7. Pipe padding/bedding, compaction, backfilling and consolidations

T8. Trench and site restoration and reinstatement techniques

- Ground surface level finishes
- Asset markers and signs

T9. Temporary or permanent restorations

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is

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recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

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- Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Conducting excavations in the utilities gas industry as described in the 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Safety resources	At least 4	• Alignment sheets, maps, technical drawings and symbols • Service locators • Gas detectors • Safety lighting • Fire fighting equipment
B. Excavation equipment/ tools	At least 4	• Small generator sets • Air Compressors and hoses • Pneumatic hammers • Rollers and compactors • Hand held concrete and ceramic cutters

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C. Preparatory procedures	At least 4	• Utilise plans, drawings and maps • Utilise Dial Before You Dig information • Obtain procedures and/or work instructions • Correctly interpret and follow instructions • Conduct basic risk assessment • Utilise and participate in preparation of safe work method statement or JSA • Work in accordance with work permits/authorisations as necessary
D. Excavation procedures	At least 5	• Perform service location in the area • Check all materials and equipment • Identify and monitor all possible environmental hazards • Utilise control measures for identified hazards • Correct use of PPE appropriate to the Gas Industry • Carry out excavation • Perform machinery daily log checks and verify operator qualifications
E. Traffic control procedures	At least 3	• Traffic control management • Erect barricades • Layout warning and safety signs • Identify muster point where appropriate • Complete permit, if required

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F Unplanned events	At least one occasion	Respond to an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

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Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) **This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.**

This unit must be demonstrated in relation to excavations in the utilities industry in accordance with relevant legislation, standards, codes and established procedures autonomously on at least two occasions. This includes the preparation, planning,

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RANGE STATEMENT

excavation and back filling.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Legislation
- Inspection
- Hand tools
- Power tools
- Plant and equipment
- Personal Protective Equipment
- WHS/OHS requirements
- Types of drawings
- Key features of site plans
- Key features of plans and elevations
- Types of structures
- Services
- Types of details
- Environmental features
- Orientation of the site
- Excavation tools
- Excavation
- Surface reinstatements
- Backfill

Unit Sector(s)

Utilities Industry

Competency Field

Competency Field **11)**

Transmission and Distribution.

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UEGNSG220A Construct and lay Polyethylene gas distribution mains

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers excavated bed preparation and the construction and laying of Polyethylene gas distribution mains, including the installation of the meter connections to the service riser.

It encompasses the use of relevant tools and equipment, working safely using standard operating procedures, complying with relevant legislative, standard and code requirements and completing necessary documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where gas distribution pipeline operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/

water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Prerequisite Unit(s) **4)**

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit* *Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the*

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Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to construct and lay Polyethylene gas distribution mains	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements, including alignment of main and services and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures including keeping emergency exits clear.
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed according to requirements and established procedures
	1.6	Equipment, tools and personal protective equipment needed to carry out the work are identified, obtained and checked for correct operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved

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ELEMENT	PERFORMANCE CRITERIA	
	1.8	Materials, plans, diagrams, drawings and resources required to construct and lay PE gas distribution mains are confirmed, scheduled and obtained in accordance with established procedures
	1.9	Relevant responsibilities associated with safety and emergency procedures for an incident are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures
	1.12	Road signs, barriers and warning devices are positioned in accordance with given instructions and requirements including traffic management plans
2 Construct and lay Polyethylene gas distribution mains	2.1	WHS/OHS and control measures schedule of work and standard operation procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches and use of power tools, techniques and practices are conducted safely in accordance with given instructions and requirements
	2.4	Excavation is prepared for laying of pipe according to appropriate standards and

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ELEMENT	PERFORMANCE CRITERIA	
		procedures
	2.5	Construction and laying of PE gas distribution main are conducted according to appropriate standards and procedures
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed
	2.9	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed
	3.2	Work site is rehabilitated, cleaned up and made safe in accordance with and established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures

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ELEMENT	PERFORMANCE CRITERIA
	3.5 Work completion documentation is completed accurately and provided to the appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for constructing and laying Polyethylene distribution mains.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required knowledge and associated skills (EKAS) is provided below. It forms an integral part of this unit.

KS01-G220A Construct and lay Polyethylene gas distribution mains

Evidence shall show an understanding of constructing and laying Polyethylene gas distribution mains in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Polyethylene gas pipelines

- characteristics and specifications
- differences to other pipe materials
- applications in which a PE pipeline is used/not used
- handling and storage
- advantages and disadvantages
- pipe sizes and range of fitting and accessories
- dimensions for series 2 pipe - Gas (SDR) from AS/NZS 4130
- allowable pipe damage
- static electricity in gas PE pipes

T2. Relevant legislation, Australian Standards, codes, regulations and procedures requirements

T3. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas
- MSDS and handling of Solvents and jointing materials

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REQUIRED SKILLS AND KNOWLEDGE

T4. Cutting and tapping PE pipe

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T5. Joining PE pipe, pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials
- Compression fitting joints
  - procedures, equipment, tools and materials
- Fusion joints
  - procedures, equipment, tools and materials for:
    - Butt fusion; manual and hydraulic
    - Saddle fusion
    - Electro fusion
    - Socket Fusion
    - fusion times
  - difference between a quality and bad joint

T6. Transition fittings and adaptors to other piping materials

- types
- selection
- Adapting metal risers to installation requirements, bending and cutting to fit above ground requirements

T7. Bedding requirements for PE pipeline

- trench width and depth
- required coverage depth in various locations
- obstacles affecting minimum depth of cover for pipeline
- solutions for dealing with obstacles affecting the depth of cover including transitioning to other approved materials and applying protection.
- pipeline support
- backfilling requirements

T8. Conditions for direct installation or insertion of PE pipeline

T9. Installation of PE pipeline

- requirements
- procedures
- trace wire
- marker tape

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REQUIRED SKILLS AND KNOWLEDGE

T10. Termination and testing of PE pipeline

- requirements
- procedures

T11. Static Electricity in PE gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical

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equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills

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- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carry out Polyethylene distribution pipeline construction work activities as described in 9.) Range Statement and including:

    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.

    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices

    C. Cutting, joining, laying, covering and connecting Nylon/PVC gas distribution pipelines in accordance with requirements

    D. Isolating, venting, purging and testing for soundness and leaks, commissioning and making safe on gas services

    E. Completing required documentation and reporting.

    F. Dealing with unplanned events by drawing on required skills and knowledge, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.

- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

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There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to the construction and laying of Polyethylene gas distribution mains in accordance with relevant legislation, standards, codes and established procedures. This includes laying and cutting pipes and joining pipes and fittings and the installation of the meter connection to the service riser.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements

Unit Sector(s)

Gas Industry.

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Competency Field

Competency Field **11)**

Gas Distribution.

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UEGNSG221A First on site response to gas pipeline emergencies

Modification History

This is a new unit which replaces the UEG11 unit UEGNSG209B First on site emergency response on a distribution pipeline, and UEGNSG309B First on site emergency response on a transmission pipeline.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the first on site response requirements to a gas distribution or transmission pipeline emergency incident in accordance with relevant legislation, code, regulations and procedures. These incidents may include but is not limited to, gas escapes, gas outages, security breaches, fires, injury and damage

This encompasses assessing the situation extent and type of incident; making the area safe, identifying source of gas leaks, reporting back to the response/control centre, identifying and controlling potential ignition sources, ventilation/ evacuation from property, liaising with other authorities and emergency services, remaining on site and maintaining site safety until support arrives, should it be required. This includes using approved Standard Operating Procedures and appropriate PPE.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to Gas Industry work sites, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 2 competency for new and

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existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety, and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to WHS /Occupational Health and Safety (OHS), gas industry codes/guidelines, industrial relations, environmental protection, anti-discrimination and training laws.

Commonwealth, State/Territory or Local Government legislation and regulations may limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG00 Prepare to work in the gas industry 5A

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
HLTAID003	Perform first aid
CPPFES2005A	Demonstrate first attack fire fighting equipment

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan first on site emergency response	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Details of incident are confirmed with supervisor, control centre or radio room.
	1.3	Relevant requirements and established procedures for the incident response are discussed with relevant persons to establish and confirm the work schedule.
	1.4	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are reported, prioritised, implemented and monitored according to established procedures
	1.6	Relevant work permits and/or relevant notifications if required are secured to ensure the work is approved, recorded, coordinated and performed safely.
	1.7	Resources including persons, equipment, tools and personal protective equipment required to carry out the work are identified, scheduled, obtained and checked to correct operation and safety
	1.8	Effective liaison and communication is established with the supervisor, coordination centre, emergency authorities and land owners.

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised in accordance with establish procedures
	1.10	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out first on site emergency response	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	A safe work zone is created in accordance with Standard Operating Procedures and reported back to relevant stakeholders
	2.3	First Aid and other related work procedures are performed according to requirements and established procedures
	2.4	Hazardous activities such as lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.6	General operating conditions of equipment are monitored in order to determine performance of equipment and system
	2.7	Liaising with third parties concerning the threat to the pipeline occurs to ensure the pipeline can be monitored.
	2.8	Communication with immediate supervisor, coordination centre, emergency authorities and property owners is undertaken in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	2.9	Preliminary evidence is collected from the scene as per established procedures
	2.10	Basic fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that is required according to requirements and established procedures
	2.11	Stands by and maintains site safety until support arrives.
	2.12	Procedures for referring non-routine events to the immediate authorised persons for directions are followed, for example the emergency level being escalated.
	2.13	Routine quality checks are carried out in accordance with work instructions.
3 Complete response and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Incidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	The incident site is correctly handed over to the repair coordinator or relief response person, including all reports, risk control measures and permit conditions.
	3.4	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.5	Relevant work permit(s) are completed and signed off in accordance with requirements
	3.6	Works completion documentation including records, reports as installed/modified drawing(s) and information is completed accurately and provided to appropriate persons in accordance with established procedures.
	3.7	Participates in debriefing to discuss strengths and weaknesses of incident response.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired for first on site emergency response on a distribution and transmission pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G221A Gas pipeline first on site emergency response

Evidence shall show an understanding of first on site emergency response requirements for a gas distribution or transmission incident in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Security breaches and required action

- types of security incidents including but not limited to physical security breaches at gas infrastructure
- threat assessment and management
- confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

T2. Emergency/incident control procedures compliance with applicable enterprise

- policies and procedures
- communication with relevant stakeholders
- application of relevant procedures
  - isolate emergency site
  - initial traffic control measures in a gas emergency situation – vehicle and pedestrian
  - safe approach of a gas emergency site

T3. Emergency site assessment

- physical security breaches of gas infrastructure
- threat assessment and management

T4. Site investigation and evidence gathering techniques

- investigating events
- maintaining integrity of site

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REQUIRED SKILLS AND KNOWLEDGE

- gathering evidence from site
- preserving evidence and site for further investigation

T5. Problem solving in a first response role

- likely problems /assets involved and possible solutions
- recommending probable solutions
- problem solving techniques
- understanding and interpreting relevant technical drawings including, but not limited to:
  - District plans
  - Mains detail plans
  - Easement Plans
  - Industrial Service Plans
- Pipeline route maps and alignment sheets

T6. Communications

- identify nature of situation and preliminary assessment
- internal
  - workplace colleagues and managers
- external
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

T7. Reports

- procedures and legislative requirements for maintaining appropriate reporting and recording systems
- job records and process information to appropriate/relevant department
- non-conformance and incident reports including customer outages/ security breaches

Evidence Guide

EVIDENCE GUIDE

8) *The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.*

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all

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prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carrying out first on site emergency response for a gas distribution or transmission incident in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:
    A. Identifying and evaluating threats to the integrity of gas pipelines
    B. Assessing the incident and establishing a safe working site
    C. Monitoring gas concentrations and control ignition sources
    D. Initially investigating the incident and collecting evidence

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E. Completing required documentation and reporting.

F. Dealing with unplanned events by drawing on required skills and knowledge, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

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This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the required Skills and Knowledge s are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to first on site response to an emergency on a gas pipeline which may include but is not limited to,

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RANGE STATEMENT

escapes, outages, security breaches, fires, injury and damages.

This includes assessing the extent and type of incident; making the area safe, identifying source of gas leaks, reporting back to the response/control centre, identifying and controlling potential ignition sources, ventilation/ evacuation from property, liaising with other authorities and emergency services .

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawings
- Established procedures
- PPE and First Aid equipment
- Traffic control
- Emergency response manuals
- Security breach investigation practices

Unit Sector(s)

Gas Industry

11. Competency Field

Competency Field **11)**

Gas distribution and transmission

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UEGNSG222A Construct and lay Nylon or PVC gas distribution mains

Modification History

This is the revised unit for UEGNSG212A Construct, lay and connect a residential single point gas distribution service to a plastic main completed as part of UEG13

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers excavated bed preparation and the construction and laying of either Nylon or PVC gas distribution mains including the installation of the meter connections to the service riser.

It encompasses the use of relevant tools and equipment, working safely using standard operating procedures, complying with relevant legislative, standard and code requirements and completing necessary documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where gas distribution pipeline operations occur, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, Workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Prerequisite Unit(s) **4)**

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a* *Performance Criteria describe the required performance needed to demonstrate achievement of the element.*

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competency standard unit *Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to construct and lay Nylon or PVC gas distribution mains	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to construct and lay Nylon/PVC gas distribution pipelines and services are identified, obtained and checked for operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others

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ELEMENT	PERFORMANCE CRITERIA	
		involved
	1.8	Materials, plans, diagrams, drawings and resources required to construct and lay Nylon/PVC gas distribution mains are confirmed, scheduled and obtained in accordance with established procedures.
	1.9	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
	1.12	Road signs, barriers and warning devices are positioned in accordance with given instructions and requirements including traffic management plans
2 Construct and lay Nylon or PVC gas distribution mains	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, and use of power tools, techniques and practices are conducted safely in accordance

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ELEMENT	PERFORMANCE CRITERIA	
		with given instructions and to requirements.
	2.4	Excavation is prepared for laying of pipe according to appropriate standards and procedures
	2.5	Construction and laying of Nylon/PVC gas distribution main are conducted according to appropriate standards and procedures
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.9	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Appropriate persons are notified of completion of the work according to established procedures.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Work site is tidied and made safe in accordance with established procedures.
	3.5	Work completion documentation in completed and provided to appropriate persons in accordance with established procedures.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for constructing and laying nylon and PVC gas distribution mains.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G222A Construct and lay distribution nylon and PVC mains

Evidence shall show an understanding of constructing and laying Nylon or/PVC gas distribution mains in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Nylon/PVC gas pipelines

- characteristics and specifications
- differences to other pipe materials
- pipe sizes and range of fittings and accessories
- applications in which a Nylon/PVC pipeline is used/not used
- handling and storage
- advantages and disadvantages
- allowable pipe damage
- static electricity in gas Nylon/PVC pipes

T2. Relevant legislation, Australian Standards, codes, regulations and procedures requirements

T3. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas
- MSDS and handling of Solvents and jointing materials

T4. Cutting and tapping Nylon/PVC pipe

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T5. Joining Nylon/PVC pipe, pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements

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REQUIRED SKILLS AND KNOWLEDGE

- selection and use of equipment, tools and materials

T6. Transition fittings and adaptors to other piping materials

- types
- selection
- Adapting metal risers to installation requirements, bending and cutting to fit above ground requirements

T7. Bedding requirements for Nylon/PVC pipeline

- trench width and depth
- required coverage depth in various locations
- obstacles affecting minimum depth of cover for pipeline
- solutions for dealing with obstacles affecting the depth of cover including transitioning to other approved materials and applying protection.
- pipeline support
- backfilling requirements

T8. Conditions for direct installation or insertion of Nylon/PVC pipeline

T9. Installation of Nylon/PVC pipeline

- requirements
- procedures
- trace wire
- marker tape

T10. Termination and testing of Nylon/PVC pipeline

- requirements
- procedures

T11. Static Electricity in Nylon/PVC gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

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Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Construct and lay Nylon or PVC gas distribution mains in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.

    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices

    C. Cutting, joining, laying, covering and connecting Nylon/PVC gas distribution pipelines in accordance with requirements

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D. Isolating, venting, purging and testing for soundness and leaks, commissioning and making safe on gas services

E. Completing required documentation and reporting.

F. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility

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assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the gas industry

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to constructing and laying Nylon or PVC gas distribution mains in accordance with relevant legislation, code, regulations and procedures. This includes laying and cutting pipes, joining pipes and fittings and the installation of the meter connection to the service riser.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements
- Standards

Unit Sector(s)

Gas Industry.

Competency Field

Competency Field **11)**

Gas Distribution discipline.

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UEGNSG223A Construct and lay steel gas distribution pipelines

Modification History

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers excavated bed preparation and the construction and laying of steel gas distribution mains, including the installation of the meter connection to the service riser

It encompasses connecting steel pipe to steel or cast iron gas distribution main pipelines, using relevant tools and equipment, working safely using standard operating procedures, complying with relevant legislative, standard and code requirements and completing necessary documentation. It excludes any steel welding.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where gas distribution pipeline operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

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License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/ Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry

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Prerequisite Unit(s) **4)**

UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

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ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to construct and lay steel gas distribution mains	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements, including alignment of main and services and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures including keeping emergency exits clear.
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to carry out the work are identified, obtained and checked for correct operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.8	Materials, plans, diagrams, drawings and resources required to construct and lay steel gas distribution mains including cast iron transition and connections are confirmed, scheduled and obtained in accordance with established procedures
	1.9	Relevant responsibilities associated with safety and emergency procedures for an incident are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.

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ELEMENT	PERFORMANCE CRITERIA	
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures
	1.12	Road signs, barriers and warning devices are positioned in accordance with given instructions and requirements including traffic management plans
2 Construct and lay steel gas distribution mains	2.1	WHS/OHS risk and control measures schedule of work and standard operation procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches and use of power tools, techniques and practices are conducted safely in accordance with given instructions and requirements
	2.4	Excavation is prepared for laying of pipe according to appropriate standards and procedures
	2.5	Construction and laying of steel gas pipe including cast iron transition and connections are conducted according to appropriate standards and procedures
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.

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ELEMENT	PERFORMANCE CRITERIA	
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed
	2.9	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed
	3.2	Work site is rehabilitated, cleaned up and made safe in accordance with and established procedures
	3.3	Equipment and tools and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to the appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for constructing and laying steel gas distribution mains.

All knowledge and skills detailed in this unit should be contextualised to current

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REQUIRED SKILLS AND KNOWLEDGE

industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G223A Construct and lay gas distribution steel mains

Evidence shall show an understanding of constructing and laying steel gas distribution mains in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Steel gas pipelines

- characteristics and specifications
- differences to other pipe materials
- applications in which a steel pipeline is used/not used
- handling and storage
- advantages and disadvantages
- pipe sizes and range of fitting and accessories
- allowable pipe damage
- static electricity in gas PE pipes

T2. Relevant legislation, Australian Standards, codes, regulations and procedures

- AS/NZS 4645

T3. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas
- bonding leads
- voltage testers

T4. Cutting and tapping Steel pipe

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T5. Joining Steel pipe, pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials
- preparation for welding
- insulated joints

T6. Transition fittings and adaptors to cast iron piping materials

- types and selection
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

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REQUIRED SKILLS AND KNOWLEDGE

T7. Coatings types and repair

T8. Bedding requirements for Steel pipeline

- trench width and depth
- coverage depth in various locations
- obstacles affecting minimum depth of cover for pipeline
- solutions for dealing with obstacles affecting the depth of cover including transitioning to other approved materials and applying protection.
- pipeline support
- backfilling requirements

T9. Conditions for direct installation or insertion of Steel pipeline

T10. Installation of Steel pipeline

- requirements
- procedures
- internal cleaning

T11. Termination and testing of Steel pipeline

- requirements
- procedures

T12. Corrosion mitigation principles

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment,

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such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with

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the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Construct and lay steel gas distribution mains in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:
    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.
    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices
    C. Cutting, joining, laying, covering and connecting Steel gas distribution pipelines in accordance with requirements
    D. Isolating, venting, purging and testing for soundness and leaks, commissioning and making safe gas services
    E. Completing required documentation and reporting.

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F. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in constructing and laying a distribution gas service to a metal main.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment

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and facilities for learners to develop and demonstrate the required Skills and Knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG133A	Comply with environmental policies and
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the gas industry

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation constructing and laying steel gas distribution mains, in accordance with relevant legislation, code, regulations and procedures. This includes This includes laying and cutting pipes, joining pipes and fittings and the installation of the meter connection to the service riser.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services
- Appropriate persons

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RANGE STATEMENT

- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements
- Standards

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Distribution discipline.

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UEGNSG224A Construct and lay copper and stainless steel gas distribution pipelines

Modification History

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers excavated bed preparation and the construction of copper and stainless steel gas distribution pipelines and services up to 20mm diameter including the installation of the meter connection to the service riser.

This encompasses includes the use of relevant tools and equipment, working safely using standard operating procedures, complying with relevant legislative, standard and code requirements and completing necessary documentation. It excludes any welding of stainless steel pipe work.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur, subject to all Workplace Health and Safety (WHS) / Occupational Health and Safety OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, Workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to construct copper and stainless steel gas distribution pipelines	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to construct copper and stainless steel gas pipelines and services are identified, obtained and checked for operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.8	Materials, plans, diagrams, drawings and resources required to construct gas pipelines are confirmed, scheduled and obtained in accordance with established procedures.
	1.9	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established

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ELEMENT	PERFORMANCE CRITERIA	
		procedures.
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Construct copper and stainless steel gas distribution pipelines	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
	2.4	Construction of copper and stainless steel gas pipelines and services are conducted according to appropriate standards and procedures
	2.5	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.6	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.8	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.

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ELEMENT	PERFORMANCE CRITERIA
	3.2 Appropriate persons are notified of completion of the work according to established procedures.
	3.3 Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4 Work site is tidied and made safe in accordance with established procedures
	3.5 Work completion documentation is completed and provided to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for constructing copper and stainless steel gas distribution pipelines. All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the skills and knowledge required is provided below. It forms an integral part of this unit.

KS01-G224AB Construct distribution copper and stainless steel pipelines

Evidence shall show an understanding of constructing copper and stainless steel gas distribution pipelines in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Copper and Stainless Steel gas pipelines

- characteristics
- pipe sizes
- fittings
- accessories
- material specifications
- applications
- handling and storage
- advantages and disadvantages
- MSDS

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T2. Relevant Australian Standards

T3. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas

T4. Copper and Stainless Steel and other piping materials

- types and identification

T5. Cutting and tapping Copper and Stainless Steel pipe

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T6. Joining Copper and Stainless Steel pipe, pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T7. Transition fittings and adaptors to other piping materials

- types
- selection

T8. Conditions for direct installation or insertion of Copper and Stainless Steel pipeline

T9. Installation of Copper and Stainless Steel pipeline

- requirements
- procedures
- trace wire
- marker tape

T10. Termination and testing of Copper and Stainless Steel pipeline

- requirements
- procedures

T11. Static Electricity in Copper and Stainless Steel gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

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EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Construct copper and stainless steel gas distribution pipelines in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:
    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant

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to the work to be undertaken.

B. Identifying the plant and equipment and their safe operating parameters/requirements

C. Cutting, joining and connecting copper and stainless steel gas distribution pipelines and services in accordance with requirements

D. Isolating, venting, purging and testing for soundness and leaks and making safe gas services

E. Completing required documentation and reporting.

F. Responding to unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

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These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

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UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the utilities industry

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to constructing copper and stainless steel gas distribution pipelines and services up to 20mm diameter, in accordance with relevant legislation, code, regulations and procedures. This includes cutting pipes, joining pipes and fittings and the installation of the meter connection to the service riser, upstands, above ground services and response lines.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements
- Standards

Unit Sector(s)

Gas Industry.

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Competency Field

Competency Field **11)**

Gas Distribution discipline.

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UEGNSG225A Perform routine maintenance on distribution pipeline facilities and equipment

Modification History

This unit replaces UEGNSG206B Perform routine maintenance on distribution pipeline facilities and equipment in UEG11.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the routine maintenance of distribution pipeline facilities and equipment.

It encompasses using equipment, tools and testing devices; performing routine maintenance; identifying faults; and completing the appropriate documentation and reports.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas distribution pipelines, facilities and equipment, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

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License to practice **3)**

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare and plan for routine maintenance on distribution pipeline facilities and equipment	1.1	Work schedule(s), including drawings, plans, requirements, established procedures and material lists are received, analysed and confirmed if necessary by site inspection
	1.2	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to the performing of routine maintenance of pipeline, facilities and equipment are identified, obtained, understood and confirmed for the purposes of the work performed and communicated

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ELEMENT	PERFORMANCE CRITERIA	
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Hazards are identified, WHS/OHS risks are assessed and control measures for identified hazards are implemented, prioritised and monitored against the work schedule.
	1.6	The facilities/equipment is made safe by ensuring it is safely isolated, depressurised, tagged and locked out and a permit to work is obtained to access and perform work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and checked for operation and safety.
	1.8	Relevant persons at worksite are confirmed to be current in First Aid and other related work procedures such as licensed to operate equipment according to requirements
	1.9	Liaison and communication with authorised persons, authorities, clients and land-owners is completed so work can be carried out where necessary
	1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.12	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2 Perform routine	2.1	WHS/OHS policies and procedures and safe

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ELEMENT	PERFORMANCE CRITERIA	
maintenance on distribution pipeline facilities and equipment		work practices are followed to eliminate or minimise incidents and hazards
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.4	Routine maintenance of distribution facilities and equipment is carried out in accordance with the work schedule and to established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks are reported to the authorised persons for directions according to established procedures
	2.6	Unplanned events in the performing of routine maintenance of distribution pipeline, facilities and equipment is undertaken within the scope of established procedures
	2.7	Known solutions to a variety of problems are applied using acquired required Knowledge and Skills
	2.8	Ongoing checks of work quality are undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	Work undertaken is checked against works schedule for conformance with requirements and anomalies reported in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with requirements and established procedures where applicable

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ELEMENT	PERFORMANCE CRITERIA
	3.3 Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5 Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6 Work completion records, reports as installed, modified drawings, documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for performing routine maintenance on distribution pipeline facilities and equipment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G225A Distribution pipeline maintenance

Evidence shall show an understanding of the performing routine maintenance on distribution pipeline facilities and equipment in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant WHS/OHS, emergency and environmental requirements and procedures

T2. Relevant Australian Standards, codes and regulations

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REQUIRED SKILLS AND KNOWLEDGE

T3. Types of pipeline, facilities and equipment to be inspected and tested

T4. Tools, equipment, instruments, PPE and emergency equipment required

T5. Manufacturers specifications, manuals, part lists, calibration forms, checklists

T6. On site risk assessment

T7. Leakage surveys and pin pointing gas leaks

T8. Isolation, depressurisation, tagging and lockout of pipeline facilities and equipment requirements and procedures, this includes valves, flanges, fittings, markers and signs

T9. Routine inspection and testing of pipeline facilities and equipment requirements and procedures.

T10. Maintenance activities requirements and procedures

T11. Faults managed during routine maintenance

T12. De-isolation all sources of energy, removal of tags and locks and return to normal operation requirements and procedures

T13. Communication and recording/reporting documentation requirements and Procedures

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the

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competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

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- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Perform routine maintenance on distribution pipeline facilities and equipment in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A WHS/OHS	All	• Perform risk assessments • Interpret technical drawings and symbols • Ensure emergency response procedures in place • Communicate with authorities and stakeholders • Obtain work permits • Use and interpret Dial Before You Dig reports

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B Piping Access Procedures	At least 3	• Excavation • Trenching • Shoring • Stitch bore • Horizontal drilling • Directional drilling
C Piping Materials	At least 2	• Nylon (polyamide) pipeline laying, joining and stop off techniques • UPVC pipeline laying , joining stop off techniques • PE pipeline laying, joining and stop off techniques • Steel pipeline laying, joining and stop off techniques
D Procedures	All	• Isolate, vent and purge gas pipeline systems • Operation of gas detector • Operate service locator • Where relevant, calculate nitrogen volume needed • Practical application of AS3723 Installation and maintenance of plastic pipe systems
E Isolation Procedures	At least 2	• High pressure stop off • 312 • Bagtube • Squash off jacks • Squash off pliers
F Unplanned Events	At least one occasion	• Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific 8.3)

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resources for assessment

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in performing routine maintenance on distribution pipeline facilities and equipment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship **8.5)**

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with other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to performing routine maintenance on distribution pipeline facilities and equipment which may include valves, actuators and flanges; heaters and heat exchangers; metering equipment; process control equipment; gas analysis equipment; piping systems; sumps and drains; pressure vessels/filtration equipment; pumping systems and equipment; compression systems and equipment.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Equipment
- Tools, equipment and testing devices
- Types of faults

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RANGE STATEMENT

- Documentation
- Reports

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **11)**

Distribution.

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UEGNSG226A Assist with the construction, laying and connection of gas distribution services to mains

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers assisting with excavated bed preparation, the construction, laying and connection of a gas service to a main under supervision.

It encompasses while working under supervision, the use of relevant tools and equipment, working safely using standard operating procedures and completing necessary documentation.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe work site where the construction and laying of a service and connection to a main occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

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Literacy and numeracy skills	**4.2)** Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy' Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills	**5)** This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to assist construct and lay a service to a main	1.1 WHS/OHS and environmental measures and procedures for the site are identified, accessed and understood.

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ELEMENT	PERFORMANCE CRITERIA	
	1.2	Relevant requirements and established procedures for the site are provided and discussed with supervisor to establish and confirm the work schedule.
	1.3	Hazards are identified and reported to the supervisor to assess the risks and implement control measures according to established procedures
	1.4	Scope of work and responsibility under the relevant work permit and/or relevant notification is received and confirmed with supervisor according to requirements and established procedures
	1.5	Equipment, plant, tools and personal protective equipment needed to construct and lay gas services are identified, obtained and checked for operation and safety.
	1.6	Supervisor is consulted to ensure the work is carried out effectively with others involved
	1.7	Materials, plans, diagrams, drawings and resources required to construct and lay gas services are received in accordance with established procedures
	1.8	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed with supervisor.
	1.9	Third party issues are referred to the supervisor in accordance with established procedures.
	1.10	Site preparation, safety plan and the work schedule are confirmed with supervisor in accordance with established procedures.
2 Assist in the construction and laying of a service to a main	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and

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ELEMENT	PERFORMANCE CRITERIA	
		measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in excavations, trenches and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
	2.4	Assistance in preparing the excavation for laying of pipe is provided according to appropriate standards and procedures
	2.5	Assistance in constructing and laying of gas services is provided according to appropriate standards and procedures
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks, incidents, accidents and non-routine events are reported to the supervisor according to established procedures
	2.8	Routine quality and safety checks are carried out in accordance with work instructions
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Supervisor is notified of completion of the work according to established procedures.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.4	Work site is tidied and made safe in accordance with established procedures
	3.5	Relevant work documentation is completed and provided to the supervisor in accordance with established procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work activities in a utilities industry work environment. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G226A Gas distribution service construction and laying assistance

Evidence shall show an understanding of assisting in the construction, laying and connection of a gas distribution service to a \main under supervision in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas service pipelines

- types and characteristics
- pipe sizes
- fittings
- accessories
- handling and storage
- MSDS/SDS

T2. Gas main pipelines

- Types and characteristics
- pipe sizes
- fittings
- accessories

T3. Overview of relevant legislation, Australian Standards, codes, regulations and procedures requirements

T4. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas
- dangers of working near plant
- MSDS/SDS and handling of Solvents and jointing materials

T5. Cutting, tapping and joining pipelines and fittings

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- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T6. Transition fittings and adaptors to other piping materials

- types
- bending and cutting to fit requirements

T7. Trenching requirements for service pipelines

- bedding materials
- trench width and depth
- required coverage depth in various locations
- pipeline support
- backfilling/compacting requirements
- surface reinstatement

T8. Installation of service pipelines

- requirements
- procedures
- trace wire
- marker tape

T9. Static Electricity in plastic gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment

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EVIDENCE GUIDE

is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

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- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Assist construct and lay services and connection to a main in accordance with relevant legislation, code, regulations and procedures as described as described in 9 Range Statement and including:

    A. Identifying and reading correctly drawings, diagrams, procedures and manuals relevant to the work to be undertaken.

    B. Identifying the plant and equipment and their safe operating parameters/requirements

    C. Assist in cutting, joining, laying, covering and connecting gas distribution services pipelines in accordance with procedures and requirements

    D. Assist in isolating, venting, purging and testing for soundness and leaks, commissioning and making safe gas services

    E. Completing required documentation and reporting.

    F. Responding to unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the

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above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment

8.4)

This Unit shall be assessed by methods given in Volume 1 Part 3

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'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the utilities industry

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to assisting with preparing an excavation bed, constructing and laying of a gas service and connection to a main under supervision.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an

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RANGE STATEMENT

integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements
- Standards

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Gas Distribution discipline.

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UEGNSG227A Assist with the construction and laying of gas distribution mains

Modification History

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers assisting with excavated bed preparation, the construction and laying of gas distribution mains under supervision.

It encompasses while working under supervision, the use of relevant tools and equipment, working safely using standard operating procedures and completing necessary documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where the construction and laying of gas distribution mains occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract

Licensing/Regulatory Information

License to practice **3)**

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License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to assist construct and lay a gas distribution mains	1.1 WHS/OHS and environmental measures and procedures for the site are identified, accessed and understood.

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ELEMENT	PERFORMANCE CRITERIA	
	1.2	Relevant requirements and established procedures for the site are provided and discussed with supervisor to establish and confirm the work schedule.
	1.3	Hazards are identified and reported to the supervisor to assess the risks and implement control measures according to established procedures
	1.4	Scope of work and responsibility under the relevant work permit and/or relevant notification is received and confirmed with supervisor according to requirements and established procedures
	1.5	Equipment, plant, tools and personal protective equipment needed to construct and lay gas distribution mains are identified, obtained and checked for operation and safety.
	1.6	Supervisor is consulted to ensure the work is carried out effectively with others involved
	1.7	Materials, plans, diagrams, drawings and resources required to construct and lay gas distribution mains are received in accordance with established procedures
	1.8	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed with supervisor.
	1.9	Third party issues are referred to the supervisor in accordance with established procedures.
	1.10	Site preparation, safety plan and the work schedule are confirmed with supervisor in accordance with established procedures.
2 Assist in the construction and laying of gas distribution mains	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed

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ELEMENT	PERFORMANCE CRITERIA	
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working, excavations, trenches and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
	2.4	Assistance in preparing the excavation for laying of pipe is provided according to appropriate standards and procedures
	2.5	Assistance in constructing and laying of gas distribution mains is provided according to appropriate standards and procedures
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks, incidents, accidents and non-routine events are reported to the supervisor according to established procedures
	2.8	Routine quality checks are carried out in accordance with work instructions
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Supervisor is notified of completion of the work according to established procedures.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.4	Work site is tidied and made safe in accordance with established procedures
	3.5	Relevant work documentation is completed and provided to the supervisor in accordance with

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ELEMENT **PERFORMANCE CRITERIA**

established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work activities in a utilities industry work environment. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G227A Gas distribution main construction and laying assistance

Evidence shall show an understanding of assisting in the construction, laying and connection of a gas distribution mains under supervision in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas main pipelines

- types and characteristics
- pipe sizes
- fittings
- accessories
- handling and storage
- MSDS/SDS

T2. Gas service pipelines

- Types and characteristics
- pipe sizes
- fittings
- accessories

T3. Overview of relevant legislation, Australian Standards, codes, regulations and procedures requirements

T4. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas
- dangers of working near plant
- MSDS/SDS and handling of Solvents and jointing materials

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T5. Cutting, tapping and joining mains pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T6. Transition fittings and adaptors to other piping materials

- types
- bending and cutting to fit requirements

T7. Trenching requirements for main pipelines

- bedding materials
- trench width and depth
- required coverage depth in various locations
- pipeline support
- backfilling/compacting requirements
- surface reinstatement

T8. Installation of main pipelines

- requirements
- procedures
- trace wire
- marker tape

T9. Static Electricity in plastic gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment,

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such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with

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the ‘Assessment Guidelines — UEG11’. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Assist construct and lay gas distribution mains in accordance with relevant legislation, code, regulations and procedures as described as described in 9 Range Statement and including:
    A. Identifying and reading correctly drawings, diagrams, procedures and manuals relevant to the work to be undertaken.
    B. Identifying the plant and equipment and their safe operating parameters/requirements
    C. Assist in cutting, joining, laying, covering and connecting gas distribution main pipelines in accordance with requirements
    D. Assist in isolating, venting, purging and testing for soundness and leaks, commissioning and making safe on gas services
    E. Completing required documentation and reporting.

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F. Responding to unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3

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'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the utilities industry

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to assisting with preparing an excavation bed, constructing and laying gas distribution mains under supervision.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an

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RANGE STATEMENT

integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements
- Standards

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Gas Distribution discipline.

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UEGNSG228A Construct and lay large copper gas distribution pipelines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers excavated bed preparation and the construction and laying of copper gas distribution pipelines and services above 20mm diameter.

This encompasses includes the use of relevant tools and equipment, working safely using standard operating procedures, complying with relevant legislative, standard and code requirements and completing necessary documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur, subject to all Workplace Health and Safety (WHS) / Occupational Health and Safety OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, Workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to construct and lay large copper gas distribution pipelines	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to construct and lay copper gas pipelines and services are identified, obtained and checked for operation and safety.
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.8	Materials, plans, diagrams, drawings and resources required to construct and lay gas distribution pipelines are confirmed, scheduled and obtained in accordance with established procedures.

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Relevant responsibilities associated with safety and emergency procedures for an incident at the worksite are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Construct and lay large copper gas distribution pipelines	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
	2.4	Trench is prepared for laying of pipe according to appropriate standards and procedures
	2.5	Construction and laying of copper gas pipelines and services are conducted according to appropriate standards and procedures

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ELEMENT	PERFORMANCE CRITERIA	
	2.6	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.7	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.9	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Appropriate persons are notified of completion of the work according to established procedures.
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Work site is tidied and made safe in accordance with established procedures
	3.5	Work completion documentation is completed and provided to appropriate persons in accordance with established procedures.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for constructing and laying copper gas distribution pipelines. All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the skills and knowledge required is provided below. It forms an integral part of this unit.

KS01-G228A Construct and lay distribution copper pipelines

Evidence shall show an understanding of constructing and laying copper gas distribution pipelines in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Copper gas pipelines above 20mm diameter

- characteristics
- pipe sizes
- fittings
- accessories
- material specifications
- applications
- handling and storage
- advantages and disadvantages
- MSDS

T2. Relevant Australian Standards

T3. Safety requirements

- hazards, risk assessment and control measures
- dangers of working with live gas

T4. Copper and other piping materials

- types and identification

T5. Cutting and tapping Copper pipe

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

T6. Joining Copper pipe, pipelines and fittings

- requirements under various conditions, inclement weather etc.
- methods, procedures and safety requirements
- selection and use of equipment, tools and materials

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T7. Transition fittings and adaptors to other piping materials

- types
- selection

T8. Bedding requirements for Copper pipeline

- trench width and depth
- required coverage depth in various locations
- obstacles affecting minimum depth of cover for pipeline
- solutions for dealing with obstacles affecting the depth of cover including transitioning to other approved materials and applying protection.
- pipeline support
- backfilling requirements

T9. Conditions for direct installation or insertion of Copper pipeline

T10. Installation of Copper pipeline

- requirements
- procedures
- trace wire
- marker tape

T11. Termination and testing of Copper pipeline

- requirements
- procedures

T12. Static Electricity in Copper gas pipes

- causes
- dangers
- prevention

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment	**8.1)**

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Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria

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shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Construct and lay copper gas distribution pipelines in accordance with relevant legislation, code, regulations and procedures as described as described in 9.) Range Statement and including:
    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.
    B. Identifying the plant and equipment and their safe operating parameters/requirements
    C. Cutting, joining, laying, covering and connecting copper gas distribution pipelines and services in accordance with requirements
    D. Isolating, venting, purging and testing for soundness and leaks, commissioning and making safe gas services

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E. Completing required documentation and reporting.

F. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and

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replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG219A	Conduct excavations in the utilities industry

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to constructing and laying copper gas distribution pipelines and services above 20mm diameter, in accordance with relevant legislation, code, regulations and procedures. This includes laying and cutting pipes, joining pipes and fittings and the installation of the meter connection to the service riser

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Materials
- Tools and equipment
- Safe working procedures
- Legislative requirements
- Standards

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Gas Distribution discipline.

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UEGNSG229A Prepare simple drawings of as laid gas mains and services

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers producing simple drawings for as laid new and altered gas installations, mains and services in accordance with relevant standards, abbreviations and symbols.

This unit does not include complex drafting skills.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to Gas Industry work sites where drawings of newly constructed or altered pipework need to be recorded for future locating, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to

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License to practice **3)**

regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of those who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Common Unit Group

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work

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Prerequisite Unit(s) **4)**

site

UEGNSG141A Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Plastic Main Services Pathway

UEGNSG212B Construct, lay and connect gas distribution service pipelines to a plastic mains

Steel Main Services Pathway

UEGNSG213B Construct, lay and connect gas distribution service pipelines to metal mains

Polyethylene Mains Pathway

UEGNSG220A Construct and lay Polyethylene gas distribution mains

Nylon or PVC Mains Pathway

UEGNSG222A Construct and lay nylon or PVC gas distribution mains

Steel Mains Pathway

UEGNSG223A Construct and lay steel gas distribution mains

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan to prepare simple drawings of as laid gas mains and services	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Types of drawings required and key features, symbols and abbreviations for each type of plan and drawing used in the gas industry are identified in accordance with the scope and standard of the work being undertaken
	1.3	The need and requirements for the drawing are determined from the work instructions and confirmed with relevant persons.
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures including keeping emergency exits clear.

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ELEMENT	PERFORMANCE CRITERIA	
	1.5	Client issues are clarified and resolved in relation to the drawing requirements in in accordance with established procedures.
	1.6	Equipment, tools, materials, drawings and personal protective equipment needed for the inspection and measurement and for producing drawings are identified, obtained and checked for correct operation and safety.
	1.7	Workplace preparation, safety plan and the work schedule are confirmed in accordance with established procedures
2 Prepare simple drawings of as laid gas mains and services	2.1	WHS/OHS and control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Inspection of relevant site is carried out as required and factors are identified that may impact on technical drawing, such as orientation, altering landscapes, building structures or temporary land marks
	2.4	Starting point and determine cross reference points are established and measurements from the starting point, distances and off sets are taken, and recorded.
	2.5	The as laid pipework is drawn to scale on graph paper using standard drawing conventions and incorporating relevant codes and standards.
	2.6	All fittings that effect the off – set or depth of the pipework such as elbows, tees are indicated on the drawing
	2.7	Additional fittings that need to be recorded in line with drawing specifications such as in – line valves, tapping tees are indicated on the drawing
	2.8	All dimensions (off –sets, distances &

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ELEMENT	PERFORMANCE CRITERIA	
		directions), pipe diameter, symbols and abbreviations are provided on the drawing in accordance in the specifications
	2.9	Standard drawing conventions are used to neatly correct original job drawing to show final 'as-laid' arrangement.
	2.10	Routine quality checks are carried out in accordance with work instructions including testing of pipework.
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed
	3.2	Additional documentation is completed; district plan number, Network area, Street name, pressure ratings, type of pipe, size of pipe, date laid and additional comments
	3.3	Drawings are signed off/closed according to established procedures
	3.4	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.5	Appropriate persons are notified of work completion according to established procedures
	3.6	All drawings and forms are completed and submitted to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for preparing simple drawings for as laid gas mains and services.

All knowledge and skills detailed in this unit should be contextualised to current industry

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REQUIRED SKILLS AND KNOWLEDGE

practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G229A Gas Mains & Services as Laid Drawings

Evidence shall show an understanding of preparing simple drawings for as laid gas mains and services in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Different gas related drawings:

- District Plans
- Industrial drawings
- Easement drawings
- Gas mains detail plans
- Gas Pipeline route maps and alignment sheets

T3. Drawing conventions and features:

- Types of gas pipe work, fittings and gas pressure ranges
- Relevant symbols and abbreviations,
- Direction
- Scale
- Key
- Contours
- Notations

T4. Key information on site plans:

- Gas pressure colour coding
- Plans overlays
- Tie in points
- End of mains
- Change of direction
- Pipe sizing
- Distances
- Method used to lay pipe (Open cut / boring / insertion etc.)

T5. Measuring devises:

- Measuring devise to actually record off sets:
  - Measuring Wheel
  - Measuring tapes

T6. As laid technical drawings for gas pipework:

- Direction

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REQUIRED SKILLS AND KNOWLEDGE

- Off sets
- Covers
- Pipe size
- Pipe material
- Additional fittings (Valves / Syphons / Test Points / Pits / Kiosk)
- Bends
- Tie in points

T7. Drawing equipment

- Pencils
- Graph paper
- Ruler
- Erasers
- Markers
- Pens
- Tape.

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

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Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
    - Apply sustainable energy principles and practices as

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specified in the Performance Criteria and range

- Demonstrate an understanding of the required l knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Prepare simple drawings for as laid gas mains and services as described as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplaces		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Safety	All	• Identify risks associated with measuring newly laid or altered pipe work • Put in place control measures to prevent incidents

B. Drawing interpretation	All	• Identify relevant Gas Drawings
		  • District Plans
		  • Mains Detail Plans
		  • Industrial services Plans
		  • Gas Easement Drawings
		  • Transmission Pipeline Plans
		• Identify relevant Dial

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		before You dig Plans • Telecommunications plans • Power Plans • Water Plans • Drain Plans • Interpret symbols and abbreviations • Use the legend to determine specifications • Identify the various gas pressures • Identify the coding for the different pressures • Identify the various pipe materials
C. Drawing requirements	All	• Drawing to represent: • scale • perspective • dimension • volume • Complete all details • pipe size • pressure range • location • diameter • material
D. Unplanned events	All	Dealing with unplanned events by drawing on required skills and knowledge, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and 8.3)

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specific resources for assessment

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in checking and reporting on station conditions.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and **8.5)**

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relationship with other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG212B	Construct, lay and connect gas distribution service pipelines to a plastic mains
UEGNSG213B	Construct, lay and connect gas distribution service pipelines to metal mains
UEGNSG220A	Construct and lay Polyethylene gas distribution mains
UEGNSG222A	Construct and lay nylon or PVC gas distribution mains
UEGNSG223A	Construct and lay steel gas distribution mains

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to preparing simple as laid sketches and drawings for gas mains and services.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawing
- Established procedures

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RANGE STATEMENT

- PPE and First Aid equipment
- Traffic control

Unit Sector(s)

Gas Supply Industry

Competency Field

Distribution

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UEGNSG305B Coordinate gas transmission pipeline repair and modifications

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the coordination of gas transmission pipeline repair and modifications. Inspection and testing techniques are included for this competency standard. It encompasses identifying and attending to leaks which may be classified into Class 1 — repair until completed; Class 2 — repair within 8 days; Class 3 monitor, repair not economic; Class 4 — no leak found and includes coordinating and where appropriate undertaking the repair, modification and minor maintenance of equipment.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

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License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the

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Employability Skills	**5)** qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare and plan for coordination of repairs and modifications of a gas transmission pipeline	1.1 Information concerning the identified repair/modification is conveyed to all parties and work schedule(s), including drawings, plans, requirements, established procedures and material lists are received, analysed and confirmed if necessary by site inspection
	1.2 Necessary plans, specifications and other relevant information and established procedures for the work are communicated to all persons and identified for all work sites
	1.3 OHS, environmental and sustainable energy policies and procedures related to the coordinating of gas transmission pipeline repairs and modifications are obtained and confirmed for the purposes of the work performed and communicated
	1.4 Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5 Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept

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ELEMENT		PERFORMANCE CRITERIA	
			clear according to established procedures
		1.6	Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
		1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
		1.8	Relevant persons at worksite are confirmed to be current in First Aid and other related work procedures according to requirements
		1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
		1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
		1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
		1.12	Road signs, barriers and warning devices are positioned in accordance with requirements
2	Coordinate pipeline repairs or modifications for gas transmission pipelines	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	and notify completion of work	2.2	Lifting, climbing, working in confined spaces, excavations, trenches. or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
		2.3	Essential Knowledge and Associated Skills is applied to the coordinating of gas transmission

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ELEMENT	PERFORMANCE CRITERIA	
		pipeline repairs and modifications to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4	Coordination of gas transmission pipeline repairs and modifications is carried out in accordance with the work schedule and to established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Repair work is monitored and unplanned events and amendments and modifications in the coordinating pipeline repair and modifications are undertaken with the scope of established procedures
	2.7	Known solutions to a variety of problems are applied using Essential Knowledge and Associated Skills
	2.8	All required testing procedures are followed and ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Re-establish transmission pipeline to operational conditions and notify completion of work	3.1	System is re-established in order to meet transmission pipeline requirements and the work undertaken is checked against works schedule for conformance with requirements, anomalies are reported in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned,

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ELEMENT	PERFORMANCE CRITERIA
	checked and returned to storage in accordance with established procedures
	3.5 Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6 Records and drawings are updated to reflect repair/modifications and work completion records, reports as installed and documentation finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for the coordination of gas transmission pipeline repair and modifications.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G305B Transmission pipeline repair and modification

G 3.3.11 Prepare for testing and inspection of pipeline system

Evidence shall show an understanding of the requirements to test and inspect a Gas Industry pipeline (Transmission) system, indicated by the following:

- procedures and the OHS and environmental requirements to be applied when carrying out testing and inspection on pipeline systems
- properties and characteristics of gas relevant to testing and inspection procedures
- classification of leaks and the relevant procedures associated with each class of leak.

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G 3.3.12 Select and use appropriate tools and equipment to inspect and test the pipeline system in accordance with procedures and legislative requirements

Evidence shall show an understanding of the selection and use of appropriate tools and equipment required to undertake the testing of a Gas Industry pipeline (Transmission) system, indicated by the following:

- various testing and inspection methods and their appropriate applications
- appropriate use of test and inspection equipment
- procedures to ensure that supply pressure is maintained
- procedures required to monitor gaseous atmosphere.

G 3.3.13 Record and interpret test data

Evidence shall show an understanding of the requirements to record and interpret test data for a Gas Industry pipeline (Transmission), indicated by the following:

- information that must be documented on completion of testing/inspection procedures
- diagnose and assess pipeline faults using test data
- analyse and interpret test data to initiate appropriate action
- use test data to correctly classify leaks for prioritising repairs
- requirements and procedures for advising relevant persons about test/inspection outcomes.

G 3.3.14 Monitor pipeline system during repair work

Evidence shall show an understanding of the requirements to monitor pipeline system during repair work on a Gas Industry pipeline (Transmission), indicated by the following:

- identification of the requirements to establish and maintain safe site conditions in accordance with procedures, environmental and OHS requirements
- procedures to conduct pressure monitoring
- manufacturer's maintenance specifications
- procedures to coordinate resources and prevent stoppages during repair work
- monitor impact of the work on environment, people and surrounds.

G 3.3.15 Carry out repair work and make amendments or modifications as required

Evidence shall show an understanding of the requirements to

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carry out repair work and to make amendments or modifications as necessary on a Gas Industry pipeline (Transmission), indicated by the following:

- procedures, OHS and environmental requirements in relation to carrying out repair work
- conduct repair work with required tools and equipment following appropriate work procedures
- procedures to follow when evaluating and implementing amendments or modifications
- job progress in relation to repair work and/or amendments or modifications
- procedures to assess quality of work and compliance with procedures, legislative and environmental requirements.

G 3.3.16 Re-establish system and restore site

Evidence shall show an understanding of the reestablishment of the system and the restoration of the site on a Gas Industry pipeline (Transmission), specifically:

- confirm that repairs and modifications are completed
- demonstrate that procedures to re-establish the pipeline conditions are to full operational capabilities
- discuss the persons that need to be notified in relation to system reestablishment
- issue permits where required
- restore site in compliance with environmental, legislative and operational requirements.

G 3.3.17 Maintain records

Evidence shall show an understanding of the maintaining of records for the repair and modification of Gas Industry pipelines (Transmission), indicated by the following:

- identification of the documentation and information that is to be recorded
- completion and processing of job records and drawings accurately and in accordance with procedures.

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G 3.3.18 Obtain information relevant to pipeline repair and modification

Evidence shall show an understanding of the need to obtain information relevant for the processes involved in the repairing or modification of Gas Industry pipelines (Transmission), indicated by the following:

- identification of problems from relevant information sources
- relevant documentation which includes plans, drawings, maps and specifications
- documentation to determine repair/modification information, including affect on customer supply, extent of repair and quantities of items required.

G 3.3.19 Liaise and communicate with relevant parties

Evidence shall show an understanding of how to liaise and communicate with relevant parties involved in the repairing or modification of Gas Industry pipelines (Transmission), indicated by the following:

- discussion of the parties that require notification of repairs/modifications
- identification of specialists required for repair/modification work
- procedures to determine relevant areas of responsibilities
- issues that impact on communication with affected parties and appropriate persons.

G 3.3.20 Prepare work site for repairs/modifications work

Evidence shall show an understanding of the preparation of Gas Industry workplaces for repairs/modifications work, indicated by the following:

- legislative, OHS and environmental requirements relevant to establishing and maintaining a safe workplace
- options for maintaining supply
- procedures for locating other services on the worksite
- identification of possible ignition sources and the taking of appropriate action
- risk assessments of the worksite including OHS risks
- requirements for consulting relevant authorities and obtaining required approvals
- procedures for the coordination of all activities and persons
- maintenance of accurate and complete records of all communications with relevant authorities and persons.

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G 3.3.21 Organise required equipment, materials and persons

Evidence shall show an understanding of the requirements to organise equipment, materials and persons as required for a Gas Industry pipeline (Transmission), indicated by the following:

- procedures and legislative requirements relevant to obtaining equipment and materials
- interpretation of documentation to ensure correct equipment and materials are specified
- coordination of the deployment of required equipment, materials and persons on a worksite.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being

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assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in

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accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Relevant knowledge of AS 1697 Relevant knowledge of AS 2885 Relevant knowledge of AS 2865 Interpret technical drawings and symbols Documentation (permits, schedules) Risk assessment implemented Implementation of Safety Procedures Able to communicate instructions/schedules Approvals from authorities Emergency Response procedures Environmental Code of Practice applied Communicate with other authorities and Stakeholders

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B	At Least 2	Basic knowledge of: Steel pipeline coating repair Steel pipeline coating testing Steel field joint coating
C	All	Purging a pipeline: Purging Procedures Relevant compliance with AS 2885 Operation of Gas Detector Isolating, venting and purging gas pipeline systems Communication with authorities Related environmental issues
D	At Least 2	Basic knowledge only: City Gate operation. Line Valve operation Pressure control procedure
E	All	Basic understanding only: Trenching Shoring
F	All	Basic understanding only: Pipeline Cathodic Protection. Relevant electrical safety
G	All	Re-commission pipeline. Pressure control procedure All testing of repairs checked/completed Pressure is according to

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		specifications
H	All	Final Inspections are carried out Site rehabilitation/reinstatement carried out Drawings/plans updated Reports completed Sign Off Procedures carried out
I	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated

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competency in coordinating gas transmission pipeline repair and modifications.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B	Carry out work activities in a utilities industry work environment
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEGNSG104B	Comply with environmental policies and procedures
UEGNSG105B	Establish the work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to coordinating gas transmission pipeline repair and modifications.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Inspection and testing techniques (3)

Leaks (3)

Repair and maintenance equipment(3)

Repair/modification techniques (3)

Documentation/records (3)

Tools, materials and equipment

Pipeline systems

Pipeline control systems

Appropriate authorities

Appropriate person

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

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Competency Field **11)**

Transmission.

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UEGNSG308B Identify, evaluate and control threats to transmission pipelines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This competency standard covers the identification, evaluation and initial control of threats to the integrity of transmission pipelines. The competency standard is applied against the requirements found under the latest version of AS 2885.1 Australian and New Zealand Standard. The competency standard includes the use of tools and equipment; maps and drawings; established procedures; PPE and First Aid; traffic control.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where gas industry operations occur.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/ liquid /electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of

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License to practice **3)**

persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the Performance Criteria describe the required performance

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essential outcomes of a competency standard unit	needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan to identify and evaluate control threats to a transmission pipeline	1.1	Works schedules, specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined. The extent of preparation for the work is assessed
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe and technical working order
	1.8	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Persons participating in the work are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
2 Carry out the identification, evaluation and control of threats to a transmission pipeline	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Analysis of information to identify key issues is undertaken as required and information is evaluated for relevance and validity to the requirements
	2.3	First Aid and other related work procedures are performed according to requirements and established procedures
	2.4	Lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are safely exercised according to requirements
	2.5	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
	2.6	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.7	Negotiation processes with third parties concerning the threat to the pipeline are carried out to ensure the pipeline can be monitored
	2.8	Fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that are required according to requirements and established procedures
	2.9	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a

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ELEMENT	PERFORMANCE CRITERIA	
		minimum of waste according to requirements
	2.10	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
	2.11	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client to a community and industry standard
3 Review, record and report on identification, evaluation and control of threats to a transmission pipeline	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
	3.4	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off in accordance with requirements
	3.6	Work completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this

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REQUIRED SKILLS AND KNOWLEDGE

unit.

Evidence shall show that knowledge has been acquired of safe working practices for operating and monitoring pipeline control systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G308B Transmission pipeline threat control

G 2.1.8 Control traffic at the work site

Evidence shall show knowledge and skills in coordinating traffic flow at a workplace where traffic control is required, that is, where work is conducted on or near a road, indicated by the following:

- Read and interpret relevant traffic authority regulations for traffic control at a worksite
- Identify signs and devices required to control pedestrians and traffic at a worksite depending on traffic flow volumes
- Apply techniques for controlling pedestrians and traffic at various worksites
- Use procedures for monitoring traffic controls
- Set up and monitor pedestrian and traffic controls

G 2.2.32 Comply with requirements for excavating and reinstating site

Evidence shall show an understanding of the requirements for preparing, conducting and completing an excavation indicated by the following:

- Identifying plans, codes, standards and drawings relevant to specific worksites
- Reading and interpreting relevant plans, codes, standards and drawings
- Regulatory requirements and procedures for excavating trenches and reinstating sites
- Apply shoring or benching requirements
- Notification of appropriate authorities and requirements for temporary or permanent restorations

G 2.2.33 Locate utilities and services

Evidence shall show an understanding and an ability to

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locate services, indicated by the following:

- Identification of relevant authorities or enterprises to contact regarding the location of other utilities services (gas, water, electricity, telecommunication, sewerage and stormwater)
- Read and interpret plans and drawings to identify the location of utilities and services
- Identification of utilities and services conduits and cables
- Correct use of electronic and manual service locators
- Apply hand excavation as required for the purposes of locating utilities and services

G 2.2.34 The selection, the use and application of materials

Evidence shall show an understanding and ability to use correct tools, materials and equipment to undertake work on a gas industry workplace, indicated by the following:

- Appropriate tools, materials and equipment are identified for preparing the site, excavating trenches and reinstating the site
- Safety requirements for using tools, materials and equipment
- Correct use of appropriate PPE
- Procedures for using, cleaning and storing tools, materials and equipment
- Procedures for checking tools, materials and equipment
- Reporting faulty tools, materials and equipment

G 3.4.5 Interpreting topographical maps and information

Evidence shall show an understanding of the requirements to interpret topographical and geographical information and maps for cathodic protection, indicated by the following:

- interpreting topographical and geographical maps and information.

G 4.1.1 Operating and supervising in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and

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environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers

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- relevant customers and suppliers
- regulatory bodies
- property/land owners (including traditional land owners) and tenants
- emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 4.1.6 Understand OHS and First Aid requirements for Gas Industry supervisors

Evidence shall show an understanding of OHS and First Aid

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requirements for gas industry supervisors and autonomous working staff, indicated by the following:

- understanding of applicable enterprise Occupational Health and Safety systems and procedures
- understanding of requirements and reasons for providing First Aid equipment and training for employees in the gas industry

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.15 Drive Gas Industry vehicles

Evidence shall show an understanding of requirements and capability of driving applicable Gas Industry vehicles including but not limited to:

- Driving vehicles appropriate to the organisation. Vehicles may include any of the following (dependent on the needs of the organisation):
  - sedan
  - four wheel drive vehicles
  - trucks
  - buses
  - excavation and construction equipment such as backhoes and excavators.

Note: All vehicles included in this clause have licence or ticket requirements. The licence or ticket will need to be

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issued to the learner for completion of relevant sections of the EKAS Clause.

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems
  - negotiation with internal and external stakeholders
  - the nature of negotiation
  - strategy and tactics of bargaining
  - pre-negotiation essentials
  - communication in negotiation
- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment

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intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

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- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Identify threats to the integrity of transmission pipelines Evaluate threats to the integrity of transmission pipelines Initial control of threats to the integrity of transmission pipelines Working knowledge of coatings for corrosion protection Working knowledge of relevant sections the latest

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		version of AS2885 Working knowledge of relevant sections of the latest version of AS2832 Working knowledge of external interference physical and procedural protection measures
B	All	Interpret technical drawings and symbols Operation of Gas detector Emergency Response procedures Operate pipe locater Use of and interpret Dial Before You Dig report or equivalent Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures Maintain a safe and clean workplace Work safely with hazardous materials and equipment Apply safe manual handling techniques Communicate effectively in the workplace Negotiation skills Apply basic planning skills First Aid certificate level 1
C	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic

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		assessment with the above listed items

Context of and specific resources for assessment **9.3)**

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in identifying, evaluating and controlling threats to transmission pipelines.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners

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to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG302B	Maintain pipeline easements
UEGNSG329 A	Gas transmission pipeline surveillance
UEGNSG309B	First on site emergency response on a transmission pipeline
UEGNSG310B	Supervise and monitor contract work
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to identifying, evaluating and controlling threats to transmission pipelines.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Tools and equipment (4)

Maps and drawings

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RANGE STATEMENT

Established procedures

PPE and First Aid equipment

Traffic control

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission.

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UEGNSG310B Supervise and monitor contract work

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the supervision and monitoring of contractors working on a transmission pipeline site. It requires the application of skills and knowledge to provide information, guidance and direction to contractors in the conduct of their duties. It does not cover the high levels of technical expertise required to actually perform the services but focuses on the key knowledge and skills required to supervise and monitor the process from a contractor management perspective. The competency standard is applied against the procedures found under the latest version of AS 2885.3 Australian and New Zealand Standard.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where gas/petrochemical liquid industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

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License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the

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Employability Skills	**5)** qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare for supervising and monitoring contract staff	1.1 Work schedule(s), including drawings, plans, requirements, established procedures and material lists are detailed, analysed if necessary by site inspection and the extent of the preparation of the work determined for planning and coordination
	1.2 Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3 Risk control measures are identified, prioritised and evaluated against the work schedule
	1.4 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5 OHS, environmental and sustainable energy policies and procedures are obtained and confirmed for the purposes of the work performed and communicated
	1.6 Relevant work permits are obtained to access and perform work according to requirements and

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
	1.8	Contractual requirements, such as qualifications of personnel to perform the work, competency of the contractor, site induction and condition of equipment are confirmed
	1.9	Relevant persons at work site are confirmed to be current in First Aid and other related work procedures according to requirements
	1.10	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.11	Persons participating in the work are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with established procedures
	1.12	Site is prepared according to work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.13	Road signs, barriers and warning devices are positioned in accordance with requirements
2 Monitor and supervise contractor activities.	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3	Essential Knowledge and Associated Skills is applied to ensure completion in an agreed timeframe and to quality standards with a

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ELEMENT	PERFORMANCE CRITERIA	
		minimum of waste according to requirements
	2.4	Contractor activity is carried out in accordance with the work schedule and to established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
	2.7	Known solutions to a variety of problems are applied using Essential Knowledge and Associated Skills
	2.8	First Aid and other related work procedures are performed according to requirements and established procedures.
	2.9	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved.
3 Complete monitoring and supervision records.	3.1	Inspection of the contract job is checked against works schedule to determine conformance with requirements, anomalies are reported in accordance with established procedures
	3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Waste materials are safely disposed of and the work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA
	3.5 Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6 Data is accurately recorded and work completion records, reports as modified drawings and documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for supervising and monitoring contract staff.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G310B Transmission pipeline contract staff

G 2.1.1 Work in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G 2.1.4 Apply relevant OHS regulations, policies and procedures

Evidence shall show an understanding of the basic workplace health and safety legislation and how this applies to individuals in a Gas Industry workplace, indicated by the following:

- Employer's responsibilities to relevant OHS legislation
- Employee's responsibilities to OHS legislation and

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organisation's policies and procedures
- OHS policies and procedures at the worksite.
- Australian Standards, guidelines and codes of practice

G 2.1.5 Work safely in the gas industry by reducing risk and using correct PPE

Evidence shall show an understanding of how to work safely in the gas industry indicated by the ability to:

- Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements
- Correctly interpret gas markers
- Identify the correct PPE required for work in the Gas Industry
- Locate and comply with procedures for correctly checking, maintaining and storing PPE
- Apply the process of Hazard identification, Risk assessment and Control
- Complete Risk Assessment forms such as Work Permits and JHA’s, JSA’s, JSEA’s, SWM’s etc
- Report workplace hazards

G 2.1.6 Work safely with hazardous materials and equipment

Evidence shall show an understanding of what constitutes hazardous materials and the equipment and processes used to safely work with these indicated by the following:

- Identify hazardous materials and equipment
- Location and purpose of Material Safety Data Sheets (MSDS)
- Read, interpret and discuss MSDS
- Knowledge of methods for safe disposal of hazardous waste materials
- Read, interpret and discuss relevant manufacturer's specifications
- Use and dispose of hazardous materials and equipment safely
- Use of spill kits and PPE

G 2.1.7 Apply safe manual handling techniques in the workplace

Evidence shall show an understanding of manual handling and how to apply this knowledge to handling heavy and awkward objects in a Gas Industry workplace, specifically:

- Principles for managing manual handling
- Characteristics and types of safe manual handling

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- Safe manual handling techniques
- Manual handling and risk management

G 2.1.9 Respond to emergency and accident situations

Evidence shall show knowledge and skills in dealing with emergency or accident situations at a Gas Industry workplace, indicated by the following:

- Situations of accidents and emergency
- Comply with procedures for accidents and incidents
- Correct use of emergency equipment and procedures for a fire
- Correct use of breathing apparatus
- Correct use of gas detectors/oxygen monitoring devices
- Correct use of emergency equipment and procedures for a gas leak or vapour emission
- Report emergencies and accidents

G 2.1.14 Read and interpret Gas Industry documents

Evidence shall show an ability to read and interpret Gas Industry documents indicated by the following:

- Understand and use signs, symbols terminology and legends as used in gas industry procedures and documents
- Identify, locate and implement gas industry standards, policies and procedures
- Interpret and read basic drawings and diagrams

G 2.1.15 Complete workplace forms, and reports

Evidence shall show an ability to complete routine Gas Industry forms, memos and reports either written or electronic, indicated by the following:

- Identify, locate, interpret and use workplace forms, and reports
- Enter the required information accurately on gas industry forms and reports

G 2.1.16 Identify requirements of work activity

Evidence shall show ability to:

- Clarify expected outcomes of a work activity in a Gas Industry workplace
- Receive, clarify and respond to verbal work instructions for work activity
- Interpret and discuss an organisation's policies, quality requirements and specifications for work activity

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G 2.1.17 Apply basic planning skills

Evidence shall show a demonstrated ability to apply basic planning skills in a Gas Industry workplace, indicated by the following:

- Develop checklists of tasks
- Prioritise tasks
- Identify resources required to complete tasks safely and efficiently
- Identify resource or scheduling conflicts and apply solutions
- Develop time lines to complete tasks

G 2.1.19 Review work activities

Evidence shall show an ability to review work activities undertaken in a Gas Industry workplace, indicated by the following:

- Check work activities against a work plan
- Seek feedback on the outcome of work activities with appropriate persons
- Report outcomes of work activities in writing or orally according to enterprise procedures

G 2.1.21 Undertake problem solving

Evidence shall show an understanding of the requirements to undertake basic problem solving in a Gas Industry workplace, indicated by the following:

- Demonstrate problem solving and diagnostics methodology
- Identify possible solutions
- Recommend probable solutions and
- Apply basic problem solving techniques

G 2.1.22 Operate in confined spaces

Evidence shall show an understanding of the requirements to recognise and operate in confined spaces in a Gas Industry workplace, indicated by the following:

- Knowledge of the requirements of Legislation, Regulations, Australian Standards and enterprise specific procedures for safe working in confined spaces
- Ability to recognise what a confined space is and the entry safety requirements
- Ability to understand and comply with manufacturers' guidelines for the safe use of PPE used in confined spaces

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- Understand how and when to use gas detectors for confined spaces entry
- Understand how and when to use breathing apparatus and rescue and recovery equipment

Note: A confined spaces entry ticket would satisfy and exceed the requirements of this EKAS clause

G 2.1.25 Protect the environment

Evidence shall show an understanding and ability to perform work in the gas industry in a manner that protects the environment indicated by the following:

- Understanding of the relevant Commonwealth/State/Territory environmental legislation, regulations and codes of practice
- Understanding of employee's and employer's responsibilities to relevant environmental legislation, regulations and codes
  - Understanding and compliance with enterprise procedures for flora control
  - erosion control
  - fauna control
  - the protection of indigenous and cultural heritage sites
- Understanding the role of regulatory bodies in monitoring environmental activities, risk and incident compliance
- Understanding community expectations for protecting the environment
- Correct use of environment protection procedures, records, inspections and incident reporting
- Identifying environmental hazards
- Assessing environmental risks
- Implementing environmental control measures
- Ability to respond to workplace environmental incidents

Note: Environmental damage can be caused by chemicals, oil, water contamination, carcinogenic agents, gases, dusts, waste contamination and noise

G 2.1.26 Communicate in the workplace

Evidence shall show an understanding and ability to communicate effectively in a Gas Industry work team

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indicated by the following:

- Effective use oral and written communications methods to achieve work related outcomes and solutions.
- Effectively receive, interpret and respond to workplace information and instructions
- Effectively convey and report work related information to fellow workers and customers
- Interact with fellow workers in a socially and culturally appropriate manner

G 2.2.32 Comply with requirements for excavating and reinstating site

Evidence shall show an understanding of the requirements for preparing, conducting and completing an excavation indicated by the following:

- Identifying plans, codes, standards and drawings relevant to specific worksites
- Reading and interpreting relevant plans, codes, standards and drawings
- Regulatory requirements and procedures for excavating trenches and reinstating sites
- Apply shoring or benching requirements
- Notification of appropriate authorities and requirements for temporary or permanent restorations

G 2.2.33 Locate utilities and services

Evidence shall show an understanding and an ability to locate services, indicated by the following:

- Identification of relevant authorities or enterprises to contact regarding the location of other utilities services (gas, water, electricity, telecommunication, sewerage and stormwater)
- Read and interpret plans and drawings to identify the location of utilities and services
- Identification of utilities and services conduits and cables
- Correct use of electronic and manual service locators
- Apply hand excavation as required for the purposes of locating utilities and services

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G 2.2.48 Prepare an excavation site

Evidence shall show an understanding and ability to prepare the site for excavation on a gas industry workplace, indicated by the following:

- Use of Dial Before you dig services
- Preparation of traffic management plans
- Identify Environmental and Safety Hazards, assess risks and implement control measures
- Communicating with third parties, colleagues and customers regarding the excavation site
- Reading and interpreting job specifications and standard operating procedures
- Grades and depth required for excavation of trenches for gas pipelines
- Techniques for marking out trench location

G 3.1.2 Work independently in a Gas Industry environment

Evidence shall show an understanding of working independently in a Gas Industry environment, indicated by the following:

- understanding of how to work autonomously or under limited/remote supervision.

G 3.4.5 Interpreting topographical maps and information

Evidence shall show an understanding of the requirements to interpret topographical and geographical information and maps for cathodic protection, indicated by the following:

- interpreting topographical and geographical maps and information.

G 4.1.1 Operate and supervise in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of

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planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land

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owners) and tenants
- emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 4.1.6 Understand OHS and First Aid requirements for Gas Industry supervisors

Evidence shall show an understanding of OHS and First Aid requirements for gas industry supervisors and autonomous working staff, indicated by the following:

- understanding of applicable enterprise Occupational

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Health and Safety systems and procedures

- understanding of requirements and reasons for providing First Aid equipment and training for employees in the gas industry

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.15 Drive Gas Industry vehicles

Evidence shall show an understanding of requirements and capability of driving applicable Gas Industry vehicles including but not limited to:

- Driving vehicles appropriate to the organisation. Vehicles may include any of the following (dependent on the needs of the organisation):
  - sedan
  - four wheel drive vehicles
  - trucks
  - buses
  - excavation and construction equipment such as backhoes and excavators.

Note: All vehicles included in this clause have licence or ticket requirements. The licence or ticket will need to be issued to the learner for completion of relevant sections of the EKAS Clause.

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems

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- negotiation with internal and external stakeholders
- the nature of negotiation
- strategy and tactics of bargaining
- pre-negotiation essentials
- communication in negotiation

- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

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The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated

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environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Have a working knowledge of the relevant sections of AS2885 Interpret technical drawings and symbols Have emergency response procedures in place Communicate schedules/coordinate to persons Carry out job safety analysis and inductions Obtain work permit Relevant knowledge of the latest version of AS 2885.3 Australian and New Zealand Standard Apply basic planning skills Work utilising relevant OHS and environmental legislation, regulations, codes of practice, policies and procedures Maintain a safe clean workplace Contractor management Communicate effectively

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		in the workplace Problem solving skills Maintain documentation Planning and organising
B	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in Context of and specific resources for assessment, evidence should show demonstrated competency in supervising and monitoring contract staff.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills

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Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG302B	Maintain pipeline easements
UEGNSG329A	Gas transmission pipeline surveillance
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines
UEGNSG309B	First on site emergency response on a transmission pipeline
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline

Range Statement

RANGE STATEMENT

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RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to supervising and monitoring contract staff on a transmission pipeline site.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Tools and equipment (4)

Maps and drawings

Established procedures

PPE and First Aid equipment

Resources

Records/documentation

Safe working procedures

Operational

Relevant persons

Types of faults

Traffic control

Facility

Assessing risk

Competency

Gas/petrochemical liquid characteristics

Interpersonal skills

Permit to work

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission.

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UEGNSG311B Site control of third party works in the vicinity of a transmission pipeline

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the control of all third party works in the vicinity of a transmission pipeline to ensure the integrity of the pipeline is not compromised. The competency standard is applied against the procedures found under the latest version of AS 2885.3 Australian and New Zealand Standard. Third party works would include excavation, seismic activities and the use of explosives, vibrating rollers and the effect of additional loads on the pipeline.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where gas and petrochemical liquids industry operations occur.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government

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License to practice **3)**

legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Plan to undertake site control of third party works in the vicinity of a transmission gas/ petrochemical liquids pipeline	1.1	Site is checked for specific hazards. Work schedule(s), specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined. The extent of preparation for the work is assessed
		1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
		1.3	Risk control measures are identified, prioritised and evaluated against the work schedule
		1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
		1.5	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
		1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
		1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe and technical working order
		1.8	Clients are provided with possible solutions and options within the scope, acceptable cost and

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ELEMENT	PERFORMANCE CRITERIA	
		requirements
	1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed, inducted and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
2 Carry out site control of third party works in the vicinity of a transmission gas pipeline	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	First Aid and other related work procedures are performed according to requirements and established procedures
	2.3	Lifting, climbing, working in confined spaces and aloft, techniques and practices are safely exercised according to requirements
	2.4	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Operating conditions of equipment are monitored
	2.7	Negotiation processes occur with third parties to control the threat to the pipeline
	2.8	Fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that are required according to requirements and established procedures

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ELEMENT		PERFORMANCE CRITERIA	
		2.9	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
		2.10	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
		2.11	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client to a community and industry standard
3	Complete site control of third party works in the vicinity of a transmission gas/ petrochemical liquids pipeline	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
		3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
		3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
		3.4	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
		3.5	Relevant work permit(s) are signed off accordance with requirements
		3.6	Work completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for site control of third party works in the vicinity of a transmission pipeline.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G311B Transmission pipeline third party

G 2.1.1 Work in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G 2.1.4 Apply relevant OHS regulations, policies and procedures

Evidence shall show an understanding of the basic workplace health and safety legislation and how this applies to individuals in a Gas Industry workplace, indicated by the following:

- Employer's responsibilities to relevant OHS legislation
- Employee's responsibilities to OHS legislation and organisation's policies and procedures
- OHS policies and procedures at the worksite.
- Australian Standards, guidelines and codes of practice

G 2.1.5 Work safely in the gas industry by reducing risk and using correct PPE

Evidence shall show an understanding of how to work safely in the gas industry indicated by the ability to:

- Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements
- Correctly interpret gas markers
- Identify the correct PPE required for work in the Gas

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Industry

- Locate and comply with procedures for correctly checking, maintaining and storing PPE
- Apply the process of Hazard identification, Risk assessment and Control
- Complete Risk Assessment forms such as Work Permits and JHA's, JSA's, JSEA's, SWM's etc
- Report workplace hazards

G 2.1.6 Work safely with hazardous materials and equipment

Evidence shall show an understanding of what constitutes hazardous materials and the equipment and processes used to safely work with these indicated by the following:

- Identify hazardous materials and equipment
- Location and purpose of Material Safety Data Sheets (MSDS)
- Read, interpret and discuss MSDS
- Knowledge of methods for safe disposal of hazardous waste materials
- Read, interpret and discuss relevant manufacturer's specifications
- Use and dispose of hazardous materials and equipment safely
- Use of spill kits and PPE

G 2.1.7 Apply safe manual handling techniques in the workplace

Evidence shall show an understanding of manual handling and how to apply this knowledge to handling heavy and awkward objects in a Gas Industry workplace, specifically:

- Principles for managing manual handling
- Characteristics and types of safe manual handling
- Safe manual handling techniques
- Manual handling and risk management

G 2.1.9 Respond to emergency and accident situations

Evidence shall show knowledge and skills in dealing with emergency or accident situations at a Gas Industry workplace, indicated by the following:

- Situations of accidents and emergency
- Comply with procedures for accidents and incidents
- Correct use of emergency equipment and procedures for a fire
- Correct use of breathing apparatus
- Correct use of gas detectors/oxygen monitoring devices

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- Correct use of emergency equipment and procedures for a gas leak or vapour emission
- Report emergencies and accidents

G 2.1.14 Read and interpret Gas Industry documents

Evidence shall show an ability to read and interpret Gas Industry documents indicated by the following:

- Understand and use signs, symbols terminology and legends as used in gas industry procedures and documents
- Identify, locate and implement gas industry standards, policies and procedures
- Interpret and read basic drawings and diagrams

G 2.1.15 Complete workplace forms, and reports

Evidence shall show an ability to complete routine Gas Industry forms, memos and reports either written or electronic, indicated by the following:

- Identify, locate, interpret and use workplace forms, and reports
- Enter the required information accurately on gas industry forms and reports

G 2.1.16 Identify requirements of work activity

Evidence shall show ability to:

- Clarify expected outcomes of a work activity in a Gas Industry workplace
- Receive, clarify and respond to verbal work instructions for work activity
- Interpret and discuss an organisation's policies, quality requirements and specifications for work activity

G 2.1.17 Apply basic planning skills

Evidence shall show a demonstrated ability to apply basic planning skills in a Gas Industry workplace, indicated by the following:

- Develop checklists of tasks
- Prioritise tasks
- Identify resources required to complete tasks safely and efficiently
- Identify resource or scheduling conflicts and apply solutions
- Develop time lines to complete tasks

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G 2.1.18 Conduct tasks to complete work activities

Evidence shall show ability to organise the activities to complete a job in a Gas Industry workplace, indicated by the following:

- Locate and organise equipment, tools and machinery required to complete tasks safely and efficiently
- Complete tasks according to planned sequences and within appropriate timeframes
- Understand quality assurance and work according to established and standard operating procedures

G 2.1.21 Undertake problem solving

Evidence shall show an understanding of the requirements to undertake basic problem solving in a Gas Industry workplace, indicated by the following:

- Demonstrate problem solving and diagnostics methodology
- Identify possible solutions
- Recommend probable solutions and
- Apply basic problem solving techniques

G 2.1.22 Operate in confined spaces

Evidence shall show an understanding of the requirements to recognise and operate in confined spaces in a Gas Industry workplace, indicated by the following:

- Knowledge of the requirements of Legislation, Regulations, Australian Standards and enterprise specific procedures for safe working in confined spaces
- Ability to recognise what a confined space is and the entry safety requirements
- Ability to understand and comply with manufacturers' guidelines for the safe use of PPE used in confined spaces
- Understand how and when to use gas detectors for confined spaces entry
- Understand how and when to use breathing apparatus and rescue and recovery equipment

Note: A confined spaces entry ticket would satisfy and exceed the requirements of this EKAS clause

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G 2.1.25 Protect the environment

Evidence shall show an understanding and ability to perform work in the gas industry in a manner that protects the environment indicated by the following:

- Understanding of the relevant Commonwealth/State/Territory environmental legislation, regulations and codes of practice
- Understanding of employee's and employer's responsibilities to relevant environmental legislation, regulations and codes
  - Understanding and compliance with enterprise procedures for flora control
  - erosion control
  - fauna control
  - the protection of indigenous and cultural heritage sites
- Understanding the role of regulatory bodies in monitoring environmental activities, risk and incident compliance
- Understanding community expectations for protecting the environment
- Correct use of environment protection procedures, records, inspections and incident reporting
- Identifying environmental hazards
- Assessing environmental risks
- Implementing environmental control measures
- Ability to respond to workplace environmental incidents

Note: Environmental damage can be caused by chemicals, oil, water contamination, carcinogenic agents, gases, dusts, waste contamination and noise

G 2.1.26 Communicate in the workplace

Evidence shall show an understanding and ability to communicate effectively in a Gas Industry work team indicated by the following:

- Effective use oral and written communications methods to achieve work related outcomes and solutions.
- Effectively receive, interpret and respond to workplace information and instructions
- Effectively convey and report work related information to fellow workers and customers
- Interact with fellow workers in a socially and culturally

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appropriate manner

G 2.2.34 The selection, the use and application of materials

Evidence shall show an understanding and ability to use correct tools, materials and equipment to undertake work on a gas industry workplace, indicated by the following:

- Appropriate tools, materials and equipment are identified for preparing the site, excavating trenches and reinstating the site
- Safety requirements for using tools, materials and equipment
- Correct use of appropriate PPE
- Procedures for using, cleaning and storing tools, materials and equipment
- Procedures for checking tools, materials and equipment
- Reporting faulty tools, materials and equipment

G 3.1.2 Work independently in a Gas Industry environment

Evidence shall show an understanding of working independently in a Gas Industry environment, indicated by the following:

- understanding of how to work autonomously or under limited/remote supervision.

G 3.4.5 Interpreting topographical maps and information

Evidence shall show an understanding of the requirements to interpret topographical and geographical information and maps for cathodic protection, indicated by the following:

- interpreting topographical and geographical maps and information.

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G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

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G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 4.1.6 Understand OHS and First Aid requirements for Gas Industry supervisors

Evidence shall show an understanding of OHS and First Aid requirements for gas industry supervisors and autonomous working staff, indicated by the following:

- understanding of applicable enterprise Occupational Health and Safety systems and procedures
- understanding of requirements and reasons for providing

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First Aid equipment and training for employees in the gas industry

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.15 Drive Gas Industry vehicles

Evidence shall show an understanding of requirements and capability of driving applicable Gas Industry vehicles including but not limited to:

- Driving vehicles appropriate to the organisation. Vehicles may include any of the following (dependent on the needs of the organisation):
  - sedan
  - four wheel drive vehicles
  - trucks
  - buses
  - excavation and construction equipment such as backhoes and excavators.

Note: All vehicles included in this clause have licence or ticket requirements. The licence or ticket will need to be issued to the learner for completion of relevant sections of the EKAS Clause.

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Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**

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A	All	Identify threats to the integrity of transmission pipelines Evaluate threats to the integrity of transmission pipelines Initiate control of threats to the integrity of transmission pipelines Working knowledge of coatings for corrosion protection Working knowledge of relevant sections of the latest version of AS2885.3 Working knowledge of requirements and techniques for safe excavations Working knowledge of construction machinery Working knowledge of requirements for safe use of explosives near a pipeline Working knowledge of requirements for safe use vibrating rollers in the vicinity of a pipeline Working knowledge of requirements for safe loading on a pipeline Working knowledge of external interference physical and procedural protection measures
B	All	Interpret technical drawings and symbols Operation of gas detector Emergency response procedures

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		Operate pipe locater Use of and interpret Dial Before You Dig report or its equivalent Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures Maintain a safe and clean workplace Work safely with hazardous materials and equipment Apply safe manual handling techniques Communicate effectively in the workplace Negotiation skills Apply basic planning skills First Aid certificate level 1
C	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

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- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency of site control of third party works in the vicinity of a transmission pipeline.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

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UEGNSG302B	Maintain pipeline easements
UEGNSG329 A	Gas transmission pipeline surveillance
UEGNSG308B	Identify, evaluate and control threats to transmission pipelines
UEGNSG309B	First on site emergency response on a transmission pipeline
UEGNSG310B	Supervise and monitor contract work

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to site control of third party works in the vicinity of a transmission pipeline.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Tools and equipment (4)

Maps and drawings

Established procedures

PPE and First Aid equipment

Traffic control

Facility

Event

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission.

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UEGNSG314B Liaise with third party and the community to maintain pipeline integrity and community safety

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This competency standard covers the liaison with third parties and the community for purposes of maintaining the integrity of a transmission pipeline. The competency standard is applied against the procedures found under the latest version of AS 2885.3 Australian and New Zealand Standard. It includes third party liaison, community awareness, communication or communication strategy and negotiating skills.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of

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License to practice **3)**

persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the Performance Criteria describe the required performance

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essential outcomes of a competency standard unit	needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Plan to liaise with third party and the community to maintain pipeline integrity and community safety	1.1	Work schedules, specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined. The extent of preparation for the work is assessed
		1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
		1.3	Risk control measures are identified, prioritised and evaluated against the work schedule
		1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
		1.5	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
		1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
		1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe and technical working order
		1.8	Clients are provided with possible solutions and options within the scope, acceptable cost and requirements

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ELEMENT		PERFORMANCE CRITERIA	
		1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
		1.10	Persons participating in the work are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
		1.11	Status of the system is sought through communication with pipeline control centre in accordance with established procedures
2	Carry out liaison with third party and the community to maintain pipeline integrity and community safety	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
		2.2	Analysis of information to identify key issues is undertaken as required and information is evaluated for relevance and validity to the requirements
		2.3	First Aid and other related work procedures are performed according to requirements and established procedures
		2.4	Lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are safely exercised according to requirements
		2.5	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
		2.6	Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the immediate authorised persons for directions according to established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	2.7	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.8	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
	2.9	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client to a community and industry standard
3 Complete the liaison with third party and the community to maintain pipeline integrity and community safety	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.4	Relevant work permit(s) are signed off accordance with requirements
	3.5	Work completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this

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REQUIRED SKILLS AND KNOWLEDGE

unit.

Evidence shall show that knowledge has been acquired of safe working practices for liaising with third party and the community to maintain pipeline integrity and community safety.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G314B Transmission pipeline integrity and safety

G 3.1.2 Work independently in a Gas Industry environment

Evidence shall show an understanding of working independently in a Gas Industry environment, indicated by the following:

- understanding of how to work autonomously or under limited/remote supervision.

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment

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- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand

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Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 4.1.6 Understand OHS and First Aid requirements for Gas Industry supervisors

Evidence shall show an understanding of OHS and First Aid requirements for gas industry supervisors and autonomous working staff, indicated by the following:

- understanding of applicable enterprise Occupational Health and Safety systems and procedures
- understanding of requirements and reasons for providing First Aid equipment and training for employees in the gas industry

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.10 Understanding security breach procedures

Evidence shall show an understanding required to identify

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security breaches and the required action in dealing with such breaches, indicated by the following as applicable:

- identification of different types of security incidents including but not limited to:
  - physical security breaches at gas infrastructure
  - threat assessment and management
  - confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

G 4.1.15 Drive Gas Industry vehicles

Evidence shall show an understanding of requirements and capability of driving applicable Gas Industry vehicles including but not limited to:

- Driving vehicles appropriate to the organisation. Vehicles may include any of the following (dependent on the needs of the organisation):
  - sedan
  - four wheel drive vehicles
  - trucks
  - buses
  - excavation and construction equipment such as backhoes and excavators.

Note: All vehicles included in this clause have licence or ticket requirements. The licence or ticket will need to be issued to the learner for completion of relevant sections of the EKAS Clause.

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems

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- negotiation with internal and external stakeholders
- the nature of negotiation
- strategy and tactics of bargaining
- pre-negotiation essentials
- communication in negotiation

- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

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The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated

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environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Identify threats to the integrity of transmission pipelines Evaluate threats that impact level of secondary response Control of the escalation of threats to the public, environment, transmission pipelines and facilities Working knowledge of relevant sections the latest version of AS2885 Working knowledge of security breach procedures Demonstration of the practical use of communications equipment
B	All	Interpret technical drawings and symbols Use of and interpret Dial Before You Dig report or its equivalent Work utilising relevant OHS and E legislation,

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		regulations, codes of practice, policies and procedures Practical knowledge of the properties of product being transported Work safely with hazardous materials and equipment Apply safe manual handling techniques Effective communication to the public and community groups Negotiation skills Apply basic planning skills First Aid certificate level 1
C	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in liaising with third parties and the community to maintain pipeline integrity and community safety.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG302B Maintain pipeline easements

UEGNSG329 A Gas transmission pipeline surveillance

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UEGNSG308B	Identify, evaluate and control threats to transmission pipelines
UEGNSG309B	First on site emergency response on a transmission pipeline
UEGNSG310B	Supervise and monitor contract work
UEGNSG311B	Site control of third party works in the vicinity of a transmission pipeline

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to liaising with third parties and the community to maintain pipeline integrity and community safety.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Third party liaison

Community awareness

Communication or communication strategy

Negotiating skills

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

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Competency Field 11)

Transmission.

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UEGNSG319B Custody transfer metering and gas quality analysis

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the calibration of volumetric measuring devices and gas analysers used in the measurement of gas quality.

The competency standard refers to the inspection, validation, calibration and recommissioning of custody transfer devices and gas quality measuring equipment in accordance with reference standards to meet contractual, organisational or statutory requirements.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not

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License to practice **3)**

subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged

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Employability Skills	**5)** will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan and prepare for the calibration of CTM or gas quality measuring equipment.	1.1	Work requirements for calibration of measuring devices are interpreted from plans, specifications and instructions
	1.2	Relevant requirements and established procedures for the work are communicated to appropriate persons
	1.3	OHS, environmental and sustainable energy policies and procedures related to the work to be performed are obtained and confirmed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures

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ELEMENT		PERFORMANCE CRITERIA	
		1.7	Resources including equipment, tools, calibration gases and personal protective equipment required to conduct the work are suitable, fit for purpose are obtained and confirmed in working order and any test measurement equipment is NATA calibrated and within calibration tolerances
		1.8	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
		1.9	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2	Inspect/Validate/Calibrate CTM or Gas Quality measuring equipment.	2.1	Information on device and equipment performance is collected and reported in accordance with organisational requirements
		2.2	Dealing with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
		2.3	Essential Knowledge and Associated Skills for the Inspection, Validation, Calibration of CTM's or Gas Quality measuring equipment is applied to ensure completion in an agreed timeframes and to quality standards with a minimum of waste according to requirements
		2.4	Routine inspections of system are scheduled and monitored in accordance with the work schedule and established procedures
		2.5	Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the immediate authorised persons for directions according to established procedures
		2.6	Equipment is calibrated against appropriate standards using correct calibration devices,

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ELEMENT	PERFORMANCE CRITERIA	
		equipment, techniques are undertaken within the scope of established procedures
	2.7	Deviations of results are resolved in accordance with established procedures and known solutions to a variety of problems are applied using Essential Knowledge and Associated Skills
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Return to operational service of CTM or Gas Quality measuring equipment.	3.1	Equipment is returned to operational service in accordance with established procedures
	3.2	Anti tamper seals are replaced and tagging removed in accordance with established procedures where applicable
	3.3	Work completion records, reports and documentation are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices in custody transfer metering and gas quality analysis.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G319B Custody transfer metering

G 3.1.2 Work independently in a Gas Industry environment

Evidence shall show an understanding of working

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independently in a Gas Industry environment, indicated by the following:

- understanding of how to work autonomously or under limited/remote supervision.

G 3.2.7 Prepare reports

Evidence shall show an understanding of the preparation of reports applicable to the commissioning and decommissioning of Gas Industry pipelines (Distribution), indicated by the following:

- Apply procedures and legislative requirements for maintaining appropriate reporting and recording systems
- Complete job records and process information to appropriate/relevant department
- Recorded non-conformances and incidents including customer outages in accordance with procedures and legislative requirements.

G 3.2.17 Maintain records

Evidence shall show an ability to maintain of records for the repair and modification of Gas Industry pipelines (Distribution) systems, indicated by the following:

- Interpret and apply enterprise policies and procedures
- Collate all relevant data
- Identify and complete the relevant records, drawings, documents and forms
- Store records in a secure manner consistent with enterprise policies and procedures

G 3.2.19 Liaise and communicate with relevant parties

Evidence shall show an understanding of liaising and communicating with relevant parties involved in repair or modification of Gas Industry pipelines (Distribution), specifically:

- Interpret and apply enterprise policies and procedures
- Identify key stakeholders
- Identify specialists that can assist in repair/modification work
- Identify responsibilities and reporting requirements of third parties
- Establish communication lines with parties that require notification of repairs/modifications

G 3.8.1 Systems operations flow control

Evidence shall show an understanding of the workings of gas

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flow and the devices used to control flow control, indicated by the following:

- understanding gas flow control devices.

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

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Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range

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- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 3	Interpret technical drawings and symbols Selection of appropriate tools and equipment System knowledge of TP, HP, MP, LP Relevant knowledge of AS3885 Part 3
B	All	Auxiliary control systems knowledge and understanding Wide open monitor operation Two stage pressure reduction with monitor override
C	All	RTU control of regulators
D	At least 2	Pressure Controllers, operation, maintenance and

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		understanding Commissioning/Setting Troubleshooting Pressure Boosters minor repairs Knowledge of types/models
E	At least 2	Basic regulator knowledge and understanding Sleeve types Control valves Diaphragm types Hydraulic Plug types
F	All	Valve maintenance and operation Working knowledge of Ball, Plug, Gate Instrument and Butterfly valves
G	At least 3	Working knowledge of: Diaphragm meters Rotary meters Turbine meters Ultrasonic Orifice plates Coriolis Oil changing
H	At least 3	Operational checks Single run units Dual run units City gates District regulators Field regulators
I	At least 3	Full Maintenance Activities

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		Single run units Dual run units City gates District Regulators Field Regulators
J	At least 3	Pressure alterations Industrial units City gates Regulator Stations Distribution mains
K	At least 3	Flaring and Purging Industrial units City gates Regulator Stations Distribution mains
L	At least 3	Overpressure Protection Systems function and operation. OPSO Internal pressure relief systems Pressure relief valves Slam Shut systems Valve Actuator and control systems
M	All	Paperwork: Risk assessments Time sheets Completing work sheets Notifications and work permits Equipment check lists Meter Bypass forms

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		Service orders Pressure recording charts
N	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency of custody transfer metering and gas quality analysis.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working

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practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the inspection, validation, calibration, and recommissioning of custody transfer devices and gas quality measuring equipment.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Calibration skills used in the setting, adjustment, calibration validation or verification of instrumentation sensors

Measurement principles

Gas chromatography

Recording and reporting

Equipment

Organisational and statutory requirements

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission.

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UEGNSG324A Follow company procedures to deal with incidents related to the abuse of drugs and alcohol

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This competency standard unit covers the following of company procedures to deal with incidents related to the abuse of drugs and alcohol on a worksite. This competency refers to: company drug and alcohol policies and procedures; OHS procedures and awareness for drug and alcohol abuse.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Prepare for the monitoring and control of drug and alcohol related incidences	1.1	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
		1.2	Risk control measures for identified hazards are prioritised, implemented and evaluated
		1.3	Relevant stakeholders are provided with possible solutions and options within the scope of established procedures
		1.4	Scope of responsibility in relation to monitoring and controlling drug and alcohol abuse is received and confirmed according to requirements and established procedures with the relevant persons
		1.5	Relevant responsibilities associated with first aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures and followed in the instance of an incident
		1.6	Issues related to drug and alcohol abuse are referred to appropriate persons in accordance with established procedures
2	Monitor and control drug and alcohol related incidences	2.1	OHS policies and procedures and safe work practices are followed in relation to monitoring and controlling drug and alcohol abuse to eliminate or minimise incidents and hazards

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ELEMENT	PERFORMANCE CRITERIA	
	2.2	Operational knowledge as applied to potential hazards and safety risks are reported to the immediate authorised persons for directions according to established procedures
	2.3	Non-routine events in relation to monitoring and controlling drug and alcohol abuse are referred to authorised persons for directions according to established procedures
	2.4	Remedial action associated with monitoring and controlling drug and alcohol abuse are dealt with using acquired known solutions and skills related to company polices and procedures
	2.5	OHS policies and procedures and safe work practices are followed in relation to monitoring and controlling drug and alcohol abuse to eliminate or minimise incidents and hazards
3 Complete procedures for the monitoring and control of drug and alcohol incidents.	3.1	Reports on incidents of drug and alcohol abuse are completed and sent to the authorised persons as per the requirements found in established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for using of equipment and tools to perform work in a work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G324A Company procedures related to the abuse of drugs and alcohol

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory

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level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.21 Drug and alcohol awareness and effects on the workforce

Evidence shall show an understanding of dealing with drug and alcohol abuse in a transmission construction worksite and other applicable gas industry workplaces. It includes:

- Knowledge and capability of identifying a worker who is affected by abuse of drugs or alcohol.
- Knowledge and understanding of relevant enterprise procedures for safely removing drug and alcohol affected workers from the worksite.
- Application of relevant policies and procedures

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems
  - negotiation with internal and external stakeholders
  - the nature of negotiation
  - strategy and tactics of bargaining
  - pre-negotiation essentials

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- communication in negotiation
- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

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Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

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- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Managing conflict in a sensitive environment. Carrying out Company Safety procedures for dealing with persons under the influence of drugs or alcohol.
B	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

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In addition to the resources listed above in context of and specific resources for assessment, evidence should show demonstrated competency in maintaining pipeline easements.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to follow company procedures to deal with incidents related to the abuse of drugs and alcohol.

The following constants and variables included in the element/Performance Criteria in

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RANGE STATEMENT

this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Drug and alcohol policies and procedures

OHS policies and procedures related to alcohol abuse

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission discipline

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UEGNSG325A Coordinate the operation of relevant plant and equipment for transmission pipeline construction

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

Coordination of the operation of relevant plant and equipment necessary for the construction of transmission pipelines. This competency refers to: Excavator and vacuum lift; Bending machine and mandrels; Internal line up clamp; Tack Rig; Side Boom; Roller Cradles; Rock Saw; Bucket Wheel trencher; Sand Blasting Unit; Thermal Coil; Over ditch wrapping machine; Padding machines; Mitsu Bucket

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly

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License to practice **3)**

related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG328A	Supervise the operation of plant and equipment for the construction of transmission pipelines

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged

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Employability Skills	**5)** will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare plant and equipment for transmission pipeline construction	1.1	Work instructions are received and confirmed
	1.2	OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.3	Easement is inspected and assessed using appropriate mediums and civil activities to determine in accordance with standard operating procedures relevant requirements
	1.4	Discussion occurs with all persons to establish and confirm work schedule
	1.5	Suggestions to assist with constructing pipeline easements are made to others involved in the work
	1.6	Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.7	Scope of responsibility under the relevant work permit isreceived and confirmed according to

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ELEMENT	PERFORMANCE CRITERIA	
		requirements and established procedures with relevant persons
	1.8	Resources including equipment such as tools and personal protective equipment required for the job are obtained and in working order according to established procedures
	1.9	Relevant responsibilities associated with first aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures and followed in the instance of an incident
	1.10	Third party issues are referred to appropriate persons in accordance with industry and community standards
2 Maintain relevant plant and equipment for transmission pipeline construction	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to eliminate the prospects of incidents
	2.3	Work area is isolated and made safe and civil activities and construction of pipeline easements is carried out in accordance with given instructions and established procedures
	2.4	Easement is constructed and confirmed to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements and established procedures
	2.5	Operational knowledge as applied to potential hazards and safety risks are reported to the immediate authorised persons for directions according to established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	2.6	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.7	Remedial action associated with constructing pipeline easements are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete procedures for operation of relevant plant and equipment for the construction of transmission pipelines	3.1	Pipeline easement work undertaken is checked against work schedule and anomalies reported to authorised persons in accordance with established procedures
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Appropriate persons are notified of work completion according to established procedures
	3.6	Work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for using of equipment and tools to perform work in a transmission pipeline construction industry work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G325 A (Coordinate)	**Plant and equipment for transmission pipeline construction**

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G 2.3.16 Transmission pipeline construction OHS, environmental and cultural legislative and regulatory requirements

Evidence shall show an understanding of the practical work requirements embedded in the OHS, Environmental and Cultural Legislation and Regulations.

For OHS:

- Complete Risk Assessment forms such as Work Permits and JHA's, JSA's, JSEA's, SWM's etc Hazard Identification
- Manual handling
- Basic First Aid
- MSDS
- Understanding how to apply control measures
- Emergency Response
- Signage
- Licenses and tickets
- Working at heights
- Awareness of confined spaces

For Environmental:

- Weed mitigation
- Erosion control
- Emission laws
- Quarantine laws
- Licenses
- Permits

For Cultural and Heritage Awareness:

- Cultural and heritage awareness tagging
- Understanding the role of the cultural monitor
- Uncovering of cultural/heritage artefacts
- Understanding heritage and cultural issues
- Understanding legislative and regulatory requirement applicable in working situations

G 2.3.22 Effective communication on a gas transmission pipeline construction site (between operators and ground crew)

Evidence shall show an Knowledge of on-site pipeline construction communication strategies including:

- hand signals,
- satellite phones
- radios

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G 2.3.24 Operation of transmission pipeline construction plant and equipment

Evidence shall show an understanding the general operating parameters of the following gas industry transmission pipeline plant and equipment:

- Compressors
- Grader
- Dozer
- Excavator
- Vacuum lift
- Bending machine
- Bending machine & mandrel
- Internal line up clamp
- Tack Rig
- Side Boom
- Roller Cradles
- Trenching Equipment
- Bucket Wheel trencher
- Grit Blasting Unit
- Thermal Coil
- Padding machines
- Mitsu Bucket
- Crane (Rough Terrain)
- Crane Truck
- Flood pump
- Squeeze pump
- Drying Plant

G 4.1.22 Knowledge of the capability and capacity of gas industry transmission pipeline construction plant and equipment across variable terrain and environment

Evidence shall show an understanding of how plant and equipment reacts in a variety of terrain and climates including:

- dry weather versus humid weather, and in different geographical environment eg sand versus mixture of sand and rock and purely rock.
- Application of engineering requirements for use of construction plant and equipment across variable terrain and environment

G 4.1.23 Dealing with contingencies in a remote area

Evidence shall show an understanding of survival techniques

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in remote areas including:

- survival techniques in remote areas eg running out of fuel/communications equipment, minor maintenance requirements.
- Planning for contingencies in remote areas

G 4.1.24 Loading capacity and scheduling requirements for the delivery of plant and equipment on vehicles across state roads and tracks

Evidence shall show an understanding of loading capacity including:

- Understanding of loading capacity and scheduling requirements for the delivery of plant & equipment on vehicles across state roads and tracks.
- Planning for contingencies eg rain, floods, breakdowns etc

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by

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various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as

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specified in the Performance Criteria and range

- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Monitor the effective use of plant and equipment. Ability to deal with conflict. Ability to supervise staff. Organise equipment according the needs of the project incorporating environmental/geological constraints (logistical organisation). Dealing with and reacting to a variety of contingencies eg rain and transport of plant and equipment.
B	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

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Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in context of and specific resources for assessment, evidence should show demonstrated competency in maintaining pipeline easements.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and **9.5)**

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relationship with other units

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation to maintaining pipeline easements.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Transmission Pipeline Plant and Equipment

Transmission Pipeline Construction Tools and Equipment

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission discipline.

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UEGNSG326A Coordinate and monitor staff and contractors

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the coordination and monitoring of staff and contractors working on a transmission pipeline construction worksite. It requires the application of skills and knowledge to provide information, guidance and direction to staff and contractors in the conduct of their duties. It does not cover the high levels of technical expertise required to actually perform the services but focuses on the key knowledge and skills required to supervise, coordinate and monitor the process from a work supervision and contractor management perspective. The competency standard is applied against the procedures found under the latest version of AS 2885.1 and AS 2885.4 in a Gas Transmission Pipeline Construction context.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

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Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability

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Employability Skills	**5)** Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare for supervising and monitoring staff and contractors	1.1 Work schedule(s), including drawings, plans, requirements, established procedures and material lists are detailed, analysed if necessary by site inspection and the extent of the preparation of the work determined for planning and coordination
	1.2 Contractor obligations such as relevant insurance requirements and OHS/plant requirements are identified and managed in accordance with established company procedures
	1.3 Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.4 Risk control measures are identified, prioritised and evaluated against the work schedule
	1.5 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.6 OHS, environmental, cultural and sustainable energy policies and procedures are obtained and

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ELEMENT	PERFORMANCE CRITERIA	
		confirmed for the purposes of the work performed and communicated
	1.7	Relevant work permits are checked to ensure that work performed is done according to requirements and established procedures
	1.8	Resources including persons, equipment, tools and personal protective equipment required for the job are identified and scheduled in accordance with project management plans
	1.9	Contractual requirements, such as qualifications of personnel to perform the work, competency of the contractor, site induction and condition of equipment are confirmed
	1.10	Confirmation of adequate access for work crews to first aid personnel and amenities according to requirements
	1.11	Liaison and communication issues with authorised persons, authorities, clients and land-owners are resolved
	1.12	Persons participating in the work are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with established procedures
	1.13	Site is prepared according to work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.14	Road signs, barriers and warning devices are positioned in accordance with requirements
2 Monitor and supervise staff and contractors	2.1	OHS policies and procedures and safe work practices are followed by all personnel to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed

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ELEMENT		PERFORMANCE CRITERIA	
		2.3	Essential Knowledge and Associated Skills is applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
		2.4	Staff and contractor activity is carried out in accordance with the work schedule and to established procedures
		2.5	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported according to established procedures
		2.6	Solutions to non-routine problems are identified and actioned using acquired Essential Knowledge and Associated Skills according to requirements
		2.7	Known solutions to a variety of problems are applied using acquired Essential Knowledge and Associated Skills
		2.8	First Aid and other related work procedures are performed according to requirements and established procedures.
		2.9	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved.
2	Complete monitoring and supervision records	3.1	Inspection of the job is checked against works schedule to determine conformance with requirements, anomalies are reported in accordance with established procedures
		3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
		3.3	Waste materials are safely disposed of and the work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
		3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned,

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ELEMENT	PERFORMANCE CRITERIA
	checked and returned to storage in accordance with established procedures
	3.5 Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6 Data is accurately recorded and work completion records, reports, drawings, documentation and any other relevant information is finalised and processed according to established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for using of equipment and tools to perform work in a transmission pipeline construction industry work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G326A Transmission pipeline staff and contractor

G 2.3.16 Transmission pipeline construction OHS, environmental and cultural legislative and regulatory requirements

Evidence shall show an understanding of the practical work requirements embedded in the OHS, Environmental and Cultural Legislation and Regulations.

For OHS:

- Complete Risk Assessment forms such as Work Permits and JHA’s, JSA’s, JSEA’s, SWM’s etc Hazard Identification
- Manual handling
- Basic First Aid
- MSDS

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- Understanding how to apply control measures
- Emergency Response
- Signage
- Licenses and tickets
- Working at heights
- Awareness of confined spaces
- For Environmental:
- Weed mitigation
- Erosion control
- Emission laws
- Quarantine laws
- Licenses
- Permits
- For Cultural and Heritage Awareness:
- Cultural and heritage awareness tagging
- Understanding the role of the cultural monitor
- Uncovering of cultural/heritage artefacts
- Understanding heritage and cultural issues
- Understanding legislative and regulatory requirement applicable in working situations

G 2.3.18 Effective communication with third party asset owners in exposing, surveying and reinstating their assets safely

Evidence shall show an understanding of how to effectively communicate with third party asset owners about:

- exposing, surveying and re-instating their assets safely and effectively

G 2.3.21 Knowledge of ASNZ 2885 for transmission pipeline construction crews

Evidence shall show an understanding of the relevant sections of:

- ASNZ 2885 dependent on the endorsement area. eg Hydro test only needs 2885.5.

G 2.3.22 Effective communication on a gas transmission pipeline construction site (between operators and ground crew)

Evidence shall show an Knowledge of on-site pipeline construction communication strategies including:

- hand signals,
- satellite phones
- radios

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory

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level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.21 Drug and alcohol awareness and effects on the workforce

Evidence shall show an understanding of dealing with drug and alcohol abuse in a transmission construction worksite and other applicable gas industry workplaces. It includes:

- Knowledge and capability of identifying a worker who is affected by abuse of drugs or alcohol.
- Knowledge and understanding of relevant enterprise procedures for safely removing drug and alcohol affected workers from the worksite.
- Application of relevant policies and procedures

G 4.1.22 Knowledge of the capability and capacity of gas industry transmission pipeline construction plant and equipment across variable terrain and environment

Evidence shall show an understanding of how plant and equipment reacts in a variety of terrain and climates including:

- dry weather versus humid weather, and in different geographical environment eg sand versus mixture of sand and rock and purely rock.
- Application of engineering requirements for use of construction plant and equipment across variable terrain and environment

G 4.1.23 Dealing with contingencies in a remote area

Evidence shall show an understanding of survival techniques in remote areas including:

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- survival techniques in remote areas eg running out of fuel/communications equipment, minor maintenance requirements.
- Planning for contingencies in remote areas

G 4.1.24 Loading capacity and scheduling requirements for the delivery of plant and equipment on vehicles across state roads and tracks

Evidence shall show an understanding of loading capacity including:

- Understanding of loading capacity and scheduling requirements for the delivery of plant & equipment on vehicles across state roads and tracks.
- Planning for contingencies eg rain, floods, breakdowns etc

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

- problem solving and decision making techniques
  - the decision making environment
  - group decision making
  - guidelines for making decisions
  - decision making aids and support systems
  - negotiation with internal and external stakeholders
  - the nature of negotiation
  - strategy and tactics of bargaining
  - pre-negotiation essentials
  - communication in negotiation
- resolve conflict with internal or external stakeholders
  - dealing with negotiation breakdowns
  - social context of negotiation
  - power in negotiation
  - ethics in negotiation.

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Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit **9.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Interpret technical

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		drawings and symbols Emergency response procedures in place Schedules communicated/coordinated to persons Carry out job safety analysis and inductions Obtain work permit Relevant knowledge of the latest version of AS 2885.1 and AS 2885.4 Australian and New Zealand Standard Apply basic planning skills Work utilising relevant OHS and environmental legislation, regulations, codes of practice, policies and procedures Maintain a safe clean workplace Contractor management Communicate effectively in the workplace Problem solving skills Maintain documentation Planning and organising
B	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for **9.3)**

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assessment

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in context of and specific resources for assessment, evidence should show demonstrated competency in supervising and monitoring contract staff.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Associated Skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit.

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Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Unit shall be demonstrated in relation supervision and monitoring contract staff

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Access preparation

Permit to Work

Permit to Access Land

Approval for construction

Stake holder approvals

Verification and identification of third party assets

Environmental and cultural heritage controls

Maps and Drawings

Established Procedures

PPE and First Aid equipment

Resources

Records/documentation

Safe working procedures

Relevant Persons

Traffic Control

Assessing risk

Competency

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RANGE STATEMENT

Interpersonal skills

Plant and Equipment used in Transmission Pipeline Construction

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission discipline.

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UEGNSG327A Coordinate transmission pipeline construction operations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This competency standard unit covers the coordination of transmission pipeline construction activities. This competency refers to the following pipeline construction activities:

Backfill; Clear and Grade; Ditching; Hydro Testing; Joint Coating; Lower and Lay; Mechanical (minor maintenance); String and bend; Welding.

Note: This unit has 9 (nine) endorsement areas which are outlined in detail in the Range Statement (section 7 of this competency standard unit).

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

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Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG320A	Establish right of way access for transmission pipeline construction
UEGNSG328A	Supervise the operation of relevant plant and equipment for transmission pipeline construction

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 "Literacy and Numeracy"

Reading 4 Writing 4 Numeracy 4

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan for transmission pipeline construction activities	1.1 Work instructions are received and confirmed
	1.2 OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed.
	1.3 Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
	1.4 Alignment sheets are used to determine correct construction operations against the work schedule and is checked for a quality outcome to minimise risk and damage to property, commerce and stakeholders in accordance with established procedures

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ELEMENT		PERFORMANCE CRITERIA	
		1.5	Worksite is inspected and assessed using appropriate resources to determine requirements in accordance with standard operating procedures and relevant requirements
		1.6	Discussion occurs and suggestions made and received with all persons to establish and confirm work schedule
		1.7	Scope of responsibility under the relevant work permit where applicable is received and confirmed according to requirements and established procedures with relevant persons
		1.8	Resources including qualified procedures, personnel, plant, equipment, tools and personal protective equipment required for the job are obtained and in working order according to established procedures
		1.9	Relevant responsibilities associated with first aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures are followed in the instance of an incident
		1.10	Client issues where applicable are referred to appropriate persons in accordance with industry and community standards
2	Carry out transmission pipeline construction operations	2.1	OHS policies, procedures and safe work practices are followed to eliminate or minimise incidents and hazards
		2.2	Lifting, climbing, working aloft, and use of tools and equipment, techniques and practices are safely followed in accordance with requirements to eliminate the prospects of incidents
		2.3	Work area is made safe and pipeline construction activities are carried out in accordance with given instructions and established procedures
		2.4	Pipeline construction activities are carried out in

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ELEMENT	PERFORMANCE CRITERIA	
		an agreed timeframe and to quality standards and the approved procedures with a minimum of waste according to requirements and established procedures
	2.5	Operational knowledge as applied to potential hazards and safety risks is reported to the immediate authorised persons for directions according to established procedures
	2.6	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.7	Remedial action associated with pipeline construction operations isdealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.8	Ongoing checks and data collection relating to the quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete transmission pipeline construction operations	3.1	Pipeline construction operations are monitored to ensure integrity of the pipe and the coating is maintained
	3.2	Compliance against the work schedule is maintained and any anomalies are reported to authorised persons in accordance with established procedures
	3.3	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.4	Tools, equipment and any surplus resources and waste materials are where appropriate, removed, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Appropriate persons are notified of work completion according to established procedures

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ELEMENT	PERFORMANCE CRITERIA
	3.6 Work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for maintaining pipeline easements to perform work in a transmission pipeline construction industry work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G327A Transmission pipeline construction operations

G 2.3.16 Transmission pipeline construction OHS, environmental and cultural legislative and regulatory requirements

Evidence shall show an understanding of the practical work requirements embedded in the OHS, Environmental and Cultural Legislation and Regulations.

For OHS:

- Complete Risk Assessment forms such as Work Permits and JHA’s, JSA’s, JSEA’s, SWM’s etc Hazard Identification
- Manual handling
- Basic First Aid
- MSDS
- Understanding how to apply control measures
- Emergency Response
- Signage
- Licenses and tickets
- Working at heights

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- Awareness of confined spaces
- For Environmental:
- Weed mitigation
- Erosion control
- Emission laws
- Quarantine laws
- Licenses
- Permits
- For Cultural and Heritage Awareness:
- Cultural and heritage awareness tagging
- Understanding the role of the cultural monitor
- Uncovering of cultural/heritage artefacts
- Understanding heritage and cultural issues
- Understanding legislative and regulatory requirement applicable in working situations

G 2.3.17 Knowledge of right of way set out and ditch line

Evidence shall show an understanding of translation of survey techniques into the right of way environment such as:

- Survey markers and off set markers, their meaning and relevant work applications.

G 2.3.19 Knowledge of pipeline protective systems including bedding and padding materials

Evidence shall show an understanding of the methods of protecting the pipeline from third party interaction:

- use of marker tape, bedding materials, marker post signage.

G 2.3.20 Operation of portable high pressure equipment

Evidence shall show an understanding of safe operation of the following:

- high pressure equipment hoses and whip checks
- Exclusion zone awareness
- Specific signage requirements for using high pressure equipment

G 2.3.21 Knowledge of ASNZ2885 for transmission pipeline construction crews

Evidence shall show an understanding of the relevant sections of:

- ASNZ 2885 dependent on the endorsement area. eg Hydro test only needs 2885.5.

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G 2.3.22 Effective communication on a gas transmission pipeline construction site (between operators and ground crew)

Evidence shall show an Knowledge of on-site pipeline construction communication strategies including:

- hand signals,
- satellite phones
- radios

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.21 Drug and alcohol awareness and effects on the workforce

Evidence shall show an understanding of dealing with drug and alcohol abuse in a transmission construction worksite and other applicable gas industry workplaces. It includes:

- Knowledge and capability of identifying a worker who is affected by abuse of drugs or alcohol.
- Knowledge and understanding of relevant enterprise procedures for safely removing drug and alcohol affected workers from the worksite.
- Application of relevant policies and procedures

G 5.1.2 Apply problem solving, decision making and conflict resolution techniques

Evidence shall show an understanding and application of problem solving, decision making and conflict resolution techniques in a Gas Industry environment, indicated by the following:

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- problem solving and decision making techniques
- the decision making environment
- group decision making
- guidelines for making decisions
- decision making aids and support systems
- negotiation with internal and external stakeholders
- the nature of negotiation
- strategy and tactics of bargaining
- pre-negotiation essentials
- communication in negotiation
- resolve conflict with internal or external stakeholders
- dealing with negotiation breakdowns
- social context of negotiation
- power in negotiation
- ethics in negotiation.

EKAS Clause below to be completed for the welding endorsement only:

G 4.1.25 Metallurgy

Evidence shall show an understanding of metallurgy including:

- Understanding of the welding procedures and the limits of essential variables in accordance with ASNZ 2885.
- Effects of operating conditions on pipelines e.g. changes in operating pressures and temperatures
- Effects of geological and environmental conditions on pipeline

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the performance criteria and the range statement of the unit of competency and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **9.2)**

Before the critical aspects of evidence are considered all

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prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UEG11". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range; and
  - Apply sustainable energy principles and practices as specified in the performance criteria and range; and
  - Demonstrate an understanding of the essential knowledge and associated skills as described in 'Essential Knowledge and Associated Skills' of this unit; and
  - Demonstrate an appropriate level of employability skills; and
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures; and
- Demonstrated performance across a representative range of contexts from the prescribed items below: Must complete A, and one of the following groups B, C, D, E, F, G, H, I, J depending on the endorsement.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	OHS Communication Environment Conflict resolution Effective Supervision

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		Effective Planning Manage pipeline construction records Manage pipeline construction procedures Draw at least once on the relevant essential knowledge and skills related to the endorsement area
B	All	Backfill: Ensuring that bedding material meets specified requirements Ensuring the soil compaction meets specified requirements Correct placement of marker tape
C	All	Clear and Grade: Manage survey marker placement procedures Ensuring environmental and cultural compliance
D	All	Ditching: Ensuring compliance with regulator standards related to excavation Selection and ensuring correct operation of required plant, tools and equipment for various ground conditions
E	All	Hydro Testing: Ensuring the suitability and/or availability of water source for testing and practicable disposal Ensure effective safety

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		controls are in place, particularly at public access points Working knowledge of ASNZ 2885.5 requirements Ensuring relevant OHS procedures are applied, particularly in relation to working out of normal hours
F	All	Joint Coating: Ensure applicators follow manufacturers guidelines Ensure effective joint coating testing techniques are applied
G	All	Lower and Lay: Ensure crew correctly places pipe string Ensure pipe coating integrity is maintained Effective communication is applied to coordinate multi point lift of the pipe string Effective coordination with as built survey
H	All	Mechanical (Minor Maintenance): Ensure that pipeline construction plant, equipment and tools are effectively maintained to meet construction schedule
I	All	String and Bend: Understand capabilities of stringing plant, equipment and tools Limitations of the Vacuum Lift and consequences of

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		incidents Appropriate motor vehicle license and skills training for ROW driving Accurate calculations for determining sequence of delivery of pipes Bending Procedures. Understand capabilities of bending plant, equipment and tools Understanding the consequence of shifting centres of gravity Trigonometric calculations for bending procedures
J	All	Welding: Ensuring welding joints are performed in accordance with welding procedures Ensuring welding plant, equipment and tools are suitable to produce welded joints that meet specified requirements Ensuring relevant OHS procedures are applied, particularly in relation to working with potentially dangerous tools and equipment in a high temperature environment

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

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- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in maintaining pipeline easements.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4) Assessment Method(s):

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

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Range Statement

RANGE STATEMENT

10) This relates to the unit of competency as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the maintaining of pipeline easements.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Legislative and regulatory requirements for rigging

Rigging equipment, tools and materials

Crane Truck

Data Collectors

Generator

Permit to Work

Specific unit endorsement outcomes

This competency standard unit is presented as a composite unit that has nine (9) specific outcomes. There are nine (9) distinct endorsable outcomes in which competence can be achieved and which is to be reported. This is done because of the high degree of commonality in knowledge, process or function. Reporting the unit with the inclusion of an endorsement allows for the formal identification of the necessary applied skills related to workplace outcomes and at the same time reflects the work classification(s) generally understood by industry. The specific unit outcomes are:

1. Backfill
2. Clear and Grade
3. Ditching
4. Hydro Testing
5. Joint Coating
6. Lower and Lay

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RANGE STATEMENT

7. Mechanical (minor maintenance)

8. String and bend

9. Welding

This unit shall be demonstrated against the coordination of construction activities which are directly aligned to the 9 endorsements. These endorsements specify designated plant and equipment. The endorsements and related plant, equipment and other variables are as follows:

Backfill	All	Padding Machine Excavator Grader Dozer Front End Loader Mitsu Bucket
Clear and Grade	All	Dozer Excavator Grader Backhoe Front End Loader
Ditching	All	Excavator Rock Saw Bucket Wheel Trencher General Digging Conditions Hard Digging Conditions
Hydro Testing	All	Crane Truck Side Boom Rough Terrain Crane Pumps Dead Weight Tester Temperature Probes and Sensors Headers Drying Plant After Cooler Pig Chart Recorder Lighting Towers

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		Gauging Plate
Joint Coating	All	Grit Blasting Rig (Skid Steer) Wrapping Machine Thermal Coil Temperature Probes and Sensors
Lower and Lay	All	Side Boom with Roller Cradles Excavator
Mechanical (minor maintenance)	All	Excavator and Vacuum Lift Bending Machine and Mandrels Internal Line up Clamp Tack Rig Side Boom Roller Cradles Rock Saw Bucket Wheel Trencher Thermal Coil Over Ditch Wrapping Machine Padding Machines Mitsu Bucket
String and bend	All	Excavator Bending Machine with Mandrels Side Boom Pipe Truck Vacuum Lift
Welding	All	Side Boom Internal Line up Clamp Tack Rig Temperature Probes and Sensors Headers

Unit Sector(s)

Not applicable.

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Competency Field

Competency Field **11)**

Transmission.

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UEGNSG330A Coat Metallic Pipelines

Modification History

This unit is a revised version of the UEG11 unit UEGNSG301A Coat gas pipelines

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers the inspection, testing and coating of steel pipelines in a utilities industry workplace in accordance with relevant legislation, code, regulations and procedures.

It encompasses the use of testing and application equipment; coatings used; coating defect assessment surveys; MSDS information and safe handling of chemicals/flammable liquids.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe work site where steel pipelines are located, subject to all Workplace Health and Safety (WHS) / Occupational Health and safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety / Occupational Health and safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) **Elements describe the essential outcomes of a competency standard unit**

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to coat metallic pipelines	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the work are provided and discussed with relevant persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and

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ELEMENT	PERFORMANCE CRITERIA	
		confirmed
	1.4	Hazards are identified and reported to relevant persons to assess the risks and implement control measures according to established procedures
	1.5	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, plant, tools and personal protective equipment needed to coat metallic pipelines are identified, obtained and checked for operation and safety
	1.7	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved.
	1.8	Materials, plans, diagrams, drawings and resources required for the job are confirmed and obtained in accordance with established procedures
	1.9	Relevant responsibilities associated with First Aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.
	1.11	Site preparation , safety plan and the work schedule are confirmed in accordance with established procedures
2 Coat metallic pipelines	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations,

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ELEMENT	PERFORMANCE CRITERIA	
		trenches, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements.
	2.3	Existing pipeline coatings are visually inspected to determine condition in accordance with established procedures
	2.4	Pipeline coating is tested to determine its condition in accordance with requirements and established procedures
	2.5	Pipeline is prepared for coating in accordance with established procedures
	2.6	Pipeline is coated where required in accordance with established procedures
	2.7	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.8	Hazard warnings and safety signs are recognised and hazards are assessed and OHS/WHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.9	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.10	Routine quality checks of the work are carried out undertaken in accordance with work instructions.
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Appropriate persons are notified of completion of the work according to established procedures.
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	3.4	Waste materials are disposed of safely and environmentally in accordance with procedures/policies.
	3.5	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.6	Work completion documentation is completed and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the coating metallic pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G330A Metallic pipeline coatings

Evidence shall show an understanding of inspecting, testing and coating of steel pipelines in a utilities industry workplace in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Pipeline coatings

- purpose,
- types,
  - petroleum based wraps
  - epoxy
  - paints
  - PE jackets and sleeves
  - coal tar enamel, include issues with old types that used asbestos
  - rock (protection) jacket
- applications
- properties and characteristics

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REQUIRED SKILLS AND KNOWLEDGE

- MSDS
  - Specific environmental and OHS requirements of coating substance
  - Safety issues of working in trenches and confined spaces

T2. Cathodic Protection

- overview
- faults and effects
  - stray electrical currents
  - damage to coatings

T3. Pipeline preparation/stripping

- techniques
- tools
- Pipeline coating
- techniques
- tools
- application

T4. Testing pipeline coatings

- requirements
- procedures
- tools and equipment

T5. Pipeline coating defect assessment methods:

- Pipe to soil Off potential measurement
- Data logging
- CP surveys and audits
- Interference testing
- Interference from DC rail traction
- Drainage Bonds (DB)
- TRAD units
- Bond checks

T6. Pipeline coating irregularities, deviations or problems

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in

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conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

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competency in this unit

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Coat metallic pipelines in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/materials/procedures/ workplaces/other variables		
Group	**The minimum number of items on which skill is to be demonstrate**	**Item List**

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	d	
A. Equipment/tools	At least 4	• Abrasive blasting equipment • Low voltage/high voltage "Holiday" detectors • Paint thickness coating gauges and meters • Pipe wrapping machines • Spray painting equipment • Abrasive blast comparators and standards • Densitometers • Heating torch
B. Procedures	All	• Visual inspection of pipeline coatings • Testing pipeline coatings • Safe handling procedures for a range of dangerous and toxic chemicals and compounds • OHS and environmental legislative requirements associated with the use, application and disposal of coating materials • Coating defect assessment and application methods
C, Unplanned events	At least one occasion	Respond to an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

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Context of and specific resources for assessment

8.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in coating gas pipelines.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the Key Competencies.

Method of assessment

8.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

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UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) **This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.**

This Competency Standard Unit shall be demonstrated in relation to the coating of metallic pipelines in accordance with relevant legislation, code, regulations and procedures.

This will include the use of appropriate tools, equipment and materials to test the existing coating, assess the defects, and prepare and coat the pipework.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Testing and application equipment
- Coatings
- Coating defect assessment
- MSDS

Unit Sector(s)

Utilities Industry

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Competency Field

Competency Field **11)**

Utilities

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UEGNSG331A Establish right of way access for transmission pipeline construction

Modification History

This unit is a revised version of the UEG11 unit UEGNSG320A Establish right of way access for transmission pipeline construction

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers the establishing right of way access for gas transmission industry in accordance with relevant legislation, standards, codes and established procedures.

It encompasses the provision of access for operators to survey, clear, ditch, lower in, backfill and reinstate the pipeline easement and covers; Access preparation; Permits; Verification and identification of 3rd party assets; Environmental and cultural heritage controls.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any basic and safe work site where Gas transmission pipeline construction operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract

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of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the

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Prerequisite Unit(s) **4)**

	gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) **Elements describe the essential outcomes of a competency standard unit**

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to establish right of way access for transmission pipeline construction	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Topographical and geographical maps are confirmed and relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Suggestions to assist with construction of Right Of Way for easements are made to others involved in the work.
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.7	Tools, equipment and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for operation and safety.
	1.8	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.9	Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.

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ELEMENT	PERFORMANCE CRITERIA	
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures.
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Establish right of way access for transmission pipeline construction	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and requirements
	2.4	Work area is cordoned off and made safe for the construction of pipeline easements in accordance with established procedures.
	2.5	Construction of a pipeline easement is carried out efficiently, in an agreed timeframe and to required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.7	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.8	Remedial action associated with the access for pipeline construction is dealt with in accordance with established procedures.
	2.9	Routine quality checks are carried out in

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ELEMENT	PERFORMANCE CRITERIA	
		accordance with work instructions
3 Complete work activities and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work site is rehabilitated, cleaned up and made safe in accordance established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) **This describes the required skills and knowledge and their level, required for this unit.**

Evidence shall show that knowledge has been acquired of safe working practices for using of equipment and tools to perform work in a transmission pipeline construction industry work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

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REQUIRED SKILLS AND KNOWLEDGE

KS01-G331A Right of way access for transmission pipeline construction

Evidence shall show an understanding of establishing right of way access for transmission pipeline construction in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, regulations, codes

T2. Enterprise procedures, plans and drawings

T3. Relevant safety hazards and mitigation measures

- Vehicles in rough terrain
- Natural emergencies – e.g. bushfire
- Fauna control – e.g. snakes and ticks

T4. Surveying right of way

T5. Survey markers and off set markers, their meaning and relevant work applications.

T6. Exposing, surveying and re-instating ((third party) assets safely and effectively

- use of marker tape, bedding materials, marker post signage

T7. Clear and grade

T8. Environmental and cultural hazard and mitigation measure for right of way

T9. Vegetation clearing

T10. Top soil management

T11. Weed mitigation

T12. Erosion and sediment control

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

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Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria

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shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Establishing right of way access for transmission pipeline construction as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A Procedures	All	OHS, environmental and cultural legislative and regulatory requirements. Interpret survey set out. Follow third party procedures for verification and identification of assets

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		to ensure their preservation. Abiding by restrictions of the Right of Way and access. Erosion control processes. Choose and operate appropriate plant for ground conditions (separation of top soil, sub soils etc.).
B Unplanned events	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

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Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG136A	Carry out transmission pipeline construction work activities

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Range Statement

RANGE STATEMENT

9) **This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.**

This unit shall be demonstrated in relation to establishing pipeline easements in accordance with relevant legislation, standards, codes and established procedures.

This includes the application of relevant WHS/OHS, environmental and cultural legislative and regulatory requirements, interpretation of survey set out, following third party procedures for verification and identification of assets, abiding by restrictions of the Right of Way and access, erosion control processes, and selecting and operating appropriate plant autonomously on at least two occasions.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Access preparation
- Permit to Work
- Permit to Access Land
- Approval for construction
- Stake holder approvals
- Verification and identification of third party assets
- Environmental and cultural heritage controls

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **10)**

Transmission discipline.

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UEGNSG332A Undertake hydro-testing for transmission pipeline construction

Modification History

This unit is a revised version of the UEG11 unit UEGNSG321A Undertake hydro-testing for transmission pipeline construction.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers undertaking the basic tasks required for hydro-testing on gas transmission pipelines construction worksites in accordance with relevant legislation, regulation, codes and procedures.

It encompasses the fundamentals of hydro-testing, equipment and plant used, safety and environmental hazards and specific risks associated with hydro-testing and exclusion zones.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, antidiscrimination and training.

Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas

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Prerequisite Unit(s) **4)**

	industry
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare for hydro-testing for transmission pipeline construction	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.4	Easement is inspected and testing procedures determined in accordance with standard operating procedures relevant requirements.
	1.5	Suggestions to assist with testing of the construction pipeline are made to others involved in the work.
	1.6	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored, including keeping emergency exits , according to established procedures.
	1.7	Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures.
	1.8	Tools, equipment and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for operation and safety.
	1.9	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.10	Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.11	Third party issues are referred to appropriate persons in accordance with established procedures.
	1.12	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Hydro test transmission pipeline construction	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carry out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, hydro-testing and use of power tools, techniques and practices are conducted safely in accordance with given instructions and requirements.
	2.4	Work area is isolated, made safe and hydro-testing of pipeline construction is carried out in accordance established procedures.
	2.5	Hydro-testing of pipeline construction is carried out efficiently, in an agreed timeframe and to the required standard, without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	Procedures for referring non-routine events to the immediate authorised persons for directions are

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ELEMENT	PERFORMANCE CRITERIA	
		followed.
	2.8	Remedial action associated with hydro-testing of transmission pipeline construction is dealt with in accordance with established procedures.
	2.9	Routine quality checks are carried out in accordance with work instructions
3 Complete basic hydro-testing activities and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work site is rehabilitated, cleaned up and made safe in accordance with established procedures.
	3.3	Tools, equipment and any surplus resources and materials are, cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures.
	3.5	Work completion records, report forms and data sheets are completed accurately and provided to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for using of equipment and tools to perform work in a transmission pipeline construction industry work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the Required Skills and Knowledge required is provided below. It forms an integral part of this unit.

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REQUIRED SKILLS AND KNOWLEDGE

KS01-G332A Hydro-testing for transmission pipeline

Evidence shall show an understanding of hydro-testing gas transmission pipeline in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects

T1. Relevant legislation, regulations, codes

- AS2885

T2. Enterprise procedures, plans and drawings

T3. Relevant Safety and Environmental hazards and mitigation measures

T4. Fundamentals of Hydrotesting

T5. Hydrotesting requirements and procedures

T6. Equipment, tools, materials and plant for hydrotesting

T7. High pressure equipment hoses, whip checks

T8. Exclusion zone awareness , including perimeter maintenance

T9. Signage requirements for using high pressure equipment-

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full

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can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Workplace Health and Safety/Occupational Health and Safety workplace procedures and practices

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including the use of risk control measures as specified in the Performance Criteria and range

- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Carry out hydro-testing of transmission pipeline construction work activities as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Operate in a safe manner • Practical working knowledge of ASNZ2885.5 • Understand and respond to instructions relayed by Hydro Test Engineers (NATA Accredited Auditor)
B	All	• Competent Operation of Fill and Squeeze Pumps • Competent Operation of Pressure Pumps • Competent Operation of Break Tanks • Competent Operation of Victullic Piping • Competent Operation of Dead Weight Tester

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		• Competent Operation of Temperature Probes • Competent Operation of Test Shack • Competent Operation of Gauges • Competent Operation of Compressors • Competent Operation of Data Collectors • Competent Operation of Test Headers • Competent Operation of Cleaning Headers • Competent Operation of Gauging Plate • Competent Operation of Drying Plant • Competent Operation of After Cooler • Competent Operation of Pig • Competent Operation of Chart Recorder • Competent Operation of Generator • Competent Operation of Lighting Towers
C	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

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- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in context of and specific resources for assessment, evidence should show demonstrated competency in maintaining pipeline easements.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Skills and Knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG136A	Carry out transmission pipeline construction work activities

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UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation hydro-testing on gas transmission pipelines construction worksites in accordance with relevant legislation, regulation, codes and procedures autonomously on at least two occasions. This includes the use of includes Fill and Squeeze Pumps, Pressure Pumps, Break Tanks, Victullic Piping, Dead Weight Tester, Temperature Probes, Test Shack, Gauges, Compressors, Data Collectors, Test Headers, Cleaning Headers, Gauging Plate, Drying Plant, After Cooler, Pig, Chart Recorder, Generator, Lighting Towers

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

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RANGE STATEMENT

- Crane Truck
- Side Boom
- Rough Terrain Crane
- Fill and Squeeze Pumps
- Break Tanks
- Victullic Piping
- Dead Weight Tester
- Temperature Probes
- Test Shack
- Gauges
- Compressor
- Data Collectors
- Test Header
- Cleaning Headers
- Gauging Plate
- Drying Plant
- After Cooler
- Pig
- Chart Recorder
- Generator
- Lighting Towers

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Transmission discipline.

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UEGNSG333A Work in proximity of transmission pipeline construction plant and equipment

Modification History

This is a new unit which replaces the UEG11 unit UEGNSG323A Operate transmission pipeline construction plant and equipment

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers working in proximity of gas transmission construction plant and equipment in accordance with relevant legislation, code, regulations and procedures.

It encompasses the operating parameters and safety issues of a range of specific plant and equipment dedicated to the construction of transmission pipelines.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any safe transmission pipeline construction work site, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry

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UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to work in proximity of plant and equipment for transmission pipeline construction	1.1 WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2 Relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.3 WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed
	1.4 Easement is inspected and assessed to determine relevant requirements in accordance with standard operating procedures
	1.5 Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.6 Scope of responsibility under the relevant work permit and/or relevant notification is received and confirmed with relevant persons according to requirements and established procedures
	1.7 Equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for operation and safety
	1.8 Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.9 Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.10 Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.11 Third party issues are referred to appropriate persons in accordance with established procedures.

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ELEMENT	PERFORMANCE CRITERIA
	1.12 Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Work in proximity of plant and equipment for transmission pipeline construction	2.1 WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2 Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3 Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements
	2.4 Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.5 WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.6 Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.7 Remedial action associated with constructing pipeline easements is dealt with in accordance with established procedures
	2.8 Routine quality checks are carried out in accordance with work instructions
3 Complete work and relevant documentation	3.1 WHS/OHS risk control work completion measures and procedures are followed.
	3.3 Work site is tidied and made safe in accordance with established procedures
	3.4 Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.5 Appropriate persons are notified of work completion according to

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ELEMENT	PERFORMANCE CRITERIA
	established procedures
	3.6 Work completion documentation is completed accurately and provided to appropriate persons in accordance with and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G333A Application of Plant Equipment in the Construction of Transmission Pipeline

Evidence shall show an understanding of working in proximity of transmission pipeline construction plant and equipment in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Plant and equipment types, purpose and basic operation

- Compressors
- Grader
- Dozer
- Excavator
- Vacuum lift
- Bending machine
- Bending machine & mandrel
- Internal line up clamp
- Tack Rig
- Side Boom
- Roller Cradles
- Trenching Equipment
- Bucket Wheel trencher
- Grit Blasting Unit
- Thermal Coil

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- Padding machines
- Mitsu Bucket
- Crane (Rough Terrain)
- Crane Truck
- Flood pump
- Squeeze pump
- Drying Plant
- Heavy duty mulching machines

T2. Safe operating parameters

- hand signals
- safety hazards

T3. Relevant legislation, regulations and codes

- Licencing requirements

T4. Enterprise procedures

T5. Construction sequence

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

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Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range

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- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Working in proximity of transmission construction plant and equipment in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.

    B. Identifying the plant and equipment and their safe operating parameters/requirements

    C. Working in proximity of transmission construction plant and equipment in accordance with requirements

    D. Completing required documentation and reporting.

    E Dealing with unplanned events by drawing on required skills and knowledge, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.

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- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required Skills and Knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit.

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to working in proximity of transmission construction plant and equipment in accordance with relevant legislation, code, regulations and procedures. This will include the following range of plant and equipment:

Backfill	At least 1 of the listed items of plant and equipment	Padding Machine Excavator Grader Dozer Front End Loader
Clear and Grade	At least 1 of the listed items of plant and equipment	Dozer Excavator Grader Backhoe Front End Loader
Ditching	At least 1 of the listed items of plant and equipment	Excavator Rock Saw Bucket Wheel Trencher
Hydro Testing	At least 1 of the listed items of plant and equipment	Crane Truck Side Boom Rough Terrain Crane
Joint Coating	At least 1 of the listed items of plant and equipment	Sand Blasting Rig (Skid Steer) Over Ditch Wrapping Machine Thermal Coil
Lower and Lay	At least 1 of the listed items of plant and equipment	Side Boom with Roller Cradles Excavator

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RANGE STATEMENT

Mechanical (minor maintenance)	At least 4 of the listed items of plant and equipment	Excavator and Vacuum Lift Bending Machine and Mandrels Internal Line up Clamp Tack Rig Side Boom Roller Cradles Rock Saw Bucket Wheel Trencher Thermal Coil Over Ditch Wrapping Machine Padding Machines Mitsu Bucket
String and bend	At least 1 of the listed items of plant and equipment	Excavator Bending Machine with Mandrels Side Boom
Welding	At least 1 of the listed items of plant and equipment	Side Boom Internal Line up Clamp Tack Rig

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Transmission discipline.

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UEGNSG342A Maintain pipeline easements

Modification History

This unit replaces UEGNSG302B Maintain pipeline easements

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers maintaining gas pipeline easements to ensure the easement is secure and effective in accordance with relevant legislation, standards, codes and established procedures.

It encompasses inspecting and maintaining the physical condition of the easement and associated infrastructure (signage, fencing and gates) through vegetation, erosion and encroachment management.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where utility industry pipeline easements exist, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Inspect and prepare to maintain pipeline easement	1.1	Work instructions are received and confirmed
	1.2	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.3	Topographical and geographical maps are confirmed and relevant requirements and established procedures for the site are discussed with relevant persons to establish and confirm the work schedule.
	1.4	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed
	1.5	Easement is inspected and assessed using appropriate mediums and civil activities to determine the maintenance required in accordance with standard operating procedures relevant requirements
	1.6	Suggestions to assist with maintaining pipeline easements are made to others involved in the work
	1.7	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored clear according to established procedures
	1.8	Scope of responsibility under the relevant work permit/authorization is received and confirmed with relevant persons according to requirements and established procedures
	1.9	Tools, equipment and personal protective equipment required to carry out the work are identified, obtained and checked for operation and safety
	1.10	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures
	1.11	Relevant responsibilities associated with related work safety and emergency procedures for an incident at the worksite are checked confirmed
	1.12	Client issues are referred to appropriate persons in accordance with industry and community standards
	1.13	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Maintain pipeline easement and surrounding environment	2.1	WHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.2	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and requirements
	2.3	Work area is isolated and made safe and civil activities and maintenance of pipeline easements is carried out in accordance with given instructions and established procedures
	2.4	Easement maintenance is carried out efficiently in an agreed timeframe and to required standards with a minimum of waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles
	2.5	WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.6	Procedures for referring non-routine events to

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ELEMENT	PERFORMANCE CRITERIA	
		the immediate authorised persons for directions are followed
	2.7	Remedial action associated with maintaining pipeline easements are dealt with in accordance with established procedures
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	WHS risk control work completion measures and procedures are followed.
	3.2	Pipeline easement is monitored to ensure pipeline integrity and the work undertaken is checked against work schedule and anomalies reported to authorised persons in accordance with established procedures
	3.2	Work site is rehabilitated, cleaned up and made safe in accordance with established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for maintaining pipeline easements to perform work in a utilities industry work environment.

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REQUIRED SKILLS AND KNOWLEDGE

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the essential knowledge and associated skills (EKAS) required is provided below. It forms an integral part of this unit.

KS01-G342A Pipeline easement maintenance

Evidence shall show an understanding of inspecting and maintaining pipeline easements in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, regulations, standards and codes

T2. Easement maintenance requirements under AS2885

T3. Easement access

- topographical and geographical maps
- pipeline route and appropriate method for accessing pipeline
- enterprise procedures, plans and drawings

T4. Relevant safety hazards and mitigation measures

- Vehicles in rough terrain
- Natural emergencies – e.g. bushfire
- Fauna control – e.g. snakes and ticks
- Environmental and cultural hazards
- PPE and MSDS/SDS

T5. Inspect pipeline easement

- procedures
- tools and equipment
- gathering evidence of required maintenance

T6. Maintenance of signage, access points and fencing

T7. Vegetation control and weed mitigation

- regulations
- monitoring
- maintenance procedures
- tools and equipment

T8. Erosion control

- regulations
- causes
- monitoring
- prevention and maintenance procedures
- tools and equipment

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REQUIRED SKILLS AND KNOWLEDGE

T9. Civil works activities which may affect pipeline easement (laying geo-textile, gabion baskets, concreting, reseeding of environment, cased crossings)

T10. Reporting and documentation

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing

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on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
  - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

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- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Inspecting and maintaining pipeline easements as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Requirements	All	• OHS and environmental legislative requirements • Erosion control documentation • Vegetation control documentation • Pipeline alignment drawings • Topographical maps • Geographical maps • Pipeline access route manuals • MSDS information
B. Maintenance procedures	All	• Laying of geo-textile • Gabion baskets • Concreting • Reseeding the environment • Cased crossings • Fauna and flora control • Communicating with third parties
C. Unplanned events	At least one occasion	Respond to an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above

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		listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit
- Appropriate environmental regulation and work practices
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of **8.4)**

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assessment

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

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RANGE STATEMENT

This Competency Standard Unit shall be demonstrated in relation to inspecting and maintaining of pipeline easements.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Records/documentation
- Third parties
- Civil activities
- Reports

Unit Sector(s)

Utilities Industry

Competency Field

Competency Field **11)**

Transmission.

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UEGNSG344A Commission or decommission gas transmission pipelines

Modification History

This unit replaces the UEGNSG304B Commission or decommission gas transmission pipelines

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the commissioning and decommissioning of gas transmission pipelines in accordance with relevant legislation, standards, codes and established procedures.

It encompasses fundamentals of commissioning/ decommissioning in accordance with Australian Standard AS2885; relevant legislation controls; planning, undertaking and completing an activity; enterprise procedures; and stakeholder and record management.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where gas transmission operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the

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Prerequisite Unit(s) **4)**

	gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare and plan to commission/decommission gas transmission pipelines	1.1	Work schedule(s), including drawings, plans, requirements, established procedures and material lists are received, analysed and confirmed if necessary by site inspection
	1.2	WHS/OHS and environmental measures for the sites are identified, obtained and understood.
	1.3	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.4	WHS/OHS, environmental and sustainable energy policies and procedures are obtained and confirmed and communicated
	1.5	Work is prioritised and sequenced by management following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.6	Hazards are identified, WHS/OHS risks are assessed and control measures are prioritised, implemented and monitored against the work schedule and established procedures.
	1.7	Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.8	Scope of responsibility under the relevant work permit/authorization is received and confirmed with relevant persons according to requirements

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ELEMENT	PERFORMANCE CRITERIA	
		and established procedures
	1.9	Resources including persons, equipment, tools, materials, plans, specifications and personal protective equipment required to carry out the work are identified, scheduled and obtained and checked for operation and safety
	1.10	Relevant persons at worksite are confirmed to be current in First Aid and other related work procedures according to requirements
	1.11	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work by management
	1.12	Pipeline in check for readiness (cleaned, pigged, bypassed, etc.) for commissioning/ decommissioning
	1.13	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.14	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed in accordance with established procedures
	1.15	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2 Commission/decommission gas transmission pipelines	2.1	WHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools,

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ELEMENT	PERFORMANCE CRITERIA	
		techniques and practices are conducted safely accordance with given instructions and requirements
	2.4	Commissioning/ decommissioning of gas transmission pipelines is carried out efficiently in an agreed timeframe and to required standards with a minimum of waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles
	2.5	Commissioning/decommissioning of gas transmission pipelines is carried out in accordance with the work schedule and to requirements/established procedures
	2.6	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	Adjustments are made for unplanned events in commissioning/decommissioning of gas transmission pipelines are undertaken within the scope of established procedures
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed
	2.9	Reports and ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed
	3.2	Tools and equipment appropriate to the testing requirements are selected and work undertaken is checked against works schedule for conformance with requirements, anomalies are reported in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	3.3	Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.4	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.5	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and stored securely in accordance with established procedures
	3.6	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.7	Final inspections are undertaken and work completion documentation is finalised and processed accurately and provided to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the commissioning/decommissioning of gas transmission pipelines.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the Required Skills and Knowledge required is provided below. It forms an integral part of this unit.

KS01-G344A Transmission pipeline commissioning and decommissioning

Evidence shall show an understanding of commissioning and de-commissioning gas transmission pipelines in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Legislative, standards, codes and OHS and environmental requirements

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REQUIRED SKILLS AND KNOWLEDGE

- requirements for and use of qualified specialists
- establishing the appropriate worksite

T2. Site preparation

- identify equipment, pipes, fittings, purge substances
- pipeline and component specifications
- apply purge volume and time tables and charts

T3. Environmental and safety hazards

- risks and control measures
- site emergency procedures

T4. Fundamentals of pipeline commissioning/decommissioning

- Purpose
- Bring pipeline systems online, taking systems offline
- Purging the pipe system
- Ensuring security of supply
- Testing and sealing of pipes
- Fit bypass apparatus
- Regulating and monitoring system pressure
- Hazards and risks

T5. Tools and test equipment for commissioning and decommissioning

- Types, applications, use, handling, maintenance and storage

T6. Testing, adjusting, calibrating and repairing systems

- requirements procedures, precautions

T7. Enterprise procedures for de-commissioning

- bringing/taking pipeline system on/off line
- effect on distribution system
- fitting bypass apparatus ensuring continuity of supply
- stopping off and isolation of pipelines using internal and external stop off equipment
- monitoring of system pressure at appropriate locations depending on network design and operating conditions
- regulating and maintaining system pressures
- test and verify

T8. Enterprise procedures for commissioning

- checking pipework is ready (tested, pigged, etc.)
- purging the pipe system using a variety of media and testing procedures
- testing and sealing of pipelines,
- odour level requirements

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REQUIRED SKILLS AND KNOWLEDGE

- effect on distribution system
- monitoring of system pressure at appropriate locations depending on network design and operating conditions
- regulating and maintaining system pressures
- equipment faults
- test and verify

T9. Stakeholder and record management

- Communications and approvals
- Recording and reporting

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

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The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated

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environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Commission and de-commission gas transmission pipelines as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Relevant knowledge of AS 1697 • Relevant knowledge of AS 2885 • Relevant knowledge of AS 2865 • Interpret technical drawings and symbols. • Documentation complete/correct • Approvals from authorities complete/correct. • Emergency Response procedures • Environmental Code of Practice applied. • Communicate with other authorities and Stakeholders.
B	At Least 2	• Steel pipeline coating repair • Steel pipeline coating testing • Steel field joint coating
C	All	• Purging Procedures • Compliance with AS 2885 • Operation of Gas Detector • Isolate, vent and purge gas

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		pipeline systems • Communication with authorities • Environmental issues.
D	At Least 2	• City Gate operation (Pressure Regulator knowledge) • Line Valve operation • Pressure control procedure
E	All	• Basic understanding only: • Trenching • Shoring
F	All	• Basic understanding only: • Pipeline Cathodic Protection. • Relevant electrical safety.
G	All	• Pressure is according to specifications • Final Inspections are carried out • Site rehabilitation carried out • Sign Off Procedures carried out
H	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.

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- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply environmental policies and procedures

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	in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to commissioning/ decommissioning gas transmission pipelines.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate Persons
- Tools, Materials and Equipment
- Appropriate Authorities
- Pipeline Systems
- Documentation
- Tools, materials and equipment

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Transmission.

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UEGNSG346A Launch and recover PIGs in gas transmission pipelines

Modification History

This unit replaces UEGNSG306B Pipeline pigging in gas transmission pipeline

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the preparation, launch and recovery of PIGs (Pipeline Inspection Gauge) in gas transmission pipelines to inspect and ensure the pipeline is clean and dry with no obstructions, in accordance with relevant legislation, standards, codes and established procedures.

It also encompasses liaising with stake holders; analysing and interpreting the pigging data: testing and inspecting; using manufacturer's and company procedures.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission pipelines, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

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License to practice **3)**

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare and plan for pigging gas transmission pipeline	1.1 WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2 Relevant requirements and established procedures for the work are communicated to all

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ELEMENT	PERFORMANCE CRITERIA	
		relevant to establish and confirm the work schedule, including drawings, plans, requirements and established procedures
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are obtained, confirmed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritized, implemented, and monitored according to established procedures
	1.6	Scope of responsibility under the relevant work permit and/or relevant notification is obtained and confirmed with relevant persons to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in a safe working order
	1.8	Relevant responsibilities associated with First Aid and other related work procedures for an incident are checked and confirmed
	1.9	Liaison and communication issues with stakeholders are carried out effectively.
	1.10	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
	1.11	Site PIG, station and pipeline are prepared according to procedures to minimise risk and damage in accordance with established procedures
	1.12	Persons participating in the work, including plant operators and contractors are fully briefed

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ELEMENT	PERFORMANCE CRITERIA	
		and respective responsibilities confirmed where applicable in accordance with established procedures
	1.13	Signage, barriers and warning devices are positioned in accordance with requirements
2 Launch and recover transmission pipeline PIG	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools are performed safely according to procedures, codes and legislation
	2.4	The launch, tracking and recovery of a gas transmission pipeline PIG is carried out in accordance with the work schedule and to established procedures
	2.5	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6	Hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.7	Data/results from transmission pipeline pigging operations is gathered/retrieved and analysed to determine internal pipeline conditions in accordance with requirements and established procedures
	2.8	Tests and inspecting of the pipeline and pigging equipment is conducted in accordance with requirements and established procedures
	2.9	Procedures for referring non-routine events to the immediate authorized persons for direction

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ELEMENT	PERFORMANCE CRITERIA	
		are followed.
	2.10	Known solutions to a variety of problems are applied
	2.11	Ongoing checks of quality of the work are undertaken in accordance with given instructions and procedures
3 Re-establish transmission pipeline to operational conditions and notify of completion of work	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Inspection of the received PIG is undertaken to determine the wear sustained to the PIG material and anomalies are reported in accordance with established procedures
	3.3	Accidents and injuries are reported in accordance with established procedures where applicable
	3.4	Waste materials are safely disposed of and the work site is rehabilitated, cleaned up and made safe in accordance with established procedures
	3.5	Tools, equipment and any surplus resources and materials are, cleaned, checked and securely stored.
	3.6	Appropriate persons are notified of work completion according to established procedures
	3.7	Relevant work permit(s) are signed off and equipment is returned to service in accordance with procedures
	3.8	Data is accurately recorded and work completion records, reports as modified drawings and documentation and information are finalised and processed and appropriate persons notified

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the launching and recovering of a pig.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G346A PIG launch and recovery

Evidence shall show an understanding of the assembly, launch and recovery of PIGs in gas transmission pipelines to ensure the pipeline is clean and dry with no obstructions in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Types of PIGs and applications

T2. WHS/OHS and environmental requirements for using PIGs

- Risk assessment
- Hazards including high water and air pressure/velocity
- Hazardous and flammable materials
- Noise

T3. Pipeline preparation

- Relevant authorities and persons to be notified and approval requirements
- Types of pipeline materials including steel, plastic, etc.
- New and existing pipelines and stations
- Safety requirements and procedures
- Manufacturers operating instructions and established procedures
- Relevant legislation, standards and codes
- Traps launchers and receivers installed
- Water and waste disposal requirements
- Directional gates/bars installation
- PIG pushing agent (water or air) requirements
- Pipeline Pigging sequence
- Additional preparation for de-commissioned pipelines
- Purging
- De-scaling

T4. Relevant documentation, reporting and communication for Pigging

T5. Pigging a pipeline

- Required set up
- Insertion/launching

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REQUIRED SKILLS AND KNOWLEDGE

- Monitoring and communication
- Checking the cleanliness/dryness of the pipe
- Capture/recovery
- Restoring receiver to normal operation
- Analysis and interpretation of data captured through the pigging process
- Traps
- Anomalies such as ‘stuck pig’
- Dangers
- Waste disposal

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry’s preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

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The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded

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result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Pigging gas transmission pipelines in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Interpret technical drawings and symbols • Emergency response procedures in place • Communication with stakeholders • Coordinate work party • Carry out job safety analysis • Obtain work permit • Relevant knowledge of AS 2865
B	At least 3	• Demonstrate knowledge of: • Cleaning pigs • Gauging pigs • Drying pigs • Intelligent pigs • Pig travel time calculations
C	All	• Isolate, vent and purge gas pipeline systems • Operation of gas detector • Operate service locator

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		• Monitor Hot work Permits
D	`All	• Prepare station and pig trap for launch • Prepare trap for receiving • Launch pig • Receive and recover pig • Return station to normal operation
E	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in, Context of and specific resources for assessment, evidence should show demonstrated competency of Pipeline pigging in gas transmission pipeline.

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Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to launching and recovering PIGs in gas transmission pipelines.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Equipment

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **10)**

Transmission.

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UEGNSG347A Perform routine maintenance on transmission pipeline facilities and equipment

Modification History

This unit replaces UEGNSG307B Perform routine maintenance on transmission pipeline facilities and equipment.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers minor routine maintenance of pipeline facilities and associated equipment.

It encompasses using equipment, tools and testing devices; performing routine maintenance; identifying the types of faults; completing the appropriate documentation and reports in accordance with requirements.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission pipeline facilities and equipment, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

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License to practice **3)**

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

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Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the

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Employability Skills **5)**

qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare and plan for routine maintenance on transmission pipeline facilities and equipment	1.1	Work schedule including drawings, plans, requirements, established procedures and material lists are received and checked
	1.2	Relevant technical, WHS/OHS and environmental requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3	Work is prioritised and sequenced following consultation with stake holders in accordance with established procedures
	1.4	Hazards are identified, WHS/OHS risks control measures for identified hazards are prioritised, implemented and monitored to achieve as low as reasonably practicable (ALARP) risk level.
	1.5	The facilities/equipment are made safe by ensuring it is safely isolated, depressurised, tagged and locked out and a permit to work is obtained to access and perform work according to established procedures.
	1.6	Resources including appropriately licensed persons, equipment, tools and personal

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ELEMENT	PERFORMANCE CRITERIA	
		protective equipment required for the job are identified, obtained and checked for safety and operation.
	1.7	All members of the work party are suitably qualified and experienced to perform the required work activities.
	1.8	Liaison and communication issues with stakeholders are performed effectively.
	1.9	Site is prepared according to the work schedule to minimise risk and damage in accordance with established procedures.
	1.11	Members of the work party are fully briefed about the permit conditions and respective responsibilities confirmed
	1.12	Signs, barriers and warning devices are positioned in accordance with requirements
2 Perform routine maintenance on transmission pipeline facilities and equipment	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools are performed safely according to procedures, codes and legislation
	2.4	Routine maintenance of transmission pipeline facilities and equipment is performed in accordance with procedures in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.5	Hazard warnings and safety signs are complied with and WHS/OHS risks are reported to the immediate authorised persons for directions

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ELEMENT	PERFORMANCE CRITERIA	
		according to established procedures
	2.6	Unplanned events are safely resolved in accordance with established procedures.
	2.7	Known solutions to a variety of problems are applied using required Knowledge and Skills
	2.8	Ongoing checks of quality of the work are undertaken in accordance with established procedures.
3 Complete work and relevant documentation	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported in accordance with established procedures.
	3.2	Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with established procedures.
	3.4	Tools, equipment and any surplus resources and materials are cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Work completion records, reports as installed, modified, drawings, documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for

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REQUIRED SKILLS AND KNOWLEDGE

performing routine maintenance on transmission pipeline facilities and equipment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G347A Transmission pipeline maintenance

Evidence shall show an understanding of the performing routine maintenance on transmission pipeline facilities and equipment in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant WHS/OHS, emergency and environmental requirements and procedures

T2. Relevant Australian Standards, codes and regulations requirements

T3. Types of pipeline facilities and equipment to be inspected and tested

T4. Tools, equipment, instruments, PPE and emergency equipment required

T5. Manufacturers specifications, manuals, part lists, calibration forms, checklists

T6. On site risk assessment

T7. Leakage surveys and pin pointing gas leaks

T8. Isolation, depressurisation, tagging and lockout of pipeline facilities and equipment requirements and procedures, this includes valves, flanges, fittings, markers and signs

T9. Routine inspection and testing of pipeline facilities and equipment requirements and procedures.

T10. Maintenance activities requirements and procedures

T11. Faults managed during routine maintenance

T12. De-isolation all sources of energy, removal of tags and locks and return to normal operation requirements and procedures

T13. Communication and recording/reporting documentation requirements and procedures

Evidence Guide

EVIDENCE GUIDE

8) *The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.*

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

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Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Perform routine maintenance on transmission pipeline facilities and equipment in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**

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A.	All	• Relevant knowledge of AS 2885 • Relevant knowledge of AS 2865 • Interpret technical drawings and symbols. • Documentation (permits, schedules) • Perform effective Risk assessments • Communicate effectively with stakeholders • Response effectively to Emergencies • Comply with Environmental Codes of Practice
B.	All	• Approved isolation, venting, purging and re-pressurisation procedures • AS 2885 requirements • Correctly operate gas detectors • Communication effectively with stakeholders • Protect the environment
C.	At Least 2	Basic knowledge of: • City Gate operation. • Line Valve operation • Pressure control stations
D.	All	Basic understanding of: • Cathodic Protection. • Electrical safety. • Electrical bonding requirements
E.	All	• Restore all site isolations • Perform site inspections • Update Drawings/plans • Complete forms and Reports

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		• Close work permits
F.	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in performing routine maintenance on transmission pipeline facilities and equipment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods

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given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for*

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RANGE STATEMENT

different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to perform routine maintenance on transmission pipeline facilities and equipment.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Equipment
- Tools, equipment and testing devices
- Types of faults
- Documentation
- Reports

Unit Sector(s)

Gas supply industry

Competency Field

Transmission.

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UEGNSG348A Supervise the operation of plant and equipment for the construction of gas transmission pipelines

Modification History

This unit replaces UEGNSG328A Supervise the operation of plant and equipment for the construction of transmission pipelines

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the supervision of personnel who operate plant and equipment used in the construction of transmission pipelines.

This unit encompasses the functions undertaken for transmission pipeline construction; interpreting instructions; the capabilities and the limits of plant, equipment and tools; and communication and supervision.

It also includes supervising the operations to ensure workplace/occupational health and safety, environmental and cultural heritage issues are effectively addressed in the transmission pipeline construction process.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any gas transmission pipeline construction site, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

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Prerequisite Unit(s) **4)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG004A	Locate, prove and protect utility assets
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the

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Employability Skills	**5)** qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare work schedule for the use of plant and equipment	1.1	Work instructions are received and confirmed
	1.2	Relevant WHS/OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.3	Work schedule is checked to ensure the resources and skills required have been checked for compliance in accordance with standard operating procedures and manufacturers specifications
	1.4	Discussion occurs with all persons to establish and confirm work schedule, responsibilities and capabilities
	1.5	Information regarding previous work activities is sought and appropriate actions taken with regard to current work schedule and use of plant and equipment
	1.6	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures
	1.7	Scope of responsibility under the relevant work permit are received and confirmed according to requirements and established procedures with relevant persons
	1.8	Relevant responsibilities associated with first aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures
2 Supervise operations as per the work schedule	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Instructions are provided for any remedial action associated with plant and equipment operation according to established procedures
	2.3	Instructions are provided to operators to ensure the work area is made safe in accordance with established procedures
	2.4	Hazards and risks related to safety and plant operation are identified through the application of operational knowledge and action is taken in accordance with established procedures
	2.5	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.6	Remedial action is taken using known solutions to ensure work schedule is met
	2.7	Supervision of plant and equipment operation is undertaken and ongoing checks are undertaken in accordance established procedures
3 Complete work and relevant documentations	3.1	Plant and equipment usage is checked against the work schedule and anomalies are reported to authorised persons in accordance with established procedures
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance

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ELEMENT	PERFORMANCE CRITERIA	
		with established procedures
	3.3	Supervision of shutdown procedures is performed in accordance with established procedures to ensure environmental compliance and condition of plant and equipment is maintained
	3.4	Tools, plant and equipment and any surplus resources and materials are, where appropriate, cleaned, checked and securely stored
	3.5	Appropriate persons are notified of work completion according to established procedures
	3.6	Work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for using of equipment and tools to perform work in a utilities industry work environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G348A Transmission pipeline construction plant and equipment supervision

Evidence shall show an understanding of supervising the operation of plant and equipment for the construction of gas transmission pipelines in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant state or territory legislation, regulations and codes

- requirements
- procedures

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REQUIRED SKILLS AND KNOWLEDGE

T2. Supervisory and leadership

- techniques
- work and equipment plans and schedules
- workforce supervision
- contingency planning and management
- project and time management
- diagnostic techniques

T3. Information and communication

- interpreting, applying and communicating information:
  - manufacturers manuals
  - requirements and procedures
  - technical information and drawings
  - site plans
  - basic geological and technical data
- site communication techniques
  - hand signals
  - satellite phones
  - radios
- stakeholders

T4. Transmission pipe construction techniques and equipment

- equipment and tools
  - characteristics and operation
  - technical capabilities
  - applications and limitations
- construction activity procedures
- manual handling techniques used in accordance with WorkSafe standards
- site and equipment safety requirements and procedures
  - Risk assessment
  - PPE
  - Hazardous materials
  - Confined spaces
  - Gas detection
  - MSDS
  - Spill kits
  - Emergency and incident response
- quality assurance procedures

T5. Environmental requirements and procedures

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REQUIRED SKILLS AND KNOWLEDGE

T6. Cultural and Heritage awareness requirements and procedures

T7. Construction materials: properties, characteristics and applications

T8. Relevant documentation, forms and reports

Evidence Guide

EVIDENCE GUIDE

8) *The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.*

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered

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will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of

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contexts from the prescribed items below:

- Supervise the operation of plant and equipment for the construction of gas transmission pipelines in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	Application of organisational management systems and procedures for occupational health and safety which includes: • identifying hazards, • managing risk through the incorporation of effective control measures.
B	All	Working Knowledge of the standard operating procedures and the effective and safe use of Transmission Pipeline Construction small plant and equipment including the following: • General concrete mixer • General trolley • Non pressurised pumps and hoses • Wheelbarrows • Traffic barriers • Extra low voltage lighting equipment • Hand held tools • Gas detectors • Holiday detection equipment • Power tools • Pressurised pumps and hoses • Hand wrapping machines

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C	All	Ability to communicate instructions to transmission pipeline construction workforce, contractors and stakeholders, including communication with ground crew during operations.
D	All	Working Knowledge of relevant legislation, regulations, codes of practice, standards, policies, procedures and permits pertaining to transmission pipeline construction operations.
E	All	Working knowledge of the relevant cultural heritage requirements for transmission pipeline construction operations.
F	All	Working Knowledge of relevant occupational health and safety requirements for Transmission Pipeline Construction Operations including the following: • Procedures for using dial before you dig service or its equivalent. • Location of other services such as utilities and rail and other transport infrastructure. • Effectively use MSDS sheets • Prepare Job Hazard Analyses • Implement control measures for identified Hazards • Hazardous area requirements adhered to • Correct use of PPE appropriate to Gas Industry • Hazard identification in pipeline construction • Safe manual handling techniques
G	All	Read and interpret transmission construction maps and drawings including the identification of

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		key information such as symbols.
H	All	Ability to read, interpret and instruct subordinate staff on transmission construction procedures and other documentation.
I	All	Demonstrate a strategy for the coordination of an effective response to a transmission pipeline construction emergency.
J	All	Demonstrate a strategy for protecting the environment whilst constructing a transmission pipeline that incorporates the following items: • Installation of siltation control methods such as straw and synthetic bails • Curb side filter rolls • Erosion prevention • Weed spread mitigation • Application of MSDS information • Noise control techniques • Odourant handling and testing processes • Excavation restoration, compaction and seeding • Applying green tagging for flora and fauna habitat • Application of cultural heritage awareness and protection requirements for a pipeline construction site
K	All	Demonstrate a strategy for dealing with an environmental incident that includes the following items: • Control and minimise the impact of an environmental incident • Control environment incident

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		• Incident Investigation • Applying incident reporting and notification procedures • Review environmental incident • Make recommendations to prevent reoccurrence • Implement recommendations
L	All	Working knowledge of transmission pipeline construction functions which include the following: • Backfill • Clear and Grade • Ditching • Hydro Testing • Joint Coating • Lower and Lay • Mechanical (Minor Maintenance) • String and Bend • Welding
M	All	Working Knowledge of the safe and efficient operation, including regulatory requirements, and maintenance schedule for large plant and equipment including the following: • Dozer • Excavator • Grader • Backhoe • Front End Loader • Side Boom • Internal Line Up Clamp • Tack Rig: Dozer or Skid Steer • Grit Blasting Rig: • Side Booms with Roller Cradles • Crane Truck: Heavy Rigid Truck

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		• Rough Terrain Crane Note: the candidate will be expected to ensure that the equipment is operated by appropriately authorised/licensed personnel.
N	At Least 2 of the items in the list	Working Knowledge of the safe and efficient operation, including regulatory requirements, and maintenance schedule for large plant and equipment including the following: • Excavator with vacuum lift • Bending Machine with Mandrel • Rock Saw • Bucket Wheel Trencher • Over ditch Wrapping Machine • Thermal Coil • Padding Machines • Traffic Control Note: the candidate will be expected to ensure that the equipment is operated by appropriately authorised/licensed personnel.
O	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

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- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in context of and specific resources for assessment, evidence should show demonstrated competency in maintaining pipeline easements.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required Knowledge and Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

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RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to supervising the operation of transmission pipeline construction plant and equipment.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons (3)
- This unit contains Employability Skills
- Documentation (2)
- Documentation (3)
- This unit contains Employability Skills
- Emergency equipment
- Emergency Response Manual
- Established procedures and requirements
- Inspect
- Legislation
- OHS policies and procedures
- Personal Protective Equipment
- Procedures
- Relevant Regulation and Procedures
- Relevant Sections of Standard Operating Procedures
- Responsibility
- Traffic control
- Work plans/schedules

This unit includes the supervision of transmission pipeline construction that requires operators to conduct functions utilising plant as per the following table:

Backfill	Padding Machine Excavator Grader Dozer Front End Loader

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Clear and Grade	Dozer Excavator Grader Backhoe Front End Loader
Ditching	Excavator Rock Saw Bucket Wheel Trencher
Hydrostatic Testing	Crane Truck Side Boom Rough Terrain Crane
Joint Coating	Grit Blasting Rig Over Ditch Wrapping Machine Thermal Coil
Lower and Lay	Side Boom with Roller Cradles Excavator
Mechanical (minor maintenance)	Excavator and Vacuum Lift Bending Machine and Mandrels Internal Line up Clamp Tack Rig Side Boom Roller Cradles Rock Saw Bucket Wheel Trencher Thermal Coil Over Ditch Wrapping Machine Padding Machines Mitsu Bucket
String and bend	Excavator Bending Machine with Mandrels Side Boom
Welding	Side Boom

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	Internal Line up Clamp Tack Rig

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Transmission discipline.

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UEGNSG349A Carry out surveillance of gas transmission pipelines

Modification History

This unit replaces UEGNSG329A Gas transmission pipeline surveillance.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the ground surveillance of gas transmission pipelines in accordance with relevant legislation, standards, codes and established procedures including the procedures found under Australian and New Zealand Standard AS 2885.3.

It encompasses threat mitigation through identification of system non-conformance; areas to be monitored; inspection of areas; system's pipe work; structures; fittings; equipment; organisational and statutory requirements; and recording and reporting.

Note: Aerial surveillance is not covered by this unit, it is covered by UEGNSG353A Carry out aerial surveillance of gas transmission pipelines

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission pipelines, subject to all Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to carry out surveillance of gas transmission pipelines	1.1 WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2 Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the

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ELEMENT	PERFORMANCE CRITERIA	
		work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are obtained, confirmed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures and surveillance KPIs
	1.5	Hazards are identified, WHS/OHS risks are assesses and control measures are prioritised, implemented and monitored against the work schedule and established procedures.
	1.6	Scope of responsibility under the relevant work authorization, permit and/or relevant notification are received and confirmed with relevant persons according to established procedures.
	1.7	Resources including plant, equipment, tools and personal protective equipment required for gas pipeline surveillance work are identified, obtained checked for correct operation and safety r
	1.8	Liaison and communication issues with authorised persons, authorities and clients are resolved and activities coordinated
	1.9	Persons participating in the work are fully briefed and respective responsibilities confirmed in accordance with established procedures
	1.10	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out surveillance of gas transmission pipelines	2.1	WHS/OHS risk control measures, schedule of work and standard operation procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.

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ELEMENT	PERFORMANCE CRITERIA	
	2.3	Dealings with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.4	The work carried out efficiently, to the required standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles
	2.5	Leakages and damaged pipes and fittings are recorded in accordance with the work schedule and established procedures
	2.6	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	Unplanned events in pipeline surveillance are undertaken within the scope of established procedures
	2.8	System breaches, faults and the operational condition of the network are identified and reported and known solutions are applied in accordance with established procedures
	2.9	Pressure and flow fluctuations outside acceptable limits are investigated and ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
	2.10	The key issues are identified and required solutions/options are developed, communicated and implemented in accordance with established procedures
	2.11	Routine quality checks are carried out in accordance with work instructions

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ELEMENT	PERFORMANCE CRITERIA	
3 Complete work and relevant documentation	3.1	WHS risk control work completion measures and procedures are followed.
	3.2	Work area is tidied and made safe according to established procedures
	3.3	Tools and equipment are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of the work completion, non-conformances and proposed solutions/options are reported in accordance with established procedures
	3.5	Work completion records, reports and documentation are finalized, processed and provided to appropriate persons in accordance with established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the essential knowledge and associated skills (EKAS) required is provided below. It forms an integral part of this unit.

KS01-G349A Transmission pipeline surveillance

Evidence shall show an understanding of carrying out surveillance on gas transmission pipelines in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. OHS and emergency procedures and environmental, cultural and heritage requirements in relation to pipeline surveillance

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REQUIRED SKILLS AND KNOWLEDGE

- Duty of care, risk assessment
- flora, fauna, working outside

T2. Documentation and communication relevant to pipeline surveillance including:

- Topographical and geographical maps (including GPS/GIS information)

T3. Stakeholder rights and responsibilities

T4. Third parties

- land holder engagement
- third party activities
- authorities to stop 3rd party activities
- monitoring of third party civil works including:
  - excavation shoring requirements
  - separation distances
  - flora and fauna control
- third party protection methods

T5. Easements and access rights

- protocols to access to pipeline/easement (including gates)
- impediments to access along easements

T6. Procedures and methods of surveillance

- Information gathering techniques
- Route plans
- Foot patrol OH&S and procedures
- Vehicle patrol OH&S and procedures

T7. Overview of pipeline components and their respective functions

- materials
- siphon points
- filtering and separation
- compressor stations
- Signage and gas markers

T8. Field monitoring of pipeline components.

- variation in surface condition, vegetation or fencing etc.
- development encroachment (clearances)
- pipeline fugitive emissions
- identification
- risk assessment.
- first on site remediation

T9. Identification and documentation of potential encroachment

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REQUIRED SKILLS AND KNOWLEDGE

T10. Pipeline risks managed through surveillance

T11. Escalation processes

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to

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safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below

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- Carry out surveillance on gas transmission pipelines as described in 9.) Range Statement and including:

  A Identifying and interpreting correctly standards, codes, regulations, drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.

  B Selecting correct materials, equipment, tools, personal protection equipment and measurement devices

  C Carry out surveillance on gas transmission pipelines, identifying encroachments and risks and taking appropriate action in accordance with requirements

  D Completing required documentation and reporting.

  E Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency of ground transmission pipeline surveillance.

Assessment of this competency must also be undertaken in either

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an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work basic activities in a gas industry work environment

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to gas transmission pipeline surveillance.

The following constants and variables included in the element/Performance Criteria

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RANGE STATEMENT

in this unit are fully described in the Definitions Section.

- Areas to be monitored
- Inspection of areas
- System's pipe work
- Structures
- Fittings
- Organisational and statutory requirements (3)
- Recording and reporting

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **10)**

Transmission.

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UEGNSG350A First response to a gas facility event

Modification History

This unit replaces UEG11 unit UEGNSG312B First response to a facility event

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the first response to an unplanned gas facility event, assessing the situation and taking appropriate action as directed in accordance with relevant legislation, code, regulations and established procedures.

It encompasses r managing the site response with the following priorities: protect human life, reduce trauma, maintain systems safety, ensure system supply, protect the environment and protect property.

The unit is applied against the procedures found under the latest edition of Australian and New Zealand Standard AS 2885.3. Facilities could include metering, compressors, valves, regulators, heaters, scraper, telemetry and odourisation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas facilities, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are subject to licence regulation directly related to Workplace/Occupational Health and Safety, gas/ industry safety and compliance, industrial relations, environmental protection, telecommunications, anti- discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government

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License to practice **3)**

legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG140A	Apply with environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
HLTFA003	Perform first aid
CPPFES2005A	Demonstrate first attack fire fighting equipment

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan to conduct first response to a gas facility event	1.1	Details of incident are confirmed with supervisor, control centre or radio room
	1.2	Specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined and the extent of preparation for the work is assessed.
	1.3	WHS/OHS and environmental risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	WHS/OHS, environmental and sustainable

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ELEMENT	PERFORMANCE CRITERIA	
		energy policies and procedures related to the work are received and confirmed
	1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe working order
	1.8	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.9	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
	1.10	Status of the system is sought through communication with pipeline control centre in accordance with established procedures
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Conduct a first response to a gas facility event	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	First Aid and other related work procedures are performed according to requirements and established procedures
	2.3	Lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are safely exercised according to requirements
	2.4	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to

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ELEMENT	PERFORMANCE CRITERIA	
		requirements
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and WHS//OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Operating conditions of equipment are monitored through gauge levels, temperatures, flow indicators in order to determine performance of equipment and system
	2.7	Liaison, where appropriate is performed with emergency authorities to ensure the safety of the public and property
	2.8	Fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that is required according to requirements and established procedures
	2.9	Basic solutions to non-routine problems are identified and actioned according to requirements
	2.10	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures
3 Complete response to a gas facility event and relevant documentation.	3.1	Work undertaken is checked against work schedules for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Incidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
	3.4	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	3.5	Relevant work permit(s) are signed off accordance with requirements
	3.6	Works completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for first response to a facility event.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G350A	**Gas facility event response**

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REQUIRED SKILLS AND KNOWLEDGE

Evidence shall show an understanding of first response to a gas facility event in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. WHS/OHS safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures
- Hazardous materials
- MSDS
- PPE

T3. Gas Industry facilities and infrastructure

- regulation and metering facilities
- compression facilities
- gas processing facilities such as coal seam methane plants
- LPG processing facilities
- scraper stations and pigging facilities
- odourisation facilities
- relevant operating policies and procedures

T4. Operation of Gas Industry plant, equipment and materials

- relevant industry engineering terminology and units
- gas pipeline system operating parameters
- gas pipeline systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- relevant inspection and testing procedures for applicable plant and equipment
- start up and shut down processes of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- characteristics of gas flows including compressed and non-compressed operations
- characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- operation of gas analysis and measuring equipment

T5. Gas Industry products, processes and characteristics

- products, characteristics and tolerances including:
  - principles of applicable gas laws
  - gas pressure
  - gas temperature
  - compressibility

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REQUIRED SKILLS AND KNOWLEDGE

- relative density – specific gravity
- hydrocarbon and water dew points
- components of applicable natural gases including LPG
- standard gas conditions
- combustion
- venting and purging principles
- effects of temperature and pressure on infrastructure

T6. Gas industry documents

- signs, symbols terminology and legends as used in gas industry procedures and documents
- gas industry standards, policies and procedures
- basic drawings and diagrams
- Process and Instrumentation Diagrams (PID)
- Facility and pipeline construction and as-built drawings
- Geographical Information System (GIS) drawings and data
- Electrical drawings
- Survey maps
- Pipeline route maps and alignment sheets
- topographical and geographical maps and information.
- workplace forms and reports

T7. Problem solving

- methodology
- possible solutions and probable solutions
- basic problem solving techniques

T8. Confined spaces

- requirements of Legislation, Regulations, Australian Standards and enterprise specific procedures for safe working in confined spaces
- what is a confined space is and the entry safety requirements
- manufacturers' guidelines for the safe use of PPE used in confined spaces
- gas detectors for confined spaces entry
- breathing apparatus and rescue and recovery equipment

T9. Electrical fundamentals for the Gas Industry

- extra low voltage operation
- electrical test equipment for cathodic protection on gas pipelines and facilities
- Electrical risks associated activities within the Gas Industry
- meters and other relevant electrical equipment.

T10. Security breach procedures

- identification of different types of security incidents including but not limited to:

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REQUIRED SKILLS AND KNOWLEDGE

- physical security breaches at gas infrastructure
- threat assessment and management
- confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

T11. Emergency/incident control procedures

- enterprise emergency/incident control policies and procedures
- communication with relevant stakeholders
- application of relevant procedures

T12. Emergency, accident and incident situations

- procedures
- emergency equipment and procedures for a fire
- breathing apparatus
- gas detectors/oxygen monitoring devices
- emergency equipment and procedures for a gas leak or vapour emission reports

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in

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EVIDENCE GUIDE

accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to **8.2)**

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demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carrying out first response on a gas facility in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which**	**Item List**

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	skill is to be demonstrated	
A	All	• Identify threats to the integrity of transmission pipeline facility • Evaluate threats to the integrity of transmission pipeline facility • Initial control of threats to the integrity of transmission pipeline facility • Working knowledge of relevant sections the latest edition of AS2885 • Working knowledge of the station function including identification of abnormal conditions of stations and reporting • Working knowledge of MSDS • Operation of multi meters • Working knowledge of pipeline licence conditions
B	All	• Interpret technical drawings and symbols • Operation of gas detector • Emergency response procedures • Operate pipe locater • Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures • Practical knowledge of the properties of product being transported • Maintain a safe and clean workplace • Work safely with hazardous materials and equipment • Apply safe manual

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		handling techniques • Communicate effectively in the workplace • Negotiation skills • Apply basic planning skills • First Aid certificate level 1
C	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above in, Context of and specific resources for assessment, evidence should show demonstrated competency of first response to a facility event.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

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Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG342A	Maintain pipeline easements
UEGNSG353A	Carry out surveillance of gas transmission pipelines
UEGNSG221A	First on site response to a gas pipeline emergency

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to performing first response to a gas facility event

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RANGE STATEMENT

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawings
- Established procedures
- PPE and First Aid equipment
- Traffic control
- Facility
- Event

Unit Sector(s)

Gas Supply Industry

Competency Field

Competency Field **10)**

Transmission.

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UEGNSG352A Check and report on gas station conditions

Modification History

This unit replaces UEG11 unit UEGNSG313B Check and report on station conditions

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers checking gas station conditions, performing minor maintenance and reporting the status in accordance with relevant legislation, code, regulations and established procedures.

Gas stations could include metering, compressors, valves, regulators, heaters, scraper, telemetry and odourisation facilities.

The competency standard is applied against the procedures found under the latest edition of Australian and New Zealand Standard AS 2885.3.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas stations, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Occupational Health and Safety, Gas Industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training. Commonwealth, State/Territory or Local

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment. Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.
2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan to check and report on gas station conditions	1.1	Work schedules, specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined and the extent of preparation for the work is assessed
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3	WHS/OHS and environmental risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	WHS/OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and

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ELEMENT	PERFORMANCE CRITERIA	
		confirmed in a safe working order
	1.8	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.9	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
	1.10	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Check and report on gas station conditions	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are safely exercised according to requirements
	2.3	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
	2.4	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.5	Operating conditions of equipment are monitored through gauge levels, temperatures, flow indicators in order to determine performance of equipment and system
	2.6	Fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that are required according to requirements and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	2.7	Solutions to non-routine problems are identified and actioned according to requirements
	2.8	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures
3 Complete work and relevant documentation	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Incidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
	3.4	Tools and equipment are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant entry/work permit(s) are signed off accordance with requirements
	3.6	Work completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for checking and reporting on station conditions.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

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KS01-G352A Gas station conditions and reporting

Evidence shall show an understanding of checking and report gas station conditions in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. WHS/OHS safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures
- Hazardous materials
- MSDS
- PPE

T3. Gas Industry facilities and infrastructure

- regulation and metering facilities
- compression facilities
- gas processing facilities such as coal seam methane plants
- LPG processing facilities
- scraper stations and pigging facilities
- odourisation facilities
- relevant operating policies and procedures

T4. Operation of Gas Industry plant, equipment and materials

- relevant industry engineering terminology and units
- gas pipeline system operating parameters
- gas pipeline systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- relevant inspection and testing procedures for applicable plant and equipment
- commissioning and decommissioning processes of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- characteristics of gas flows including compressed and non-compressed operations
- characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- operation of gas analysis and measuring equipment

T5. Gas Industry products, processes and characteristics

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- products, characteristics and tolerances including:
  - principles of applicable gas laws
  - gas pressure
  - gas temperature
  - compressibility
- relative density – specific gravity
- hydrocarbon and water dew points
- components of applicable natural gases including LPG
- standard gas conditions
- combustion
- venting and purging principles
- effects of temperature and pressure on infrastructure

T6. Security breach procedures

- identification of different types of security incidents including but not limited to:
  - physical security breaches at gas infrastructure
  - threat assessment and management
  - confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

T7. Gas industry documents

- signs, symbols terminology and legends as used in gas industry procedures and documents
- gas industry standards, policies and procedures
- basic drawings and diagrams
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets
- topographical and geographical maps and information.
- workplace forms and reports

T8. Confined spaces

- requirements of Legislation, Regulations, Australian Standards and enterprise specific procedures for safe working in confined spaces
- what is a confined space is and the entry safety requirements
- manufacturers' guidelines for the safe use of PPE used in confined spaces
- gas detectors for confined spaces entry

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- breathing apparatus and rescue and recovery equipment

T9. Corrosion

- corrosion processes.
- cathodic protection on a Gas Industry pipeline

T10. Electrical fundamentals for the Gas Industry

- extra low voltage operation
- electrical test equipment for cathodic protection on gas pipelines and facilities
- Electrical risks associated activities within the Gas Industry
- meters and other relevant electrical equipment.

T11. Problem solving and fault finding

- methodology
- possible solutions and probable solutions
- basic problem solving and fault finding techniques

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by

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EVIDENCE GUIDE

various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range

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- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required l knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Check and report gas station conditions in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Working knowledge of relevant sections of the latest edition of AS2885 Part 3 • Working knowledge of security breach procedures • Demonstrated knowledge of station function • Demonstrated knowledge of identifying abnormal conditions of a station
B	All	• Interpret technical drawings and symbols • Operation of gas detector • Work utilising relevant OHS legislation,

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		regulations, codes of practice, policies and procedures • Practical knowledge of the properties of product being transported • Work safely with hazardous materials and equipment • Apply safe manual handling techniques • Communicate effectively in the workplace • Apply basic planning skills • First Aid certificate level 1
C	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

8.3)

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.

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- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in checking and reporting on station conditions.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG342A	Maintain pipeline easements
UEGNSG349A	Carry out surveillance on gas transmission pipelines
UEGNSG221A	First on site response to gas pipeline emergencies

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to checking and reporting on gas station conditions.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawing
- Established procedures
- PPE and First Aid equipment
- Traffic control

Unit Sector(s)

Gas Supply Industry

Competency Field

Competency Field **10)**

Transmission.

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UEGNSG353A Carry out aerial surveillance of gas transmission pipelines

Modification History

This unit replaces UEG11 unit UEGNSG315B Aerial transmission pipeline surveillance.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the aerial surveillance of gas transmission pipelines, easements and/or surrounding environs in accordance with relevant legislation, code, regulations and established procedures.

The competency standard is applied against the procedures found under latest edition of Australian and New Zealand Standard AS 2885.3.

This is unit encompasses to threat mitigation through identification of system non-conformance; the areas to be monitored; inspection of areas; system's pipe work; structures; fittings; equipment; organisational and statutory requirements and recording and reporting.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission pipelines, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace/Occupational Health and Safety, gas/petrochemical liquid/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to carry out aerial surveillance of gas transmission pipelines	1.1 Specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined and the extent of preparation for the work is assessed.

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ELEMENT	PERFORMANCE CRITERIA	
	1.2	Relevant requirements and established procedures for the work are communicated to all persons
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to requirements and established procedures for gas pipeline surveillance are obtained and confirmed
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	WHS/OHS and environmental risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Relevant work permits are obtained to access and perform work according to requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for pipeline surveillance are identified, scheduled and obtained and confirmed in a safe working order
	1.8	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.9	Persons participating in the work are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.10	Work preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Carry out aerial surveillance of gas transmission pipelines and identify	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.

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ELEMENT	PERFORMANCE CRITERIA	
non-conformance		
	2.2	Routine surveillance of pipeline is conducted and faults reported in a timely manner against work schedule(s) and established procedures and confirmed if necessary by site inspection
	2.3	Analysis of information to identify key issues is undertaken as required and information is evaluated for relevance and validity to the requirements
	2.4	Dealings with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.5	Leakages and damaged pipes, fittings and appurtenances are recorded in accordance with the work schedule and established procedures
	2.6	Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.7	Unplanned events in pipeline surveillance are undertaken with the scope of established procedures
	2.8	System faults and the operational condition of the pipelines are identified and reported and known solutions are applied
	2.8	Works in the vicinity of the pipeline are identified and reported
3 Complete work and relevant documentation	3.1	Solutions are developed based on consideration of relevant information and options and proposed solutions are communicated and implemented as required against works schedule, anomalies are reported in accordance with established procedures
	3.2	Incidents and injuries are reported in accordance with requirements and established procedures where applicable

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ELEMENT	PERFORMANCE CRITERIA
	3.3 Solution is implemented in accordance with standard operating procedures ensuring that action is correctly documented, the transaction is accurately processed and the customer is advised
	3.4 Work completion records, reports and documentation are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for aerial surveillance of gas transmission pipelines

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G353A Gas transmission pipeline aerial surveillance

Evidence shall show an understanding of carrying out aerial surveillance of gas transmission pipelines in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. WHS/OHS safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures
- Hazardous materials
- MSDS
- PPE

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T3. Gas Industry facilities and infrastructure

- regulation and metering facilities
- compression facilities
- gas processing facilities such as coal seam methane plants
- odourisation facilities
- relevant operating policies and procedures

T5. Gas Industry products, processes and characteristics

- products, characteristics and tolerances including:
  - principles of applicable gas laws
  - gas pressure
  - gas temperature
  - compressibility
- relative density – specific gravity
- hydrocarbon and water dew points
- components of applicable natural gases including LPG
- standard gas conditions
- combustion
- venting and purging principles
- effects of temperature and pressure on infrastructure

T6. Gas industry documents

- signs, symbols terminology and legends as used in gas industry procedures and documents
- gas industry standards, policies and procedures
- basic drawings and diagrams
- Process and Instrumentation Diagrams (PID)
- Facility and pipeline construction and as-built drawings
- Geographical Information System (GIS) drawings and data
- Electrical drawings
- Survey maps
- Pipeline route maps and alignment sheets
- topographical and geographical maps and information.
- workplace forms and reports

T7. Problem solving

- methodology
- possible solutions and probable solutions

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- basic problem solving techniques

T8. Security breach procedures

- identification of different types of security incidents including but not limited to:
- physical security breaches at gas infrastructure
- threat assessment and management
- confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

T9. Gas transmission pipeline environmental protection processes

- relevant environmental legislation and environmental regulations
- effects a pipeline can have on:
  - flora and fauna
  - agriculture
  - erosion to soil.
  - air quality
  - waterways
- application of relevant policies and procedures

T10. Gas transmission pipeline surveillance

- relevant legislation and requirements
- safety requirements
- reporting requirements
- established procedures

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

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Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, all summative (or final) assessment is to include the application of the competency in the normal work environment or, at a minimum, its application in a realistically simulated work environment. In some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with

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the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carrying out aerial surveillance of gas transmission pipelines in accordance with relevant legislation, code, regulations and procedures as described as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Identify threats to the integrity of transmission pipelines • Evaluate threats to the integrity of transmission pipelines • Control of the

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		escalation of threats to the public, environment, transmission pipelines and facilities • Working knowledge of relevant sections of latest edition of AS2885.3 Pipelines-Gas and Liquid Petroleum Gas Operations and Maintenance: Sections 3, 4.3, 5.3.6.1, 5.4.1, 5.4.3, 5.5 section 6 threat mitigation • Demonstration of the practical use of communication equipment • Identifying faults • Recording information
B	All	• Interpret technical drawings and symbols • Work using relevant OHS and legislation, regulations, codes of practice, policies, procedures Maintain a safe and clean workplace • Work safely with hazardous materials and equipment • Communicate effectively in the workplace • Practical knowledge of the properties of product being transported • Apply basic planning skills
C	At least one	Deal with an unplanned

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	occasion	event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in aerial transmission pipeline surveillance.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency

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Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG342A	Maintain pipeline easements
UEGNSG349A	Carry out surveillance of gas transmission pipelines
UEGNSG221A	First on site response to gas pipeline emergencies

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to aerial surveillance transmission pipelines.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Areas to be monitored
- Inspection of areas
- Systems pipe work
- Structures

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RANGE STATEMENT

- Fittings and appurtenances
- Organisational and statutory requirements
- Recording and reporting
- Tools and equipment
- Maps and drawings
- Established procedures
- PPE and First Aid equipment
- External interference
- Aerial
- Aerial hazards
- Transmission pipeline standards
- Maps and drawings

Unit Sector(s)

Gas supply industry

Custom Content Section

Competency Field **10)**

Transmission.

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UEGNSG354A Control excavations in the vicinity of gas transmission pipelines

Modification History

This unit replaces UEG11 unit UEGNSG316B Site control of excavations in the vicinity of a transmission pipeline

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the control of all excavations in the vicinity of gas transmission pipelines to ensure the integrity of the pipeline is not compromised.

It encompasses relevant legislation, code, regulations and established procedures in particular the procedures found under the latest version of Australian and New Zealand Standard.AS 2885.3.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission facilities, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

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License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG004A	Locate, prove and protect utility assets
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the

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Prerequisite Unit(s) **4)**

gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA
1 Plan to control excavations in the vicinity of gas transmission	1.1	WHS/OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of

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ELEMENT		PERFORMANCE CRITERIA
pipelines	1.2	work are followed Works schedule(s), specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined and the extent of preparation for the work is assessed
	1.3	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard in accordance with established procedures
	1.4	Other utility assets are identified by Dial Before You Dig or other means
	1.5	WHS/OHS and environmental risk control measures are identified, prioritised and evaluated against the work schedule
	1.6	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.7	Relevant work permits/authorisations are secured to coordinate the performance of work according to requirements and established procedures
	1.8	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe working order
	1.9	Clients are provided with possible solutions and options within the scope, acceptable cost and requirements
	1.10	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.11	Persons participating in the work are fully briefed, inducted and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures

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ELEMENT		PERFORMANCE CRITERIA
	1.12	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Control of excavations in the vicinity of transmission gas transmission pipelines	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Analysis of information to identify key issues is undertaken as required and information is evaluated for relevance and validity to the requirements
	2.3	First Aid and other related work procedures are performed according to requirements and established procedures
	2.4	Lifting, climbing, working in confined spaces and aloft, techniques and practices are safely exercised according to requirements
	2.5	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
	2.6	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.7	Operating conditions of equipment are monitored.
	2.8	Excavation is benched or shoring is used in accordance with relevant legislation
	2.9	Other utility assets are located and confirmed
	2.10	Fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that are required according to requirements and established procedures

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ELEMENT		PERFORMANCE CRITERIA
	2.11	Solutions to non-routine problems are identified and actioned according to requirements
	2.12	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved to a community and industry standard
3 Complete the work and relevant documentation	3.1	Work undertaken is checked against work schedules for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
	3.4	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off accordance with requirements
	3.6	Work completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for site control of third party works in the vicinity of a transmission pipeline.

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REQUIRED SKILLS AND KNOWLEDGE

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G354A Gas transmission pipeline proximity excavation

Evidence shall show an understanding of controlling excavations in the vicinity of a transmission pipelines in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Requirements for preparing, conducting and completing an excavation including WHS/OHS and environmental.

- plans, codes, standards and drawings relevant to specific worksites
- regulatory requirements and procedures for excavating trenches and reinstating sites
- shoring or benching requirements
- notification of appropriate authorities and requirements for temporary or permanent restorations
- hazardous materials, MSDS/SDS and spill kits
- PPE
- environmental and safety hazards, assess risks and implement control measures

T2. Locating utilities and services

- relevant authorities or enterprises to contact regarding the location of other utilities services (gas, water, electricity, telecommunication, sewerage and stormwater) including Dial Before You Dig services
- relevant plans and drawings to identify the location of utilities and services
- utilities and services conduits and cables
- electronic and manual service locators
- hand and mechanical excavation for locating utilities and services
- gas markers

T3. Preparing an excavation site

- work permits and authorisations
- traffic management plans
- spotter/competent observer requirements
- environmental and safety hazards, assess risks and implement control measure
- communication with third parties, colleagues and customers regarding the excavation site
- job specifications and standard operating procedures
- grades and depth required for excavation of trenches for gas pipelines

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REQUIRED SKILLS AND KNOWLEDGE

- techniques for marking out trench location

T4. Excavating of gas industry workplace trenches

- safety requirements and procedures for excavating and shoring trenches in a variety of conditions surface types, soil types, weather, traffic, time of day, location
- regulations and requirements for working in confined spaces and shoring
- purpose and techniques of excavating trenches, shoring, battering and exposing other services
- variety of excavation and shoring techniques to suit varying conditions (surface types, soil types, weather, traffic, time of day, location)
- manually excavation and mechanical excavation applications
- appropriate tools, materials and equipment
- safe manual handling techniques and risk management
- problem solving methods, techniques and solutions
- workplace forms and reports

T5. Security breach procedures

- identification of different types of security incidents including but not limited to:
  - physical security breaches at gas infrastructure
  - threat assessment and management
  - confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

T6. Emergency/incident control procedures

- enterprise emergency/incident control policies and procedures
- communication with relevant stakeholders
- application of relevant procedures

T7. Emergency, accident and incident situations

- procedures
- emergency equipment and procedures for a fire
- breathing apparatus
- gas detectors/oxygen monitoring devices\emergency equipment and procedures for a gas leak or vapour emission
- reports

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Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment

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Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Control excavations in the vicinity of gas transmission pipelines in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

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Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Identify threats to the integrity of transmission pipelines • Evaluate threats to the integrity of transmission pipelines • Initiate control of threats to the integrity of transmission pipelines • Working knowledge of relevant sections of the latest version of AS2885 • Working knowledge of requirements and techniques for safe excavations • Working knowledge of construction machinery • Working knowledge of external interference physical and procedural protection measures • Perform effective on site induction • Perform effective risk assessment and hazard analysis
B	All	• Interpret technical drawings and symbols • Operation of gas detector • Emergency response procedures • Operate pipe locater • Use of and interpret Dial Before You Dig report or its equivalent • Locate other assets in a safe

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		manner • Work utilising relevant WHS/OHS legislation, regulations, codes of practice, policies and procedures • Maintain a safe and clean workplace • Work safely with hazardous materials and equipment • Contractor supervision • Traffic management • Use of safety signage/barricades and materials • Issue, monitor and control work permits • Apply safe manual handling techniques • Communicate effectively in the workplace • Negotiation skills • Apply basic planning skills
C	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in site control of excavations in the vicinity of a transmission pipeline.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG342A	Maintain pipeline easements
UEGNSG353A	Carry out surveillance of gas transmission pipelines

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UEGNSG221A	First on site response to a gas pipeline emergency

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to control of excavation in the vicinity of gas transmission pipelines.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawings
- Established procedures
- PPE and First Aid equipment
- Traffic control
- Facility
- Event

Unit Sector(s)

Gas supply industry.

Competency Field

Competency Field **10)**

Transmission.

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UEGNSG355A Monitor and report on cathodic protection systems

Modification History

This unit replaces UEG11 unit UEGNSG317B Monitor and report on cathodic protection systems

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the testing, basic fault recognition, minor maintenance and reporting of findings and cathodic protection systems faults, but does not include specialist cathodic protection activities.

It encompasses relevant legislation, code, regulations and established procedures in particular the requirements found under the latest version of Australian and New Zealand Standard AS 2885 and AS2832.

The work may be performed autonomously in remote locations for long periods of time and covers tools and equipment, maps and drawings, established procedures, PPE, first aid equipment and traffic control.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission facilities, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Occupational Health and Safety, Gas Industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training. Commonwealth, State/Territory or Local

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment. Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.
2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the

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Employability Skills	**5)** qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to monitor and report on cathodic protection systems	1.1	Work schedules, specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined and the extent of preparation for the work is assessed
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3	WHS/OHS and environmental risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	WHS/OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work permits are secured to coordinate the performance of work according to

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ELEMENT	PERFORMANCE CRITERIA	
		requirements and established procedures
	1.7	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe working order
	1.8	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.9	Persons participating in the work are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
	1.10	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Monitor and report on cathodic protection systems	2.1	WHS/OHS and Environmental policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	First Aid and other related work procedures are performed according to requirements and established procedures
	2.3	Lifting, climbing, working in confined spaces and aloft, use of power tools, techniques and practices are safely exercised according to requirements
	2.4	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	2.6	Fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that are required according to requirements and established procedures
	2.7	Solutions to non-routine problems are identified and actioned according to requirements
	2.8	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures
3 Review, record and report on monitoring cathodic protection systems	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Incidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
	3.4	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off accordance with requirements
	3.6	Work completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for monitoring and reporting on cathodic protection systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G355A Cathodic protection systems

Evidence shall show an understanding of monitoring and report cathodic protection systems in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. WHS/OHS safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures
- Hazardous materials
- MSDS
- PPE

T3. Operation of Gas Transmission pipelines

- relevant industry engineering terminology and units
- gas pipeline system operating parameters
- gas pipeline systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- relevant inspection and testing procedures for applicable plant and equipment
- characteristics of gas flows including compressed and non-compressed operations
- characteristics, operation, capabilities and limitations of applicable tools and equipment

T4. Gas Industry products, processes and characteristics

- products, characteristics and tolerances including:
  - principles of applicable gas laws
  - gas pressure
  - gas temperature
  - compressibility
- relative density – specific gravity
- hydrocarbon and water dew points
- components of applicable natural gases including LPG

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REQUIRED SKILLS AND KNOWLEDGE

- standard gas conditions
- combustion
- venting and purging principles
- effects of temperature and pressure on infrastructure

T5. Gas industry documents

- signs, symbols terminology and legends as used in gas industry procedures and documents
- gas industry standards, policies and procedures
- basic drawings and diagrams
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets
- topographical and geographical maps and information.
- workplace forms and reports

T6. Confined spaces

- requirements of Legislation, Regulations, Australian Standards and enterprise specific procedures for safe working in confined spaces
- what is a confined space is and the entry safety requirements
- manufacturers' guidelines for the safe use of PPE used in confined spaces
- gas detectors for confined spaces entry
- breathing apparatus and rescue and recovery equipment

T7. Electrical fundamentals for the Gas Industry

- extra low voltage operation
- electrical risks associated activities within the Gas Industry
- meters and other relevant electrical equipment
- Licensed low voltage electrical work requirements

T8. Corrosion

- corrosion processes.

T9. Cathodic protection on a Gas Industry pipeline

- types and applications
- equipment and components
- operating principles and circuits diagrams
- electrical test equipment
- safety requirements, procedures and PPE
- monitoring requirements, procedures and reporting

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REQUIRED SKILLS AND KNOWLEDGE

- testing requirements, procedures and reporting
- fault finding and minor repair requirements, procedures and reporting
- requirements and procedures for referring low voltage electrical work to relevant licensed persons
- requirements and procedures referring major repairs to immediate supervisor
- Relevant documentation, records and reports

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing

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EVIDENCE GUIDE

on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination

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legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Monitor and report cathodic protection system in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Working knowledge of relevant sections AS2885 and AS2832 • Demonstrate the practical use of communications equipment • Demonstrate use and maintenance of CP equipment • Demonstrate use and maintenance of measuring equipment • Complete written and verbal reports • Demonstrated knowledge of cathodic protection principles and equipment • Identify and recognise cathodic protection faults • Diagnose and perform minor maintenance of faults on cathodic protection equipment
B	All	• Interpret technical drawings and symbols

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		• Operate gas detector • Operate pipe locater • Work using relevant OHS and environmental, cultural and heritage regulations, codes of practice, policies and procedures • Practical knowledge of the properties of product being transported • Work safely with hazardous materials and equipment • Apply safe manual handling techniques • Communicate effectively in the workplace • Negotiation skills • Apply basic planning skills • First Aid certificate level 1
C	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a

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workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in monitoring and reporting on cathodic protection systems.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

8.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with

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allied Competency Standard Units where listed.

UEGNSG342A	Maintain pipeline easements
UEGNSG349A	Carry out surveillance on gas transmission pipelines
UEGNSG309B	First on-site response to gas pipeline emergencies

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation monitoring and reporting on cathodic protection systems.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawings
- Established procedures and requirements
- PPE and First Aid equipment
- Traffic control

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **10)**

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Competency Field **10)**

Transmission.

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UEGNSG356A Monitor and operate flow control, pressure measuring and regulating devices for gas transmission

Modification History

This unit replaces UEG11 unit UEGNSG318B Monitor and operate flow control, pressure, measuring and regulating devices for gas transmission

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers monitoring and operating of complex flow control, measuring and regulating devices to monitor and control gas supply in gas transmission systems in accordance with relevant legislation, code, regulations and procedures.

It encompasses inspecting, testing and controlling; regulation of flow and pressure; measuring; recording and reporting; regulation of flow and regulation devices; regulation of the system; equipment; organisational and statutory requirements.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply gas transmission systems, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment. Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.
2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

UEGNSG005A	Prepare to work in the gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability

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Employability Skills **5)**

Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to monitor and operate complex flow control devices and equipment	1.1	Work requirements for monitoring and operating complex flow control, measuring and regulating devices are interpreted from plans, specifications and instructions
	1.2	Relevant requirements and established procedures for the work are communicated to all persons
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to the monitoring and operating of complex flow controls are obtained and confirmed
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	WHS/OHS and environmental risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule

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ELEMENT	PERFORMANCE CRITERIA	
	1.6	Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for the work are identified, scheduled and obtained and confirmed in a safe working order
	1.8	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.9	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.10	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work".
	1.11	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Repair and replace complex flow control devices and equipment and monitor system performance	2.1	WHS/OHS and Environmental policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Information on device and equipment performance is collected and reported in accordance with organisational requirements
	2.3	Dealing with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.4	Routine inspections of system are scheduled and monitored in accordance with the work schedule and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Data on system performance and usage is collected, analysed and reported and unplanned events in the monitoring and operation of complex flow control are undertaken with the scope of established procedures
	2.7	Samples are taken in accordance with established procedures and known solutions to a variety of problems are applied
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Control and adjust flows and complete records and reports	3.1	Flow and overflow regulating systems are inspected and adjustments made to meet demand and customer requirements
	3.2	Incidents and injuries are reported in accordance with established procedures where applicable
	3.3	Flows and diversions are determined to facilitate repair or emergency activities in accordance with organisational requirements
	3.4	Process faults and operational conditions of the system are identified, addressed and reported in accordance with organisational requirements
	3.5	Work site is cleaned up and confirmed safe and in accordance with established procedures
	3.6	Tools, equipment and any surplus resources and materials are where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.7	Relevant work permit(s) are signed off accordance with requirements
	3.8	Work completion records, reports and

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ELEMENT	PERFORMANCE CRITERIA
	documentation are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices monitoring and operating complex flow control, measuring and regulating devices on gas transmission systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G356A Transmission pipeline flow control, pressure, measuring and regulating devices

Evidence shall show an understanding of monitoring and operating complex flow control, measuring and regulating devices on gas transmission systems in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Principles of control systems used in monitoring and control of applicable organisational gas infrastructure

T2. Component types, function and operation including:

- data collection and equipment control functions including:
  - Remote Terminal Unit (RTU)
  - Plant Control System (PCS) what’s this mean?
  - PLC’s Programmable Logic Controllers
  - DCS’s Distributive Control Systems
- system controller interface such as Human Machine Interface (HMI) data and voice communication including:
  - Satellite Link
  - Internet Protocol (IP)
  - Modem/ISDN

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- UHF/VHF Radio
- Microwave
- Local Area Network (LAN)
- Wide Area Network (WAN)

T3. Remote Telemetry Units (RTU's) and associated controller operation including:

- start up and shut down of process controllers and RTU equipment
- adjustment of process set point control and status e.g. local/remote and auto/manual
- alarm monitoring, acknowledgement, prioritisation and escalation
- alarm inhibit/enablement/disablement.

T4. Gas conditioning and monitoring equipment

- principles of operation
- components
- fault finding, adjustments, replacement and minor repairs

T5. Pressure control equipment

- types
- principles of operation
- fault finding, adjustments, replacement and minor repairs

T6. Gas flow measurement equipment

- types
- operation
- fault finding, adjustments, replacement and minor repairs

T7. Gas station alarms and safety devices

- types
- operation
- fault finding, adjustments, replacement and minor repairs

T8. Gas station valves

- types
- operation
- maintenance
- fault finding, adjustments, replacement and minor repairs

T9. Monitoring, control and trending functions including, but not limited to:

- Start up and shut down of system interfaces
- Adjustment of applicable security status functions to suit requirements
- Alarm monitoring, acknowledgement, prioritisation and escalation
- Alarm inhibit/enablement/disablement
- Changing of applicable alarm parameters as required
- Analysis of trends and abnormal operating conditions

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- Creation of trends as applicable
- Filtering of alarm and event logs
- Maintenance and adjustment including:
  - Scanning ranges and properties
  - Control limitations
  - Detailed history retrieval options
  - Auxiliary control functions
  - Dead band adjustment

T10. Basic troubleshooting including, as applicable:

- Server synchronisation and switch to backup
- Shutdown and re-start of system

T11. System data recording and data communication capabilities with third-party software applications such as external databases and spreadsheet programs etc.

T12. Gas station venting, purging and pressurisation operations

T13. Gas station operation requirements and procedures

- change over regulator and meter runs
- change over filters/separators
- purge and pressurise station
- adjust set points

T14. Manufactures specifications, manuals and procedures.

T15. Organisations gas facility manuals, drawings, schematics, displays, switches, P+ID’s and procedures

T16. Relevant Legislation, Standards, Codes and Regulations

T17. Consultations appropriate persons to coordinate work and persons

T18. Required documentation, records and reports

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

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Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria

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shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Monitoring and operating of complex flow control, measuring and regulating devices for gas pressure and flow control in transmission systems in accordance with relevant legislation, code, regulations and procedures as described as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 3	• Interpret technical drawings and symbols • Selection of appropriate tools and equipment • System knowledge of Transmission pipelines

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		and stations • Relevant knowledge of AS3885 Part 3
B	All	• Auxiliary control systems knowledge and understanding • Wide open monitor operation • Monitor Active Regulation • Two stage pressure reduction with monitor override
C	All	• RTU control of regulators
D	At least 2	• Pressure Controllers, operation, maintenance and understanding • Commissioning/Setting • Troubleshooting • Pressure Boosters minor repairs • Knowledge of types/models
E	At least 2	• Regulator knowledge and understanding • Sleeve types • Control valves • Pressure reliefs • Diaphragm types • Hydraulic Plug types
F	All	• Valve maintenance and operation. • Automatic Line Break Valves operation and maintenance • Configuration of Ball, Plug, Gate, Instrument and Butterfly valves
G	At least 3	• Working knowledge of: • Diaphragm meters • Rotary meters • Turbine meters

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		• Ultrasonic meters • Orifice plates • Coriolis meters • Oil changing
H	At least 3	• Operational checks • Single run units • Dual run units • City gates or Trunk Receiving Stations (TRS) • District regulators • Pressure Reliefs
I	At least 3	• Maintenance Activities • Single run units • Dual run units • City gates • District Regulators • Pressure Reliefs
J	At least 3	• Pressure alterations • Industrial units • City gates • Regulator Stations • Distribution mains
K	At least 3	• Flaring and Purging • Industrial units • City gates • Regulator Stations • Distribution mains
L	At least 3	• Overpressure Protection Systems function and operation. • OPSO • Internal pressure relief systems • Pressure relief valves • Slam Shut systems • Valve Actuator and control systems
M	All	• Paperwork: • Risk assessments • Time sheets • Completing work

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		records • Notifications and work permits • Equipment check lists • Meter bypass forms • Service orders • Pressure recording charts
N	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in monitoring and operating flow control, pressure, measuring and regulating devices for gas transmission.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

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Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required l Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for*

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RANGE STATEMENT

different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to the monitoring and operating of complex flow control, measuring and regulating devices for gas pressure and flow control in transmission systems.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Inspecting and controlling
- Regulation of flow and pressure
- Measuring
- Recording and reporting
- Regulation of flow and regulation devices
- Regulation of the system
- Equipment
- Organisational and statutory requirements

Unit Sector(s)

Gas supply industry

Custom Content Section

Competency Field **10)**

Transmission.

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UEGNSG411A Maintain cathodic protection systems

Modification History

This unit replaces UEGNSG401B Maintain cathodic protection systems

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers maintaining cathodic protection (CP) systems to prevent corrosion of steel gas pipelines in accordance with relevant legislation, code, regulations and established procedures.

It encompasses the types of cathodic protection faults, as well as the location and the type of electrical equipment used, testing procedures and related maintenance requirements.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to gas transmission and distribution pipelines, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment. Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.
2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government

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License to practice **3)**

legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare and plan to maintain cathodic protection systems	1.1	Cathodic protection system maintenance activity is identified and confirmed according to the work schedule(s), drawings, plans, requirements, established procedures and Australian Standards.
	1.2	Readings from cathodic protection monitoring equipment and anode beds are taken at regular intervals and data collected in accordance with approved procedures a and Australian Standards
	1.3	Relevant work schedules and requirements are communicated to all persons and identified for all work sites
	1.4	WHS/OHS, environmental and sustainable energy policies and procedures related to the maintaining of cathodic protection systems are obtained and confirmed and communicated

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ELEMENT	PERFORMANCE CRITERIA	
	1.5	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.6	WHS/OHS risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.7	Relevant work permits are obtained to access and perform work according to requirements and established procedures
	1.8	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in a safe working order
	1.9	Relevant persons at worksite are suitably trained and qualified for the work to be performed.
	1.10	Liaison and communication issues with authorised persons, authorities, clients and land-owners are resolved to carry out work where necessary
	1.11	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.12	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work"
	1.13	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.14	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2 Maintain and adjust	2.1	WHS policies and procedures and safe work

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ELEMENT	PERFORMANCE CRITERIA	
cathodic protection system equipment		practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely exercised according to requirements.
	2.3	Cathodic protection system is maintained correctly according to established procedures and Australian Standards.
	2.4	Hazard warnings and safety signs are correctly interpreted and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures.
	2.5	Unplanned events in the maintaining of cathodic protection systems is undertaken with the scope of established procedures
	2.6	Known solutions to a variety of problems are applied
	2.7	Data is collected and interpreted and ongoing checks of quality of the work are undertaken in accordance with given instructions, established procedures and Australian Standards.
3 Re-establish system and complete relevant documentation	3.1	Cathodic protection system is re-established in order to meet pipeline system operational requirements and the work undertaken is checked against work schedules for conformance with requirements, anomalies are reported in accordance with established procedures and Australian Standards.
	3.2	Accidents, injuries and non-conformances are reported in accordance with established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned,

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ELEMENT	PERFORMANCE CRITERIA	
		checked and returned to storage in accordance with established procedures
	3.5	Work permits are signed off and equipment is returned to service in accordance with requirements
	3.6	Work completion records, reports as installed/modified drawings and documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for maintaining cathodic protection systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G411A Cathodic protection system maintenance

Evidence shall show an understanding of maintaining cathodic protection systems in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Relevant WHS/OHS safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures
- Hazardous materials and MSDS
- PPE

T3. Corrosion processes on a Gas Industry pipeline

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- corrosion processes, causes and prevention.
- how Cathodic Protection systems prevent corrosion

T4. Electrical fundamentals for the Gas Industry

- extra low voltage operation
- electrical risks associated activities within the Gas Industry
- meters and other relevant electrical equipment
- Licensed low voltage electrical work requirements

T5. Gas system design, planning and operation

- applicable to cathodic protection on a Gas Industry pipeline, including safe design principles.
- cathodic protection electrical and civil drawings

T6. Relevant gas industry documents

- signs, symbols terminology and legends as used in gas industry procedures and documents
- gas industry standards, policies and procedures
- basic drawings and diagrams
- Process and Instrumentation Diagrams (PID)
- Facility and pipeline construction and as-built drawings
- Geographical Information System (GIS) drawings and data
- Electrical drawings
- Survey maps
- Pipeline route maps and alignment sheets
- topographical and geographical maps and information.
- workplace forms and reports

T7. Cathodic protection systems operation on a Gas Industry pipeline

- cathodic protection system design, planning and operation
- types and applications
  - impressed current
  - sacrificial
- equipment and components
- operating principles and circuits diagrams
- cathodic protection system in relation to other services
- coating requirements and their purpose

T8. Cathodic protection systems maintenance

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- electrical test equipment
- safety requirements, procedures and PPE
- adherence of electrical principles and regulatory requirements
- manufacturers specifications and requirements
- monitoring requirements and procedures
- testing requirements and procedures
- calibration and adjustment requirements and procedures
- fault finding and repair/replacement requirements and procedures
- requirements and procedures for referring low voltage electrical work to relevant licensed persons
- requirements and procedures referring major repairs to immediate supervisor
- relevant documentation, records and reports

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being

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assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this will incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance

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with the preferred approach; namely a percentile graded result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below:
  - Maintain cathodic protection system in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A Types of faults:	At least 8	• Coating damage/deterioration • Interference from other systems • Anode not working • Equipment fault/failure • Earth faults • Transformer failure • Anode bed deterioration • Anode cable failure • Telluric effects on CP systems • IJ failure and testing • FIK failure and testing
B. Checks and tests on CP systems	At least 4	• CP Potential surveys • On/off potential surveys • Coating defect assessment surveys (DCVG method, Pearson

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		technique/method, over pipeline potential method) • Loop impedance testing • Anode bed testing • Soil resistivity testing • Interference testing • TRAD unit commissioning and testing
C. Australian Standards or their equivalents:	All	• AS 2885 • AS 2430 • AS 1768 • AS 1596 • AS 2832.1 • AS 3000 • AS 2239 • AG 603 • AS 2865
D. Procedures	All	• Interpreting cathodic protection data system surveys and readings • Locating and repairing faults • Procedures for coating surveys • Checking and maintaining potentials
E	At least one occasion	Dealing with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

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This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Units.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in maintaining cathodic protection systems.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Units applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of

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learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to maintaining cathodic protection systems on Gas Industry pipelines.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Types of CP faults
- Applicable Australian standards/legislation
- Location
- Electrical equipment
- Types of checks and tests
- Test equipment
- Components and systems
- Relevant documentation
- Relevant authorities and other stakeholders/authorities
- Location for maintaining CP systems
- Drawings and specifications

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Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **11)**

Cathodic protection.

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UEGNSG412A Install cathodic protection systems

Modification History

This unit replaces UEGNSG402B Install cathodic protection systems

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers installing cathodic protection (CP) systems to prevent corrosion of steel pipelines in accordance with relevant legislation, code, regulations and established procedures.

It encompasses appropriate installation locations for maintaining cathodic protection system; components of the system; representation of other utilities; types of drawings and specifications; test equipment; types of cathodic protection faults.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas transmission and distribution pipelines, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment. Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.
2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government

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License to practice **3)**

legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan installation of cathodic protection system	1.1	Cathodic protection system installation procedures are planned in accordance with work schedule(s), including drawings, plans, requirements, established procedures and Australian Standards
	1.2	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to the installation of cathodic protection systems are obtained and confirmed and communicated
	1.4	Data from completed CP surveys is analysed and work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures and Australian Standards
	1.5	WHS/OHS risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule.
	1.6	Relevant work permits are obtained to access and perform the installation work, including excavation permits if required, according to requirements, established procedures and Australian Standards
	1.7	Technical specifications and drawings are prepared and approved from the analysed CP survey data
	1.8	Resources including persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in a safe working order
	1.9	Relevant persons at worksite are suitably trained and qualified for the work to be performed.
	1.10	Liaison and communication established with authorised persons, authorities, clients and land-owners to carry out work where necessary
	1.11	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.12	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work"
	1.13	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.14	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans

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ELEMENT	PERFORMANCE CRITERIA	
2 Install cathodic protection system	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are safely exercised according to requirements.
	2.3	Approved specifications and drawings are reviewed and approved. The installation of cathodic protection systems is carried out in accordance with the work schedule, established procedures and Australian Standards
	2.4	Hazard warnings and safety signs are correctly interpreted and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures.
	2.5	Unplanned events in the installation of cathodic protection systems are undertaken with the scope of established procedures
	2.6	Known solutions to a variety of problems are applied
	2.7	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Test and commission CP System and completed relevant documentation	3.1	Commissioning of the installed CP system and components is conducted against works schedule for conformance with requirements, anomalies are reported in accordance with established procedures
	3.2	Accidents, injuries and non-conformances are reported in accordance with requirements and established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and

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ELEMENT	PERFORMANCE CRITERIA	
		materials are, where appropriate, cleaned, checked and stored in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Cathodic protection system is tested, adjusted and further survey data collected and work completion records and documentation is finalised and processed and appropriate persons notified
	3.7	As built drawings are checked, updated and returned to the relevant CP engineering person/s.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for installing cathodic protection systems. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G412A Cathodic protection system installation

Evidence shall show an understanding of installing cathodic protection systems in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Relevant WHS/OHS safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures
- Hazardous materials and MSDS

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- PPE

T3. Corrosion processes on a Gas Industry pipeline

- corrosion processes, causes and prevention.
- how Cathodic Protection systems prevent corrosion

T4. Electrical fundamentals for the Gas Industry

- extra low voltage operation
- electrical risks associated activities within the Gas Industry
- meters and other relevant electrical equipment
- Licensed low voltage electrical work requirements

T5. Gas system design, planning and operation

- applicable to cathodic protection on a Gas Industry pipeline, including safe design principles.
- cathodic protection electrical and civil drawings

T6. Relevant gas industry documents

- signs, symbols terminology and legends as used in gas industry procedures and documents
- gas industry standards, policies and procedures
- basic drawings and diagrams
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets
- topographical and geographical maps and information.
- workplace forms and reports

T7. Cathodic protection systems operation on a Gas Industry pipeline

- on a Gas Industry pipeline
- cathodic protection system design, planning and operation
- types and applications
  - impressed current
  - sacrificial
- equipment and components

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- operating principles and circuits diagrams
- cathodic protection system in relation to other services
- coating requirements and their purpose

T8. Cathodic protection systems installation

- electrical test equipment
- safety requirements, procedures and PPE
- adherence of electrical principles and regulatory requirements
- manufacturers specifications and requirements
- installation requirements and procedures
- testing and commissioning requirements and procedures
- calibration and adjustment requirements and procedures
- fault finding and repair/replacement requirements and procedures
- requirements and procedures for referring low voltage electrical work to relevant licensed persons
- requirements and procedures referring major repairs to immediate supervisor
- relevant documentation, records and reports

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Units and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord

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with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and

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range

- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Install cathodic protection system in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Components and system:	At least 5	• Solar powered supply systems • 240 volt power supply systems • Insulation, FIK's and monolithic joints • Sacrificial and Impressed current anode beds • Battery banks — acid and lead acid battery maintenance including SG measurement • Transformer rectifiers and CPUs • Lighting protection

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		equipment • CP test points • Installation of Insulated Joint Protectors and testing
B. Checks and tests on CP systems:	At least 4	• Potential surveys • TRAD unit commissioning and testing • Interference testing • On/off potential surveys • Coating defect assessment surveys (DCVG method, Pearson technique/method, over pipeline potential method) • Loop impedance testing • Anode bed testing • Soil resistivity testing • Interference testing
C. Australian Standards or their equivalents	All	• AS 2885 • AS 2430 • AS 1768 • AS 1596 • AS 2832.1 • AS 3000 • AS 2239 • AS 2865 • AG 603
D. Procedures	All	• Interpret cathodic protection data system surveys and readings • Implement cathodic protection tests and surveys • Locate and repair faults • Procedures for coating surveys • Check and maintain potentials • Install cathodic protection sites and systems
E	At least one occasion	Deal with an unplanned event by drawing on required

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		knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Units.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in installing cathodic protection systems.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Units applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all

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necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to installing cathodic protection systems.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Applicable Australian standards/legislation
- Location for maintaining CP Systems
- Components and system

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RANGE STATEMENT

- Representatives in other utilities
- Types of checks and tests
- Test equipment
- Drawings and specifications
- Types of CP faults
- CP system installation procedures
- Components and systems
- Relevant documentation
- Relevant authorities and other stakeholders/relevant authorities
- Location for maintaining CP systems
- Drawings and specifications

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **11)**

Cathodic protection.

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UEGNSG506A Respond to gas infrastructure emergencies

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the first response requirements of a pipeline controller to a gas distribution or transmission emergency incident in accordance with relevant legislation, code, regulations and procedures. These incidents may include but are not limited to, gas escapes, gas outages, security breaches, fires, injury and damage.

This encompasses assessing the situation extent and type of incident from the control centre; dispatching staff to assess the site and where required, they will make the area safe and report back to the control centre.

Staff on site are responsible for identifying sources of gas leaks, reporting back to the response/control centre, identifying and controlling potential ignition sources, ventilation/ evacuation from property, liaising with other authorities and emergency services, remaining on site and maintaining site safety until support arrives, should it be required.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas distribution and transmission pipelines and facilities, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract

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of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety, and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to WHS /Occupational Health and Safety (OHS), gas industry codes/guidelines, industrial relations, environmental protection, anti-discrimination and training laws.

Commonwealth, State/Territory or Local Government legislation and regulations may limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
HLTAID003	Perform first aid

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to respond to an emergency	1.1	Relevant WHS/OHS, environmental and sustainable energy policies, procedures and measures are identified, obtained and understood.
	1.2	Emergency/incident is recognised and confirmed with supervisory systems, supervisor/leader, other control centres and according to organisational procedures.
	1.3	Relevant requirements and established procedures for the incident response are discussed with relevant persons to establish and confirm the emergency response plan.
	1.4	Relevant personnel are despatched to site to assess and report on details of the emergency or incident where required.
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Relevant work permits and/or relevant notifications if required are secured to ensure the work is approved, recorded, coordinated and performed safely.
	1.7	Effective liaison and communication is established with the supervisor, coordination centre, emergency authorities and land owners.
2 Respond to an emergency	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise emergencies/incidents and hazards.
	2.2	Relevant emergency/incident information and actions are recorded and reported using established procedures.
	2.3	Operating conditions of equipment are monitored such as, temperatures, flow and pressures in order to determine performance of equipment/pipeline and are adjusted according to

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ELEMENT	PERFORMANCE CRITERIA	
		emergency response procedures.
	2.4	Negotiation processes with third parties concerning the threat to the pipeline occurs to ensure the pipeline can be monitored.
	2.5	Communication with immediate supervisor, coordination centre, emergency authorities and relevant stakeholders is undertaken and maintained in accordance with established procedures.
	2.6	Actions from the coordination centre are applied in order to minimise threats to the public, pipeline or facilities and environment as well as expedite control/reparation.
	2.7	Procedures for referring non-routine events to the immediate authorised persons for directions are followed, for example the emergency level being escalated.
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Incidents and injuries are reported and followed up in accordance with requirements and established procedures.
	3.3	The emergency or incident is correctly handed over to the emergency/incident coordinator or relief response person, including all reports, risk control measures and permit conditions.
	3.4	Relevant work permit(s) are completed and signed off in accordance with requirements.
	3.5	Works completion documentation including records, reports as installed/modified drawing(s) and information is completed accurately and provided to appropriate persons in accordance with established procedures.
	3.6	Participation in debriefing occurs to discuss strengths and weaknesses of emergency/incident response.

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired for first on site emergency response on a distribution pipeline.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G506A First response to a gas infrastructure emergency

Evidence shall show an understanding of first response to gas infrastructure emergency requirements for a gas distribution or transmission incident in accordance with relevant legislation, code, regulations and procedures to an extent indicated by the following aspects:

T1. Security breaches and required action

- types of security incidents including but not limited to physical security breaches at gas infrastructure
- threat assessment and management
- confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

T2. Emergency/incident control procedures compliance with applicable enterprise

- policies and procedures
- communication with relevant stakeholders
- application of relevant procedures
  - reporting protocols on an emergency
  - initial control measures in a gas emergency situation
  - safe approach of a gas emergency site

T3. Emergency assessment

- physical security breaches of gas infrastructure
- threat assessment and management

T4. Incident investigation and evidence gathering techniques

- investigating events
- maintaining integrity of infrastructure – from the control room
- gathering evidence from site – despatching staff to site

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REQUIRED SKILLS AND KNOWLEDGE

- preserving evidence for further investigation

T5. Problem solving in a first response role

- likely problems /assets involved and possible solutions
- recommending probable solutions
- problem solving techniques
- understanding and interpreting relevant technical drawings including, but not limited to:
  - District plans
  - Mains detail plans
  - Easement Plans
  - Industrial Service Plans
  - Pipeline route maps and alignment sheets

T6. Communications

- identify nature of situation and preliminary assessment
- internal
  - workplace colleagues and managers
  - other relevant departments
- external
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

T7. Reports

- procedures and legislative requirements for maintaining appropriate reporting and recording systems
- job records and process information to appropriate/relevant department
- non-conformance and incident reports including customer outages/ security breaches

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all

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prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise.

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carrying out first response to a gas infrastructure emergency for a gas distribution or transmission incident in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:
    A. Identifying and evaluating threats to the integrity of gas pipelines
    B. Assessing the incident
    C. Monitoring gas infrastructure performance
    D. Investigating the incident and collecting evidence
    E. Completing required documentation and reporting.

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F. Dealing with unplanned events by drawing on required skills and knowledge, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

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Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the required Skills and Knowledge s are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

(9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to first response to

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RANGE STATEMENT

an emergency on a gas pipeline which may include but is not limited to, escapes, outages, security breaches, fires, injury and damages.

This includes assessing the situation extent & type of incident; despatching staff to site and to make the area safe and report back to the response/control centre. The staff on site are responsible for identifying and controlling potential ignition sources, ventilation/ evacuation from property, liaising with other authorities and emergency services as required and instructed.

The following constants and variables included in the Element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawings
- Established procedures
- PPE and First Aid equipment
- Emergency response manuals
- Security breach investigation practices

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **10)**

Gas distribution and transmission

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UEGNSG507A Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers remotely monitoring and operating of complex flow control and pressure measuring and regulating devices to monitor and control gas supply in gas transmission systems in accordance with relevant legislation, code, regulations and procedures.

It encompasses remotely checking and controlling; regulation of flow and pressure; measuring; recording and reporting; regulation of flow and regulation devices; regulation of the system; equipment; organisational and statutory requirements.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply gas transmission systems, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of persons who can operate certain equipment.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
MSS402061A	Use SCADA systems in operations

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to monitor and operate flow control and pressure measuring and regulating devices	1.1	Work requirements for monitoring and operating complex flow control, measuring and regulating devices are interpreted from schedules, plans, specifications and instructions
	1.2	Relevant requirements and established procedures for the work are communicated to all persons
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to the monitoring and operating of complex flow controls are obtained and confirmed
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	WHS/OHS and environmental risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Relevant work permits are obtained to access, isolate/de-energise systems as required and perform work according to requirements and established procedures
	1.7	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work

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ELEMENT	PERFORMANCE CRITERIA	
	1.8	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.9	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work"
2 Monitor flow control and pressure measuring and regulating devices and system performance	2.1	WHS/OHS and Environmental policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Information on device and equipment performance is collected and reported in accordance with organisational requirements
	2.3	Dealing with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.4	Routine checks of system are scheduled and monitored in accordance with the work schedule and established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Data on system performance and usage is collected, analysed and reported and unplanned events in the monitoring and operation of complex flow control are undertaken with the scope of established procedures
	2.7	Samples are taken in accordance with established procedures and known solutions to a variety of problems are applied
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
3 Control and adjust flows and complete records and reports	3.1	Flow and overflow regulating systems are checked and adjustments made to meet demand and customer requirements
	3.2	Incidents and injuries are reported in accordance with established procedures where applicable
	3.3	Flows and diversions are determined to facilitate repair or emergency activities in accordance with organisational requirements
	3.4	Process faults and operational conditions of the system are identified, addressed and reported in accordance with organisational requirements
	3.5	Relevant work permit(s) are signed off accordance with requirements
	3.6	Work completion records, reports and documentation are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices monitoring and operating complex flow control, measuring and regulating devices on gas transmission systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G356A Transmission pipeline flow control and pressure measuring and regulating devices

Evidence shall show an understanding of monitoring and operating flow control and pressure measuring and regulating devices on gas transmission systems in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by

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the following aspects:

T1. Principles of control systems used in monitoring and control of applicable organisational gas infrastructure

T2. Component types, function and operation including:

- data collection and equipment control functions including:
  - Remote Terminal Unit (RTU)
  - Plant Control System (PCS)
  - PLC's Programmable Logic Controllers
  - DCS's Distributive Control Systems
  - SCADA Supervisory Control and Data Acquisition systems
- system controller interface such as Human Machine Interface (HMI) data and voice communication including:
  - Satellite Link
  - Internet Protocol (IP)
  - Modem/ISDN
  - UHF/VHF Radio
  - Microwave
  - Local Area Network (LAN)
  - Wide Area Network (WAN)

T3. Remote Telemetry Units (RTU's) and associated controller operation including:

- start up and shut down of process controllers and RTU equipment
- adjustment of process set point control and status e.g. local/remote and auto/manual
- alarm monitoring, acknowledgement, prioritisation and escalation
- alarm inhibit/enablement/disablement.

T4. Gas conditioning and monitoring equipment

- principles of operation
- components
- fault finding, adjustments

T5. Pressure control equipment

- types
- principles of operation
- fault finding, adjustments

T6. Gas flow measurement equipment

- types
- operation
- fault finding, adjustments

T7. Gas station alarms and safety devices

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- types
- operation
- fault finding, adjustments

T8. Gas station valves

- types
- operation
- maintenance
- fault finding, adjustments

T9. Monitoring, control and trending functions including, but not limited to:

- Start up and shut down of system interfaces
- Adjustment of applicable security status functions to suit requirements
- Alarm monitoring, acknowledgement, prioritisation and escalation
- Alarm inhibit/enablement/disablement
- Changing of applicable alarm parameters as required
- Analysis of trends and abnormal operating conditions
- Creation of trends as applicable
- Filtering of alarm and event logs
- Maintenance and adjustment including:
  - Scanning ranges and properties
  - Control limitations
  - Detailed history retrieval options
  - Auxiliary control functions
  - Dead band adjustment

T10. Basic troubleshooting including, as applicable:

- Server synchronisation and switch to backup
- Shutdown and re-start of system

T11. System data recording and data communication capabilities with third-party software applications such as external databases and spreadsheet programs etc.

T12. Gas station venting, purging and pressurisation operations

T13. Gas station operation requirements and procedures

- change over regulator and meter runs
- change over filters/separators
- purge and pressurise station
- adjust set points

T14. Manufactures specifications, manuals and procedures.

T15. Organisations gas facility manuals, drawings, schematics, displays, switches, P+ID’s and procedures

T16. Relevant Legislation, Standards, Codes and Regulations

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T17. Consultations appropriate persons to coordinate work and persons

T18. Required documentation, records and reports

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the

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assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Remote monitoring and operating of flow control and pressure measuring and regulating devices for gas pressure and flow control in transmission systems in accordance

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with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 3	• Interpret technical drawings and symbols • Selection of appropriate tools and equipment • System knowledge of Transmission pipelines and stations • Relevant knowledge of AS2885 Part 3
B	All	• Auxiliary control systems knowledge and understanding • Wide open monitor operation • Monitor Active Regulation • Two stage pressure reduction with monitor override
C	All	• RTU control of regulators
D	At least 2	• Pressure Controllers, operation, maintenance and understanding • Commissioning/Setting • Troubleshooting • Pressure Boosters adjustments • Knowledge of types/models
E	At least 2	• Regulator knowledge and understanding • Sleeve types • Control valves • Pressure reliefs • Diaphragm types • Hydraulic Plug types

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F	At least 2	• Valve maintenance and operation. • Automatic Line Break Valves operation and maintenance • Configuration of Ball, Plug, Gate, Instrument and Butterfly valves
G	At least 3	• Working knowledge of: • Diaphragm meters • Rotary meters • Turbine meters • Ultrasonic meters • Orifice plates • Coriolis meters • Oil changing
H	At least 3	• Operational checks • Single run units • Dual run units • City gates or Trunk Receiving Stations (TRS) • District regulators • Pressure Reliefs
I	At least 3	• Maintenance Activities • Single run units • Dual run units • City gates • District Regulators • Pressure Reliefs
J	At least 3	• Pressure alterations • Industrial units • City gates • Regulator Stations • Meter stations
K	At least 3	• Flaring and Purging • Industrial units • City gates • Regulator Stations • Meter stations
L	At least 3	• Overpressure Protection Systems function and operation. • OPSO

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		• Internal pressure relief systems • Pressure relief valves • Slam Shut systems • Valve Actuator and control systems
M	All	• Paperwork: • Risk assessments • Time sheets • Completed work records • Notifications and work permits • Log sheets • Service orders
N	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in the remote monitoring and operating of flow control, pressure, measuring and regulating devices for gas transmission.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

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Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
MSS402061A	Use SCADA systems in operations
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

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RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to the remote monitoring and operating of flow control and pressure measuring and regulating devices for gas pressure and flow control in transmission systems.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Monitoring of plant using control systems such as SCADA
- Checking and controlling
- Regulation of flow and pressure
- Measuring
- Recording and reporting
- Regulation of flow and regulation devices
- Regulation of the system
- Equipment
- Organisational and statutory requirements

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **10)**

Transmission.

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UEGNSG508A Remotely check and report on gas station conditions

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers remotely checking gas station conditions, performing minor changes and reporting the status in accordance with relevant legislation, code, regulations and established procedures.

Gas stations could include metering, compressors, valves, regulators, heaters, scraper, telemetry and odourisation facilities.

The competency standard is applied against the procedures found under the latest edition of Australian and New Zealand Standard. AS 2885.3.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas stations, subject to all Workplace Health and Safety (WHS) /Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety, and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to WHS /Occupational Health and Safety (OHS), gas industry codes/guidelines, industrial relations, environmental protection, anti-discrimination and training laws.

Commonwealth, State/Territory or Local Government legislation and regulations may limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

MSS402061A	Use SCADA systems in operations
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the

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Prerequisite Unit(s) **4)**

gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan to check and report on gas station conditions	1.1	Work schedules, specific requirements, drawings, plans, requirements, established procedures and material and equipment are examined and the extent of preparation for the

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ELEMENT	PERFORMANCE CRITERIA	
		work is assessed
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3	WHS/OHS and environmental risk control measures are identified, prioritised and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons
	1.5	WHS/OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work authorisations and permits are secured as required to coordinate the performance of work according to requirements and established procedures
	1.7	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.8	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
2 Check and report on gas station conditions	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	First Aid and other related work procedures are performed according to requirements and established procedures
	2.3	Equipment faults are identified through checking and testing of operational equipment in accordance with a work schedule and to

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ELEMENT	PERFORMANCE CRITERIA	
		requirements, including dispatching of relevant personnel to site as required
	2.4	Hazard warnings and safety signs are recognised and hazards are assessed and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.5	Operating conditions of equipment are monitored such as, temperatures, flow and pressures in order to determine performance of equipment and pipeline.
	2.6	Fault finding and troubleshooting techniques are applied to identify any repairs or maintenance that are required according to requirements and established procedures, including dispatching of relevant personnel to site as required
	2.7	Solutions to non-routine problems are identified and actioned according to requirements
	2.8	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures
3 Complete work and relevant documentation	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Incidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.5	Relevant work authorisations and permit(s) are signed off in accordance with requirements
	3.6	Work completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for checking and reporting on station conditions.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G508A Gas station conditions and reporting

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Evidence shall show an understanding of remotely checking and reporting of gas station conditions in accordance with relevant legislation, code, regulations and procedures. to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. WHS/OHS safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures
- Hazardous materials
- MSDS
- PPE

T3. Gas Industry facilities and infrastructure

- regulation and metering facilities
- compression facilities
- gas processing facilities such as coal seam methane plants
- LPG processing facilities
- scraper stations and pigging facilities
- odourisation facilities
- relevant operating policies and procedures

T4. Operation of Gas Industry plant, equipment and materials

- relevant industry engineering terminology and units
- gas pipeline system operating parameters
- gas pipeline systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable
- relevant inspection and testing procedures for applicable plant and equipment
- commissioning and decommissioning processes of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable
- characteristics of gas flows including compressed and non-compressed operations
- characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- operation of gas analysis and measuring equipment

T5. Gas Industry products, processes and characteristics

- products, characteristics and tolerances including:
  - principles of applicable gas laws
  - gas pressure

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  - gas temperature
  - compressibility
- relative density – specific gravity
- hydrocarbon and water dew points
- components of applicable natural gases and including LPG
- standard gas conditions
- combustion
- venting and purging principles
- effects of temperature and pressure on infrastructure

T6. Security breach procedures

- identification of different types of security incidents including but not limited to:
  - physical security breaches at gas infrastructure
  - threat assessment and management
  - confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

T7. Gas industry documents

- signs, symbols terminology and legends as used in gas industry procedures and documents
- gas industry standards, policies and procedures
- basic drawings and diagrams
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets
- topographical and geographical maps and information
- workplace forms and reports

T8. Corrosion

- corrosion processes
- cathodic protection on a Gas Industry pipeline

T9. Problem solving and fault finding

- methodology
- possible solutions and probable solutions
- basic problem solving and fault finding techniques

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Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required l knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Remotely check and report gas station conditions in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace

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Group No	The minimum number of items on which skill is to be demonstrated	Item List
A	All	• Working knowledge of relevant sections of the latest edition of AS2885 Part 3 • Working knowledge of security breach procedures • Demonstrated knowledge of station function • Demonstrated knowledge of identifying abnormal conditions of a station
B	All	• Interpret technical drawings and symbols • Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures • Practical knowledge of the properties of product being transported • Apply safe manual handling techniques • Communicate effectively in the workplace • Apply basic planning skills • First Aid certificate level 1
C	At least one occasion	Deal with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

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This unit contains Employability Skills

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in remotely checking and reporting on station conditions using appropriate systems.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

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There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG506A	Respond to emergencies for gas infrastructure
MSS402061A	Use SCADA systems in operations
UEGNSG507A	Remotely monitor and operate flow control and pressure measuring and regulating devices for gas transmission

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to remotely checking and reporting on gas station conditions.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Tools and equipment
- Maps and drawing
- Established procedures
- PPE and First Aid equipment
- Operating conditions

Unit Sector(s)

Gas Supply Industry

Competency Field

Transmission.

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UEGNSG511A Operate gas infrastructure to meet nominated demand

Modification History

This unit replaces UEGNSG501B Operate gas infrastructure to meet nominated demand

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This competency standard covers the assessing and responding to anticipated demand. This competency standard also refers to Industry products and services; Authoritative sources; Product information; Stakeholders; Organisational requirements; Interpersonal skills; Nominated person(s); Product and service issues.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance,

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License to practice **3)**

industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Distribution Pathway

Transmission Pathway

Controller Pathway

Common Group Units

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

Distribution Pathway

UEGNSG216A	Commission or decommission gas

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Prerequisite Unit(s) **4)**

	distribution pipelines
UEGNSG134A	Establish a utilities work site

Transmission Pathway

UEGNSG344A	Commission or decommission gas transmission pipelines
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG134A	Establish a utilities work site

Controller Pathway

UEGNSG507A	Remotely monitor and operate gas transmission flow control, pressure measuring and regulating devices
MSS402061A	Use SCADA systems in operations

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan to operate gas infrastructure to meet nominated demand	1.1 Information, requirements and established procedures are detailed, analysed and the extent of the preparation of the work determined for planning and coordination
	1.2 Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3 Risk control measures for identified hazards are prioritised, implemented and evaluated against the work schedule
	1.4 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5 Communicate with Gas Industry stakeholders, produce gas schedule based on bid and or nomination information
	1.6 Operation is carried out in accordance with organisational procedures
	1.7 OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.8 Relevant stakeholders are provided with possible solutions and options within the scope, acceptable cost and requirements

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ELEMENT		PERFORMANCE CRITERIA	
		1.9	Liaison and communication issues with relevant stakeholders are resolved and activities coordinated to carry out work
		1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with establish procedures
2	Operate gas infrastructure to meet nominated demand	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
		2.2	Work is performed and coordinated in accordance with a work schedule and to requirements
		2.3	Remedial actions are taken to overcome any shortfalls encountered in the work schedule according to requirements and established procedures
		2.4	Schedule is produced according to the information collected in accordance with established procedures
		2.5	Any abnormal conditions are recognised and responded to in accordance with organisational procedures
		2.6	Solutions to problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
		2.7	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures
3	Complete and review operation of gas infrastructure to meet nominated demand	3.1	Work undertaken is checked against schedule for conformance with requirements, anomalies are reported in accordance with established procedures
		3.2	Works completion records, reports, documentation and information is confirmed, processed and the appropriate persons notified as

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ELEMENT **PERFORMANCE CRITERIA**

per established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for assessing and responding to anticipated demand.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G501 Meeting nominated demand
B

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control

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systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.7 Complete Gas Industry reports and documentation

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Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.9 Supervise transmission pipeline operations

Evidence shall show an understanding, applicable at a supervisory level, of gas transmission pipelines, indicated by the following:

- pipeline threats, identification and control
- pinpointing pipeline locations
- excavation machinery and their effects used near pipelines
- pipeline specifications
- coatings for corrosion protection
- HB105 Guide to Pipeline Risk Assessment in accordance with AS2885 Part 1 and Part 3
- applicable pipeline legislation, regulatory and advisory standards and codes of practice.

G 4.1.16 Demonstrate operational understanding of Gas Industry facilities and infrastructure

Evidence shall show an operational understanding required at a supervisory level for applicable Gas Industry facilities and infrastructure, including, but not limited to:

- regulation and metering facilities
- compression facilities
- gas processing facilities such as coal seam methane plants
- LPG processing facilities
- scraper stations and pigging facilities

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- odourisation facilities
- reference to relevant operating policies and procedures

G 4.1.17 Demonstrate knowledge of pipeline systems

Evidence shall show an understanding required at a Gas Industry supervisory level of general principles associated with pipelines and other gas infrastructure, indicated by the following:

- identification, control and management of relevant threats against pipeline infrastructure and facilities
- identification of pipeline locations
- application of guidelines for the use of excavation machinery near pipelines and infrastructure and damage
- operational specifications and safe working limitations of pipelines and infrastructure
- principles of cathodic protection and corrosion mitigation
- HB105 Guide to pipeline risk assessment in accordance with AS2885.1, AS2885 Part 3
- applicable pipeline legislation, regulations, advisory standards and codes of practice.

G 4.1.19 Understand and apply commercial agreements in a Gas Industry environment

Evidence shall show an understanding of the knowledge of gas industry commercial agreements, indicated by the following:

- understanding the application of applicable commercial agreements and contractual requirements including, but not limited to:
  - Gas Supply Agreements (GSA)
  - Gas Transportation Agreements (GTA)
  - Gas Processing Agreements (GPA)
  - Gas Imbalance Trading procedures
  - Spot market contracts

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in

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EVIDENCE GUIDE

accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects **9.2)**

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of evidence required to demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
  - Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 1	Work site context:

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		• Gas Industry production, transmission and distribution areas • Location — control centres or other places where communication processes occur
B	All	• Use of relevant computer systems • Work requests from other parties • Relevant procedures for equipment use • Perform work under or without supervision • Work carried out in regular or specified timeframe • Written requests and reports
C	All	• Locate, interpret and apply relevant information • Analyse process functions and problems • Apply relevant customer service policies and procedures • Use appropriate workplace language and communication technologies and techniques • Maintain relevant workplace records • Demonstrate understanding of the essential knowledge and associated skills associated with this competency standard • Demonstration of each element on several occasions

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D	At least one occasion	Deal with unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in holistic assessment with above listed items

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in operating gas infrastructure to meet nominated demand.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working

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practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to assessing and responding to anticipated demand.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Areas to control
- Gas infrastructure
- Records/reports
- Information systems
- Industry products and services
- Authoritative sources
- Product information
- Stakeholders
- Organisational requirements
- Interpersonal skills
- Nominated person(s)

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RANGE STATEMENT

- Product and service issues

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Control centre.

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UEGNSG512A Control centre communication with gas industry stakeholders

Modification History

This unit replaces UEGNSG502B Control centre communication with gas industry stakeholders

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the usage of technical communication skills and techniques to effectively liaise and communicate with relevant parties to ensure gas deliveries and operations are carried out within contractual, operational and regulatory requirements. The competency standard refers to Industry products and services; Authoritative sources; Product information; Stakeholders; Organisational requirements; Interpersonal skills; Nominated persons; Product and Service issues.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any basic and safe work site where Gas Industry operations occur. It could also apply, where applicable to other workplaces in the electricity supply industry (transmission and distribution and generation), the electrotechnology industry and the water industry, subject to all Occupational Health and Safety and duty of care requirements being met for the workplace.

Licensing/Regulatory Information

License to practice **3)**

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License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Distribution Pathway

Transmission Pathway

Controller Pathway

Common Group Units

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the

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Prerequisite Unit(s) **4)**

gas supply industry

Distribution Pathway

UEGNSG216A	Commission or decommission gas distribution pipelines
UEGNSG134A	Establish a utilities work site

Transmission Pathway

UEGNSG344A	Commission or decommission gas transmission pipelines
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG134A	Establish a utilities work site

Controller Pathway

UEPOPS203B	Operate and Monitor Communications System

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan communication with Gas Industry stakeholders	1.1	Work schedules, including drawings, plans, requirements, established procedures and material lists are detailed and communicated to control centre, analysed as necessary and the extent of the preparation of the work determined for planning, coordination and follow-on communication purposes
	1.2	Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established control centre procedures and guidelines
	1.3	Risk control measures for identified hazards are prioritised, implemented and evaluated against the work schedule
	1.4	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6	Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures

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ELEMENT		PERFORMANCE CRITERIA	
		1.7	Liaison and communication issues with authorised persons, authorities, clients, land-owners and other relevant parties are resolved and activities coordinated to carry out work
		1.8	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with established CC procedures
2	Identify and carrying out Gas Industry stakeholders communication requirements	2.1	Relevant OHS, operational and commercial requirements and practices of individual stakeholders are referenced and actioned in accordance with control centre guidelines and established procedures
		2.2	Work is monitored, performed and/or coordinated in accordance with applicable work schedules and to applicable stakeholder requirements
		2.3	Hazard warnings and safety signs are recognised and hazards are assessed and OHS risks are reported to the immediate authorised persons for directions according to established procedures
		2.4	Remedial actions are identified and communicated to relevant stakeholders to overcome any shortfalls encountered in the work schedule according to requirements and established procedures
		2.5	Solutions to non-routine problems are identified and communicated using Essential Knowledge and Associated Skills according to requirements
		2.6	Ongoing monitoring of quality of the work are undertaken in accordance with requirements and established procedures to ensure that the stakeholder’s agreed communication requirements are adhered to.
		2.7	Communication with clients is conducted in a professional and courteous manner according to organisational requirements and to contractual

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ELEMENT		PERFORMANCE CRITERIA	
			agreements and statutory requirements
		2.8	Appropriate language and interpersonal skills are used to facilitate accurate and relevant exchange of information
		2.9	Enquiries outside area of responsibility/knowledge are referred to the nominated person for resolution
3	Complete procedures for communication and liaison with Gas Industry stakeholders	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
		3.2	Accidents and injuries are reported and followed up in accordance with requirements/established procedures
		3.3	Work site is confirmed safe and operational accordance with established procedures and status communicated to relevant stakeholders
		3.4	Relevant work permit(s) are signed off and relevant equipment and processes are returned to service and advised to stakeholders as required
		3.5	Notification of completion of works and tasks is communicated to relevant stakeholders as per applicable procedures
		3.6	All stakeholders and internal staff are notified of actions required at the completion of any works or tasks
		3.7	Any agreed outcomes are monitored where relevant communication to stakeholders carried out.
		3.8	Communication completion processes are performed in accordance with organisational procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices control centre communication with Gas Industry stakeholders.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G502 Control centre communication
B

G 3.7.2 Apply communication, negotiation and problem solving techniques

Evidence shall show an understanding of communication, negotiation and problem solving skills required in a Gas Industry environment, indicated by the following:

- monitor/introduce practices designed to improve performance
- use effective consultative processes
- communicate routine and non-routine information clearly to senior managers, peers and subordinates
- ability to liaise effectively with a range of clients
- clear and accurate observation and analytical skills
- negotiation and dispute resolution and problem solving.

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies

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- property/land owners (including traditional land owners) and tenants
- emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program

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- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be

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more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
  - Demonstrate performance across a representative range of contexts from the prescribed items below.

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Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 1	Workplace Environment Context: • Gas Industry production, transmission and distribution areas • Location — control centres or places where communication processes occur • Work including out-of-hours
B	All	• Use of computer hardware, software such as email • Work requests from other parties • Relevant procedures for equipment use • Perform work under or without supervision • Work carried out in regular or specified timeframe
C	All	Documentation: • Written requests and reports • Organisational formatting reports • Regulatory reporting formats
D	All	• Locate, interpret and apply relevant information • Analyse process functions and problems • Apply relevant

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		customer service policies and procedures • Use appropriate workplace language and communication technologies and techniques • Maintain relevant workplace records • Demonstrate understanding of the essential knowledge and associated skills associated with this competency standard • Demonstration of each element on several occasions
E	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

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- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in controlling centre communication with Gas Industry stakeholders.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to control centre

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RANGE STATEMENT

communication with Gas Industry stakeholders.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Industry products and services
- Authoritative sources
- Product information
- Stakeholders
- Organisational requirements
- Interpersonal skills
- Nominated person(s)
- Product and service issues

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Control centre.

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UEGNSG513A Manage emergencies and critical incidents for gas infrastructure

Modification History

This unit replaces UEGNSG503B Manage emergencies and critical incidents for gas infrastructure

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit deals with the skills and knowledge required to manage a critical incident for gas infrastructure. This unit refers to the management of incidents of a critical nature that may impact on the operational effectiveness of the plant or system, endanger human life or property, or have an adverse impact on the environment.

Application of the Unit

Application of the Unit **2)**

This Competency Standard Unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practice in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as New

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License to practice **3)**

Apprenticeships and the like.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Distribution Pathway

Transmission Pathway

Controller Pathway

Common Group Units

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

Distribution Pathway

UEGNSG216A	Commission or decommission gas distribution pipelines
UEGNSG134A	Establish a utilities work site

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Prerequisite Unit(s) **4)**

Transmission Pathway

UEGNSG344A	Commission or decommission gas transmission pipelines
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG134A	Establish a utilities work site

Controller Pathway

UEGNSG506A	Respond to gas infrastructure emergencies
HLTAID003	Perform first aid

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Plan to undertake the management of critical incidents	1.1	Established procedures and contingency plans are known, understood and determined for dealing with critical incidents
		1.2	Work is analysed, prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
		1.3	Risk control measures for identified hazards are prioritised, implemented and evaluated
		1.4	Relevant system constraints are communicated to relevant persons and identified for work sites as per established procedures
		1.5	Operational and commercial requirements are communicated to stakeholders as per established procedures
		1.6	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
		1.7	Liaison and communication with authorised persons, authorities, clients and land-owners is performed and activities are coordinated to carry out work
2	Implement incident response strategies	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards

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ELEMENT		PERFORMANCE CRITERIA	
		2.2	Receive and record relevant incident information regarding the scope and severity of the incident according to established procedures
		2.3	Analyse, assess and take appropriate actions according to established procedures
		2.4	OHS risks and incidents are identified and action taken according to established procedures
		2.5	Establish appropriate communications with incident support services and relevant stakeholders according to established procedures
		2.6	Actions are taken to reduce the effect of the incident according to requirements and established procedures
		2.7	Continue to monitor and assess the incident for any changes and respond according as per established procedures
		2.8	Essential Knowledge and Associated Skills are applied in an agreed timeframe and to quality standards efficiently according to requirements and established procedures
3	Complete procedures for managing critical incidents	3.1	Work completion records, reports, de-briefings, documentation and information is confirmed, processed and the appropriate persons notified
		3.2	Review incident response procedures and develop recommendations for changes to established procedures as necessary

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for managing emergencies and critical incidents for gas infrastructure.

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REQUIRED SKILLS AND KNOWLEDGE

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G503 Emergency management B

G 2.1.1 Work in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G 2.1.4 Apply relevant OHS regulations, policies and procedures

Evidence shall show an understanding of the basic workplace health and safety legislation and how this applies to individuals in a Gas Industry workplace, indicated by the following:

- Employer's responsibilities to relevant OHS legislation
- Employee's responsibilities to OHS legislation and organisation's policies and procedures
- OHS policies and procedures at the worksite.
- Australian Standards, guidelines and codes of practice

G 2.1.5 Work safely in the gas industry by reducing risk and using correct

Evidence shall show an understanding of how to work safely in the gas industry indicated by the ability to:

- Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements
- Correctly interpret gas markers
- Identify the correct PPE required for work in the Gas Industry
- Locate and comply with procedures for correctly checking, maintaining and storing PPE
- Apply the process of Hazard identification, Risk assessment and Control
- Complete Risk Assessment forms such as Work Permits and JHA’s, JSA’s, JSEA’s, SWM’s etc

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- Report workplace hazards

G 2.1.9 Respond to emergency and accident situations

Evidence shall show knowledge and skills in dealing with emergency or accident situations at a Gas Industry workplace, indicated by the following:

- Situations of accidents and emergency
- Comply with procedures for accidents and incidents
- Correct use of emergency equipment and procedures for a fire
- Correct use of breathing apparatus
- Correct use of gas detectors/oxygen monitoring devices
- Correct use of emergency equipment and procedures for a gas leak or vapour emission
- Report emergencies and accidents

G 2.1.14 Read and interpret Gas Industry documents

Evidence shall show an ability to read and interpret Gas Industry documents indicated by the following:

- Understand and use signs, symbols terminology and legends as used in gas industry procedures and documents
- Identify, locate and implement gas industry standards, policies and procedures
- Interpret and read basic drawings and diagrams

G 2.1.26 Communicate in the workplace

Evidence shall show an understanding and ability to communicate effectively in a Gas Industry work team indicated by the following:

- Effective use oral and written communications methods to achieve work related outcomes and solutions.
- Effectively receive, interpret and respond to workplace information and instructions
- Effectively convey and report work related information to fellow workers and customers
- Interact with fellow workers in a socially and culturally appropriate manner

G 4.1.1 Operate and supervise in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures

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- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

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G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

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G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.10 Understanding security breach procedures

Evidence shall show an understanding required to identify security breaches and the required action in dealing with such breaches, indicated by the following as applicable:

- identification of different types of security incidents including but not limited to:
  - physical security breaches at gas infrastructure
  - threat assessment and management
  - confidential information security

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- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

G 4.1.11 Follow emergency/incident control procedures

Evidence shall show an application of emergency/incident control procedures used for applicable gas infrastructure, indicated by the following:

- compliance with applicable enterprise emergency/incident control policies and procedures
- communication with relevant stakeholders
- application of relevant procedures

G 4.1.14 Understand and comply with environmental and cultural issues requirements

Evidence shall show an understanding of environmental and cultural issues required of Gas Industry supervisors and autonomous workers, indicated by the following:

- understanding relevant environmental legislation, regulations, advisory standards, codes of practice and their impact on gas industry pipelines and facilities
- demonstrate appropriate actions and behaviours when dealing with environmental and cultural issues
- understanding of the significance of cultural awareness and native title legislation, regulations, advisory standards, codes of practice and cultural customs and practices and their impact on Gas Industry pipelines and facilities.

G 4.1.17 Demonstrate knowledge of pipeline systems

Evidence shall show an understanding required at a Gas Industry supervisory level of general principles associated with pipelines and other gas infrastructure, indicated by the following:

- identification, control and management of relevant threats against pipeline infrastructure and facilities
- identification of pipeline locations
- application of guidelines for the use of excavation machinery near pipelines and infrastructure and damage
- operational specifications and safe working limitations of pipelines and infrastructure
- principles of cathodic protection and corrosion mitigation
- HB105 Guide to pipeline risk assessment in accordance with AS2885.1, AS2885 Part 3

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- applicable pipeline legislation, regulations, advisory standards and codes of practice.

G 4.1.18 Apply problem solving techniques

Evidence shall show an understanding and application of problem solving techniques in a Gas Industry environment, indicated by the following:

- understanding and application of formal problem solving techniques
- understanding the nature of problems
- identifying, evaluating and selecting solutions
- evaluating the effectiveness of problem solving processes.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being

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assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a

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percentile graded result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills

- Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
  - Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Evaluate, respond and report threats to pipeline systems operation • Working knowledge of sections of the relevant Australian pipeline and associated standards and legislation • Working knowledge of the station function including identification of abnormal conditions of stations and reporting • Working knowledge of pipeline operational parameters • Use relevant field permit to work systems • Respond correctly to alarms • Working knowledge of monitoring field work • Communicate effectively in the workplace • Operating

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		communications equipment • Interpret technical drawings and symbols • Emergency Response procedures • Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures • Maintain a safe and clean workplace • Apply planning skills • Manage communication with the media
B	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

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In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in managing emergencies and critical incidents for gas infrastructure.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to compliance with the management of incidents of a critical nature that may impact on the operational

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RANGE STATEMENT

effectiveness of the plant or system, endanger human life or property, or have an adverse impact on the environment.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Gas infrastructure
- Records/reports (5)
- Information systems
- Maps and drawings
- Established procedures
- Areas of responsibility

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Control centre.

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UEGNSG514A Managing and Controlling Field Activities

Modification History

This Unit replaces UEGNSG504B Managing and Controlling Field Activities

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This competency standard covers the monitoring of permit to work requests, dispatching personnel, responding to alarms, travel and activity monitoring of field personnel, monitoring work activities of field personnel against work schedule, contingency skills, response to third party enquiries, out of hours pipeline notification, response to man down alarm, tracking of field personnel (remote area), monitoring activities on pipeline, monitoring availability of assets (maintain a log), monitor equipment status, coordinating field activities, controlling and authorising field works, preparing incident reports, controlling gas flow and quality, controlling pressure and temperature of gas.

Application of the Unit

Application of the Unit **2)**

This Competency Standard Unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practice in the workplace. However,

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License to practice **3)**

practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as New Apprenticeships and the like.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Distribution Pathway

Transmission Pathway

Controller Pathway

Common Unit Group

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

Distribution Pathway

UEGNSG216A	Commission or decommission gas distribution pipelines

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Prerequisite Unit(s) **4)**

UEGNSG134A Establish a utilities work site

Transmission Pathway

UEGNSG344A Commission or decommission gas transmission pipelines

UEGNSG006A Use a portable gas detectors to locate escape

UEGNSG134A Establish a utilities work site

Controller Pathway

UEPOPS203B Operate and Monitor Communications System

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan for the monitoring and controlling of field activities	1.1 Work schedules, plans, requirements, established procedures detailed and analysed and if necessary and the extent of the preparation of the work determined for planning and coordination
	1.2 Shift hand-over detail is received and understood and confirmed according to established procedures
	1.3 Work is analysed, prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.4 Risk control measures for identified hazards are prioritised, implemented and evaluated against the work schedule
	1.5 Salient system constraints are communicated to relevant persons and identified for work sites as per established procedures
	1.6 Operational and commercial requirements are communicated to stakeholders as per established procedures
	1.7 OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.8 Relevant work permits are secured to coordinate the performance of work according to

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ELEMENT		PERFORMANCE CRITERIA	
			requirements and established procedures
		1.9	Liaison and communication with authorised persons, authorities, clients and land-owners is performed/actioned and activities are coordinated to carry out work
2	Undertake monitoring and controlling of field activities	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
		2.2	Work is performed and coordinated in accordance with a work schedule and established procedures
		2.3	OHS risks and incidents are identified and action taken according to established procedures
		2.4	Remedial actions are taken to overcome any shortfalls encountered in the work schedule according to requirements and established procedures
		2.5	Essential Knowledge and Associated Skills are applied in an agreed timeframe and to quality standards efficiently according to requirements and established procedures
		2.6	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
		2.7	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client/customer to community and industry standards
3	Complete procedures monitoring and controlling field activities	3.1	Work undertaken is checked against works schedule for conformance with requirements and anomalies are reported and solutions identified in accordance with established procedures
		3.2	Relevant work permit(s) and field activities are signed off and the status of plant, equipment and personnel movements recorded and handover procedures are conducted as per established

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ELEMENT	PERFORMANCE CRITERIA	
		procedures
	3.3	Shift handover detail is relayed and confirmed according to established procedures
	3.4	Work completion records, reports, documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of monitoring and controlling field activities.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G504 Field activities B

G 2.1.1 Work in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G 2.1.4 Apply relevant OHS regulations, policies and procedures

Evidence shall show an understanding of the basic workplace health and safety legislation and how this applies to individuals in a Gas Industry workplace, indicated by the following:

- Employer's responsibilities to relevant OHS legislation
- Employee's responsibilities to OHS legislation and organisation's policies and procedures

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- OHS policies and procedures at the worksite.
- Australian Standards, guidelines and codes of practice

G 2.1.5 Work safely in the gas industry by reducing risk and using correct PPE

Evidence shall show an understanding of how to work safely in the gas industry indicated by the ability to:

- Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements
- Correctly interpret gas markers
- Identify the correct PPE required for work in the Gas Industry
- Locate and comply with procedures for correctly checking, maintaining and storing PPE
- Apply the process of Hazard identification, Risk assessment and Control
- Complete Risk Assessment forms such as Work Permits and JHA's, JSA's, JSEA's, SWM's etc
- Report workplace hazards

G 2.1.9 Respond to emergency and accident situations

Evidence shall show knowledge and skills in dealing with emergency or accident situations at a Gas Industry workplace, indicated by the following:

- Situations of accidents and emergency
- Comply with procedures for accidents and incidents
- Correct use of emergency equipment and procedures for a fire
- Correct use of breathing apparatus
- Correct use of gas detectors/oxygen monitoring devices
- Correct use of emergency equipment and procedures for a gas leak or vapour emission
- Report emergencies and accidents

G 2.1.14 Read and interpret Gas Industry documents

Evidence shall show an ability to read and interpret Gas Industry documents indicated by the following:

- Understand and use signs, symbols terminology and legends as used in gas industry procedures and documents
- Identify, locate and implement gas industry standards, policies and procedures
- Interpret and read basic drawings and diagrams

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G 2.1.26 Communicate in the workplace

Evidence shall show an understanding and ability to communicate effectively in a Gas Industry work team indicated by the following:

- Effective use oral and written communications methods to achieve work related outcomes and solutions.
- Effectively receive, interpret and respond to workplace information and instructions
- Effectively convey and report work related information to fellow workers and customers
- Interact with fellow workers in a socially and culturally appropriate manner

G 4.1.1 Operate and supervise in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment

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- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points

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- components of applicable natural gases including LPG
- standard gas conditions
- combustion
- venting and purging principles
- Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical drawings including, but not limited to:
  - Process and Instrumentation Diagrams (PID)
  - Facility and pipeline construction and as-built drawings
  - Geographical Information System (GIS) drawings and data
  - Electrical drawings
  - Survey maps
  - Pipeline route maps and alignment sheets

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.10 Understand security breach procedures

Evidence shall show an understanding required to identify security breaches and the required action in dealing with

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such breaches, indicated by the following as applicable:

- identification of different types of security incidents including but not limited to:
  - physical security breaches at gas infrastructure
  - threat assessment and management
  - confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

G 4.1.11 Follow emergency/incident control procedures

Evidence shall show an application of emergency/incident control procedures used for applicable gas infrastructure, indicated by the following:

- compliance with applicable enterprise emergency/incident control policies and procedures
- communication with relevant stakeholders
- application of relevant procedures

G 4.1.14 Understand and comply with environmental and cultural issues requirements

Evidence shall show an understanding of environmental and cultural issues required of Gas Industry supervisors and autonomous workers, indicated by the following:

- understanding relevant environmental legislation, regulations, advisory standards, codes of practice and their impact on gas industry pipelines and facilities
- demonstrate appropriate actions and behaviours when dealing with environmental and cultural issues
- understanding of the significance of cultural awareness and native title legislation, regulations, advisory standards, codes of practice and cultural customs and practices and their impact on Gas Industry pipelines and facilities.

G 4.1.17 Demonstrate knowledge of pipeline systems

Evidence shall show an understanding required at a Gas Industry supervisory level of general principles associated with pipelines and other gas infrastructure, indicated by the following:

- identification, control and management of relevant threats against pipeline infrastructure and facilities
- identification of pipeline locations

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- application of guidelines for the use of excavation machinery near pipelines and infrastructure and damage
- operational specifications and safe working limitations of pipelines and infrastructure
- principles of cathodic protection and corrosion mitigation
- HB105 Guide to pipeline risk assessment in accordance with AS2885.1, AS2885 Part 3
- applicable pipeline legislation, regulations, advisory standards and codes of practice.

G 4.1.18 Apply problem solving techniques

Evidence shall show an understanding and application of problem solving techniques in a Gas Industry environment, indicated by the following:

- understanding and application of formal problem solving techniques
- understanding the nature of problems
- identifying, evaluating and selecting solutions
- evaluating the effectiveness of problem solving processes.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full

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can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

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- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
- Apply sustainable energy principles and practices as specified in the performance criteria and range
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills

- Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
  - Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Evaluate, respond and report threats to pipeline systems operation • Working knowledge of sections of the relevant Australian pipeline and associated standards • Working knowledge of the station function including identification of abnormal conditions of stations and reporting • Working knowledge of pipeline operational parameters • Use relevant field permit to work systems • Respond correctly to

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		alarms • Working knowledge of monitoring field work • Communicate effectively in the workplace • Operating communications equipment • Interpret technical drawings and symbols • Emergency Response procedures • Responding to a Dial Before You Dig enquiry • Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures • Maintain a safe and clean workplace • Apply planning skills
B	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed item

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.

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- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in monitoring and controlling field activities.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit.

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Range Statement

RANGE STATEMENT

10) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to compliance with the monitoring of permit to work requests, dispatching personnel, responding to alarms, travel and activity monitoring of field personnel, monitoring work activities of field personnel against work schedule, contingency skills, response to third party enquiries, out of hours pipeline notification, response to man down alarm, tracking of field personnel (remote area), monitoring activities on pipeline, monitoring availability of assets (maintain a log), monitor equipment status, coordinating field activities, controlling and authorising field works, preparing incident reports, controlling gas flow and quality, controlling pressure and temperature of gas.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Areas to be monitored:
- Areas to control:
- Gas infrastructure:
  - Organisational requirements (4)
  - Records/reports (5)
  - Information systems
  - Maps and drawings
  - Established procedures

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Control centre.

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UEGNSG515A Use control centre systems to monitor and control gas infrastructure

Modification History

This unit replaces UEGNSG505B Use control centre systems to monitor and control gas infrastructure

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This competency standard covers the use and operation of SCADA and other control centre information systems including outage management systems, alarm management systems, site security systems, communications systems, telemetry to effectively manage Gas Industry infrastructure.

Application of the Unit

Application of the Unit **2)**

This Competency Standard Unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practice in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as New Apprenticeships and the like.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

Distribution Pathway

Transmission Pathway

Controller Pathway

Common Unit Group

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas supply industry

Distribution Pathway

UEGNSG216A	Commission or decommission gas distribution pipelines
UEGNSG134A	Establish a utilities work site

Transmission Pathway

UEGNSG344A	Commission or decommission gas transmission pipelines

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Prerequisite Unit(s) **4)**

UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG134A	Establish a utilities work site

Controller Pathway

UEGNSG507A	Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices
MSS402061A	Use SCADA systems in operations

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan for the use of control centre systems to monitor and control pipelines	1.1	Work schedules, plans, requirements and established procedures are detailed and, if necessary, analysed and the extent of the preparation of the work determined for planning and coordination
	1.2	Shift handover detail is received and understood and confirmed according to established procedures
	1.3	Work is analysed, prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.4	Risk control measures for identified hazards are prioritised, implemented and evaluated against the work schedule
	1.5	Relevant system constraints are communicated to relevant persons and identified for work sites as per established procedures
	1.6	Operational and commercial requirements are communicated to stakeholders as per established procedures
	1.7	OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.8	Liaison and communication with authorised persons, authorities, clients and land-owners is completed and activities coordinated to carry out work
2 Undertake monitoring and controlling of gas	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards

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ELEMENT	PERFORMANCE CRITERIA	
infrastructure		
	2.2	Work is performed and coordinated in accordance with a work schedule, established procedures, operating conditions and nominations
	2.3	Respond to alarms and out of specification conditions in accordance with established procedures
	2.4	OHS risks and incidents are identified and action taken according to established procedures
	2.5	Actions are taken to overcome any shortfalls or abnormal events encountered in the operating conditions according to requirements and established procedures
	2.6	Essential Knowledge and Associated Skills are applied in an agreed timeframe and to quality standards efficiently according to requirements and established procedures
	2.7	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
	2.8	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client/customer to community and industry standards
3 Complete procedures for monitoring and controlling gas infrastructure	3.1	Work undertaken is checked against works schedule for conformance with requirements and anomalies are reported and solutions identified in accordance with established procedures
	3.2	Shift handover detail is relayed and confirmed according to established procedures
	3.3	Works completion records, reports, documentation and information is confirmed, processed and the appropriate persons notified

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of using control centre systems to monitor and control gas infrastructure.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G505 B Control gas infrastructure using control centre systems

G 2.1.1 Work in the gas sector

Evidence shall show an understanding of how work is conducted in the Gas Industry, specifically:

- The Gas Industry in Australia
- Australian gas resources
- Types of gas and uses
- Combustion.

G 2.1.4 Apply relevant OHS regulations, policies and procedures

Evidence shall show an understanding of the basic workplace health and safety legislation and how this applies to individuals in a Gas Industry workplace, indicated by the following:

- Employer's responsibilities to relevant OHS legislation
- Employee's responsibilities to OHS legislation and organisation's policies and procedures
- OHS policies and procedures at the worksite.
- Australian Standards, guidelines and codes of practice

G 2.1.5 Work safely in the gas industry by reducing risk and using correct PPE

Evidence shall show an understanding of how to work safely in the gas industry indicated by the ability to:

- Correctly interpret and comply with Safety Signs including workplace Hazards, Warnings and PPE requirements
- Correctly interpret gas markers

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- Identify the correct PPE required for work in the Gas Industry
- Locate and comply with procedures for correctly checking, maintaining and storing PPE
- Apply the process of Hazard identification, Risk assessment and Control
- Complete Risk Assessment forms such as Work Permits and JHA's, JSA's, JSEA's, SWM's etc
- Report workplace hazards

G 2.1.9 Respond to emergency and accident situations

Evidence shall show knowledge and skills in dealing with emergency or accident situations at a Gas Industry workplace, indicated by the following:

- Situations of accidents and emergency
- Comply with procedures for accidents and incidents
- Correct use of emergency equipment and procedures for a fire
- Correct use of breathing apparatus
- Correct use of gas detectors/oxygen monitoring devices
- Correct use of emergency equipment and procedures for a gas leak or vapour emission
- Report emergencies and accidents

G 2.1.14 Read and interpret workplace documents

Evidence shall show an ability to read and interpret Gas Industry documents indicated by the following:

- Understand and use signs, symbols terminology and legends as used in gas industry procedures and documents
- Identify, locate and implement gas industry standards, policies and procedures
- Interpret and read basic drawings and diagrams

G 2.1.26 Communicate in the workplace

Evidence shall show an understanding and ability to communicate effectively in a Gas Industry work team indicated by the following:

- Effective use oral and written communications methods to achieve work related outcomes and solutions.
- Effectively receive, interpret and respond to workplace information and instructions
- Effectively convey and report work related information to fellow workers and customers
- Interact with fellow workers in a socially and culturally

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appropriate manner

G 4.1.1 Operate and supervise in the Gas Industry

Evidence shall show an understanding of supervising and operating in a Gas Industry environment, indicated by the following:

- understanding and application of enterprise applicable standard operating procedures
- understanding and application of relevant enterprise permit to work systems
- understanding and application of alarm and communication systems
- understanding and application of relevant OHS and environmental legislative requirements including applicable emergency procedures
- demonstrate an understanding and application of planning, prioritisation and working autonomously in the Gas Industry.

G 4.1.2 Understand the effective operation of Gas Industry plant, equipment and materials

Evidence shall show an understanding of the effective operation of Gas Industry plant, equipment and materials, indicated by the following:

- understand and apply of relevant industry engineering terminology and units
- understanding of pipeline system operating parameters
- demonstrate operational knowledge of systems such as pumps, compressors, regulation, shutdown equipment, measurement systems by on-site or remote operation as applicable.
- understanding of relevant inspection and testing procedures for applicable plant and equipment
- understanding the process of commissioning and decommissioning of relevant equipment such as pipework, vessels and compressors, including on-site and remote operation as applicable.
- Understanding the characteristics of gas flows including compressed and non-compressed operations
- Understanding the characteristics, operation, capabilities and limitations of applicable tools and equipment including prime movers, compression and control systems, pipeline facilities and associated equipment
- understanding the operation of gas analysis and measuring equipment

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G 4.1.3 Communicate effectively in the Gas Industry at a supervisory level

Evidence shall show an understanding of communication techniques required in supervisory roles in the Gas Industry, indicated by the following:

- communicate effectively with a variety of Gas Industry stakeholders, using strategies for dealing with difficult situations. The communication includes oral, written or electronic communications, : with various stakeholders including:
  - workplace colleagues
  - workplace managers
  - relevant customers and suppliers
  - regulatory bodies
  - property/land owners (including traditional land owners) and tenants
  - emergency response organisations

G 4.1.4 Understand Gas Industry products, processes and characteristics

Evidence shall show a comprehensive understanding of Gas Industry products and characteristics, indicated by the following:

- understand the Gas Industry products and the characteristics and tolerances of the product including:
  - principles of applicable gas laws
    - gas pressure
    - gas temperature
    - compressibility
  - relative density – specific gravity
  - hydrocarbon and water dew points
  - components of applicable natural gases including LPG
  - standard gas conditions
  - combustion
  - venting and purging principles
  - Effects of temperature and pressure on infrastructure

G 4.1.5 Interpret Gas Industry drawings

Evidence shall show an ability to interpret and understand Gas Industry technical drawings, indicated by the following:

- understanding and interpreting relevant technical

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drawings including, but not limited to:

- Process and Instrumentation Diagrams (PID)
- Facility and pipeline construction and as-built drawings
- Geographical Information System (GIS) drawings and data
- Electrical drawings
- Survey maps
- Pipeline route maps and alignment sheets

G 4.1.7 Create Gas Industry reports and documentation

Evidence shall show an understanding and application of completing and interpreting enterprise-specific supervisory level Gas Industry reports including ,but not limited to:

- periodic operational reports
- budget reports and summaries
- regulatory reporting requirements

G 4.1.8 Use a personal computer

Evidence shall demonstrate requirements to use personal computer and undertake fundamental tasks, indicated by the following:

- send, answer and manage emails
- access the Internet for research purposes
- write documents using a word processing program
- develop a basic spreadsheet using a spreadsheet program
- apply formatting including cutting and pasting across a variety of computer applications (eg from excel to word)

G 4.1.10 Understand security breach procedures

Evidence shall show an understanding required to identify security breaches and the required action in dealing with such breaches, indicated by the following as applicable:

- identification of different types of security incidents including but not limited to:
  - physical security breaches at gas infrastructure
  - threat assessment and management
  - confidential information security
- communication with applicable emergency service and regulatory organisations
- compliance with applicable enterprise security policies and procedures

G 4.1.11 Follow emergency/incident control procedures

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Evidence shall show an application of emergency/incident control procedures used for applicable gas infrastructure, indicated by the following:

- compliance with applicable enterprise emergency/incident control policies and procedures
- communication with relevant stakeholders
- application of relevant procedures

G 4.1.14 Understand and comply with environmental and cultural issues requirements

Evidence shall show an understanding of environmental and cultural issues required of Gas Industry supervisors and autonomous workers, indicated by the following:

- understanding relevant environmental legislation, regulations, advisory standards, codes of practice and their impact on gas industry pipelines and facilities
- demonstrate appropriate actions and behaviours when dealing with environmental and cultural issues
- understanding of the significance of cultural awareness and native title legislation, regulations, advisory standards, codes of practice and cultural customs and practices and their impact on Gas Industry pipelines and facilities.

G 4.1.17 Demonstrate knowledge of pipeline systems

Evidence shall show an understanding required at a Gas Industry supervisory level of general principles associated with pipelines and other gas infrastructure, indicated by the following:

- identification, control and management of relevant threats against pipeline infrastructure and facilities
- identification of pipeline locations
- application of guidelines for the use of excavation machinery near pipelines and infrastructure and damage
- operational specifications and safe working limitations of pipelines and infrastructure
- principles of cathodic protection and corrosion mitigation
- HB105 Guide to pipeline risk assessment in accordance with AS2885.1, AS2885 Part 3
- applicable pipeline legislation, regulations, advisory standards and codes of practice.

G 4.1.18 Apply problem solving techniques

Evidence shall show an understanding and application of problem solving techniques in a Gas Industry environment,

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indicated by the following:

- understanding and application of formal problem solving techniques
- understanding the nature of problems
- identifying, evaluating and selecting solutions
- evaluating the effectiveness of problem solving processes.

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence

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need to be ‘rich’ in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its ‘richness’. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the ‘Assessment Guidelines — UEG11’. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills

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- Conduct work observing the relevant anti discrimination legislation, regulations, polices and workplace procedures
    - Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All	• Evaluate, respond and report threats to pipeline systems operation • Working knowledge of sections of the relevant Australian pipeline and associated standards • Working knowledge of the station function including identification of abnormal conditions of stations and reporting • Working knowledge of pipeline operational parameters • Respond correctly to alarms • Operation of SCADA and other associated information systems • Communicate effectively in the workplace • Operating communications equipment • Interpret technical drawings and symbols • Emergency Response procedures • Work utilising relevant

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		OHS legislation, regulations, codes of practice, policies and procedures • Maintain a safe and clean workplace • Apply planning skills • Fault and incident reporting and follow up process

B	At least 3	• Operation and or monitoring of:
		  • compressor stations
		  • regulator stations
		  • power generation stations
		  • custody transfer stations
		  • odourant stations
		  • valves and actuators
		  • heaters
		  • meter stations
		  • gas quality equipment
		  • system fringe location
		  • complex analysis modelling systems
		  • corrosion protection systems
		  • filtration systems
		  • PIGs
		• Telemetry and data communications systems

C	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

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Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in using control centre systems to monitor and control gas infrastructure.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

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Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to compliance with the following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Areas to be monitored:
- Areas to control:
- Gas infrastructure:
  - Organisational requirements (4)
  - Records/reports (5)
  - Information systems
  - Maps and drawings
  - Established procedures
  - Established procedures

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

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Competency Field **11)**

Control centre.

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UEGNSG611B Control LPG storage/processing operations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the control of LPG storage/processing operations. The competency standard refers to utilisation of resources; operational; monitoring; referring to the appropriate persons; identifying types of equipment and faults and developing the required reports.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any work site where liquefied petroleum gas operations occur.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan control of operations	1.1 Work schedules, including drawings, plans, requirements, established procedures and material lists are detailed, analysed if necessary by site inspection and the extent of the preparation of the work determined for planning and coordination
	1.2 Work is prioritised, processing priorities are determined and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3 Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.4 OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.5 Relevant work permits are secured to coordinate the performance of work according to requirements and established procedures
	1.6 Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe and technical working order
	1.7 Clients are provided with possible solutions and options within the scope, acceptable cost and requirements
	1.8 Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.9 Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and

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ELEMENT	PERFORMANCE CRITERIA	
		authorised where applicable in accordance with establish procedures
	1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Control operations	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	First Aid and other related work procedures such as systems isolation are performed according to requirements and established procedures
	2.3	Information concerning the operation of the storage or processing system is monitored and conveyed to relevant persons and other work areas to ensure safe and efficient system
	2.4	Work is performed and coordinated in accordance with a work schedule and to requirements
	2.5	Alarm codes are correctly interpreted and acknowledged and other hazards, OHS risks and control measures are monitored and preventative action taken and appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
	2.6	Remedial actions are taken to overcome any shortfalls encountered in the work schedule according to requirements and/or established procedures
	2.7	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.8	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
	2.9	Ongoing checks of quality of the work are undertaken in accordance with requirements and

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures to ensure a quality outcome is achieved for the client/customer to community and industry standards
3 Shut down operations	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported and solutions identified in accordance with established procedures
	3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being exceeded
	3.4	Relevant work permit(s) are signed off and system is returned to service and advice is given to clients in accordance with requirements
	3.5	Works completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices, Controlling LPG Storage/Processing Operations.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G611B Gaseous fuel storage

G 3.6.1 Working safely in an LPG environment

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Evidence shall show an understanding of the requirements to work safely in an LPG environment, indicated by the following:

- working safely in accordance with procedures, OHS, emergency and environmental requirements
- awareness of the properties of LPG
- identifying variations and irregularities.

G 3.6.2 understanding the correct use of plant and equipment in an LPG environment

Evidence shall show an understanding of the requirements to correctly use plant and equipment in an LPG environment, indicated by the following:

- operate transfer equipment including compressors or pumps
- transfer methods for pipes and hoses
- selection, testing and set up processes for transfer equipment
- making analytical judgements for appropriate adjustments to plant and equipment
- awareness of test equipment and its uses
- operation, testing and inspecting equipment that includes pressure vessels and associated fitting
- understanding manufacturer's specifications to make adjustments to parts where appropriate
- understanding of how to select appropriate equipment for tasks associated with LPG
- operating correctly gas analysis equipment
- operating correctly gas alarm and communication equipment.

G 3.6.3 Static electricity

Evidence shall show an understanding of the requirements to deal with situations where static electricity is present in an LPG environment, indicated by the following:

- understanding properties of static electricity and how to mange it in an LPG environment.

G 3.6.4 LPG communication including the recording of LPG information

Evidence shall show an understanding of the requirements to communicate and record information in an LPG environment, indicated by the following:

- accurately recording LPG information
- recording and reporting corrective actions in an LPG

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environment
- identifying and reporting any problems associated with transfer processes and procedures
- communicating in an LPG environment
- understanding of permit to work systems for an LPG environment.

G 3.6.5 The LPG production process

Evidence shall show an understanding of the requirements to work in the LPG production process, indicated by the following:

- understanding of the appropriate processing, handling and storage operations for LPG
- understanding how to mix/blend the properties of LPG.

G 3.6.6 Technical drawings

Evidence shall show an understanding of the requirements to understand technical drawings for the LPG environment, indicated by the following:

- understanding and interpreting technical drawings.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full

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can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control

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measures as specified in the Performance Criteria and range

- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 5	Resources required: Pumps and compressors Valves Vessels Control and monitoring equipment Mixing equipment Sampling equipment Air equipment
B	At least 3	Unexpected events: Gas leaks and fire Equipment failure LPG supply levels Electricity supply fires
C	At least 4	Monitoring of storage/processing

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		facilities: Monitoring pressure Temperature Levels Corrosion Gas leaks Stock levels Security
D	At least 5	Equipment faults: Electrical problems Over filled vessel Compressor failure Pump failure Out of current inspection status Gauge failure Hose rupture/leaks Instruments out of calibration Non-flow of LPG
E	All	Reports: Routine inspections (daily readings, monthly checks) Scheduled maintenance activities Mandatory or statutory inspections Hazard and incident reports
F	All	Working safely in an LPG environment Correct use of plant and equipment in an LPG environment Knowledge of the effects/potential effects of

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		static electricity Recording information
G	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in controlling LPG storage/processing operations.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment

9.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

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Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to the control LPG storage/processing operations.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Resources

Operational

Monitoring

Relevant persons

Types of equipment faults

Reports

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG612B Supervise technical operations for liquefied petroleum gas storage and processing

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers the technical supervision of liquefied petroleum gas storage, processing and maintenance operations. The competency standard refers to Resources; Activities; Appropriate Persons; Relevant Persons; Monitoring; Operational Requirements; Effective Communication; Types of Gas System Faults; Relevant Documentation; Legislative Requirements; Records and reports

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any work site where liquefied petroleum gas operations occur.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of

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License to practice **3)**

operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Nil

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the Performance Criteria describe the required performance

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essential outcomes of a competency standard unit	needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare to supervise operations	1.1 Operational area is checked for hazards and the works schedule(s), including drawings, plans, requirements, established procedures and material lists are detailed, analysed if necessary by site inspection and the extent of the preparation of the work determined for planning and coordination
	1.2 Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes to a quality standard and in accordance with established procedures
	1.3 Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.4 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.5 OHS, environmental and sustainable energy policies and procedures related to the work are identified to ensure safe systems of work are followed
	1.6 Relevant work permits are secured to coordinate the performance of work according to requirements and or established procedures
	1.7 Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for the job are identified, scheduled, coordinated and confirmed in a safe and technical working order
	1.8 Clients are provided with possible solutions and options within the scope, acceptable cost and

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ELEMENT	PERFORMANCE CRITERIA	
		requirements
	1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities coordinated and authorised where applicable in accordance with established procedures
	1.11	Status of the system is sought through communication with pipeline control centre in accordance with established procedures
	1.12	Expenditure is forecast and managed to keep within operational budget constraints
2 Supervise operations	2.1	OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Appropriate persons are inducted according to company standard operating procedures
	2.3	First Aid and other related work procedures are performed according to requirements and established procedures
	2.4	Lifting, climbing, working in confined spaces, excavations, trenches, and aloft, use of power tools, techniques and practices are safely exercised according to requirements
	2.5	Equipment faults are identified through inspection and testing of operational equipment in accordance with a work schedule and to requirements
	2.6	Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.7	Operating conditions of equipment are monitored through gauge levels, temperatures,

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ELEMENT	PERFORMANCE CRITERIA	
		flow indicators in order to determine performance of equipment and system
	2.8	Information concerning the operation of the pipeline system is monitored and conveyed to relevant persons to ensure safe and efficient operation of the pipeline system
	2.9	Fault finding and troubleshooting techniques are applied to operational systems and equipment to identify any repairs or maintenance that is required according to requirements and established procedures
	2.10	Essential Knowledge and Associated Skills are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.11	Solutions to non-routine problems are identified and actioned using Essential Knowledge and Associated Skills according to requirements
	2.12	Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client/customer to a community and industry standards
3 Finalise completion details	3.1	Work undertaken is checked against works schedule for conformance with requirements and anomalies which are reported and solutions identified in accordance with established procedures
	3.2	Accidents and injuries are reported and followed up in accordance with requirements and established procedures
	3.3	Work site is rehabilitated/cleaned up and confirmed safe and in accordance with established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA
	3.5 Relevant work permit(s) are signed off in accordance with requirements
	3.6 Works completion records, reports as installed/modified drawing(s) and documentation and information is confirmed, processed and the appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices for the supervising of technical operations for liquefied petroleum gas storage and processing.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-G612B Gaseous fuel storage technical operations

G 3.6.1 Working safely in an LPG environment

Evidence shall show an understanding of the requirements to work safely in an LPG environment, indicated by the following:

- working safely in accordance with procedures, OHS, emergency and environmental requirements
- awareness of the properties of LPG
- identifying variations and irregularities.

G 3.6.6 Technical drawings

Evidence shall show an understanding of the requirements to understand technical drawings for the LPG environment, indicated by the following:

- understanding and interpreting technical drawings.

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G 5.6.1 Supervision of LPG processes

Evidence shall show an understanding of the requirements to supervise LPG staff, activities and procedures, indicated by the following:

- effective communication including:
    - Demonstration of an understanding and skill in appropriate workplace colleague and third-party communication
    - Understanding relevant organisational and regulatory requirements in workplace communications
  - motives for communication
  - communication networks
  - communication types including:
    - Oral – directly spoken
    - Oral – telephone or radio
    - Written – reports, memos etc
    - Electronic – email, electronic files, video presentations etc
  - choosing the medium and the flow of a message
  - blocks to effective communication
- using emergency equipment including fire fighting equipment
  - dealing with emergencies
  - elements of an emergency plan
  - fire extinguishing system
- understanding industrial awards and employee entitlements
  - individual and collective bargaining agreements
  - awards and employee entitlements
- correct waste management procedures
  - organisational requirements for waste management
  - affects of not managing waste effectively
- coordinating the work of others
  - the importance of good management
  - what good managers do
  - the importance of leadership
  - effective leadership
  - the importance of control
  - control methods

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- principles of effective control
- control systems and techniques

- applying permit to work system including permits and limitations
  - understanding applicable organisational permit to work systems
  - demonstrated application of an organisational permit to work system
- providing technical leadership and accurate instruction
- understanding organisational procedures for the testing, diagnosing and rectification of faults.

G 5.6.2 Assess and control odourant levels for LPG processing

Evidence shall show an understanding of the requirements to assess the correct odourant levels for the processing of LPG, indicated by the following:

- assessing correct odourant levels for processing LPG.
- Implication of incorrect odourant levels
- Correct odorant injection levels

G 5.6.3 Operate LPG plant and equipment

Evidence shall show an understanding of the requirements to undertake the operation of plant and equipment used in the LPG environment, indicated by the following:

- correct vessel inspecting, testing techniques and coating procedures to protect against corrosion
- liquid product transfer (fiscal and operational)
- monitor, identify and rectify any problems associated with storage processing (transfer processes and procedures)
- metering and calibration procedures
- operation of storage/processing facilities and equipment
- operation of pumps, compressors, valving, shutdown and deluge systems.

Evidence Guide

EVIDENCE GUIDE

9) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in

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EVIDENCE GUIDE

accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to **9.2)**

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demonstrate competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 5	Resources: Vessels

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		Pumps Compressors Valves Product Control and monitoring equipment Mixing and sampling equipment Air equipment
B	At least 3	Activities: Product revival, processing and/or dispatch Rectification of gas system faults Scheduling of maintenance, repairs and/or modifications Commissioning of new plant and/or equipment Stock control
C	At least 5	Monitoring of storage/processing facilities: Pressure Temperature Volume Corrosion Liquid/vapour leaks Product levels Product levels Security
D	At least 3	Operational requirements: Product levels Product blending/mixing/odourising

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		Manufacturers maintenance requirements Rectification of gas system faults
E	At least 4	Types of faults: Liquid/vapour leaks Electrical problems Mechanical failure Over filled vessel Out of current inspection status Gauge failure
F	All	Working safely in an LPG environment Interpreting technical drawings Determining odourant levels for LPG processing OHS and associated legislative requirements ADG Code
G	At least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

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- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in supervising technical operations for liquefied petroleum gas storage and processing.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **9.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Essential Knowledge and Associated Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit.

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Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to supervising technical operations for liquefied petroleum gas storage and processing.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

Resources

Activities

Appropriate persons (5)

Relevant persons

Monitoring

Operational requirements (5)

Effective communication (5)

Types of gas system faults

Relevant documentation (5)

Legislative requirements (5)

Records/reports (5)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG614A Load, unload, exchange and connect LPG cylinders

Modification History

This unit replaces UEGNSG603B Load, unload and exchanging gas cylinders

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the loading, unloading, transporting, exchanging and connecting liquefied petroleum gas (LPG) cylinders to an approved installation in accordance with relevant legislation, codes, regulations and established procedures.

This encompasses following procedures to correctly and safely carry out the work using appropriate materials, tools and equipment.

Application of the Unit

Application of the Unit **2)**

This unit shall apply to work sites where the distribution of liquefied petroleum gas cylinders occurs, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace. Typically it applies to cylinder delivery drivers and service/ installation gas fitters who exchange LPG gas cylinders connected to an approved gas installation.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract

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of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the

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Prerequisite Unit(s) **4)**

	gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to load/unload truck, , exchange and connect LPG cylinders	1.1	Work instructions are received and confirmed with appropriate persons
	1.2	Relevant requirements and established procedures to be followed for the work to be performed are discussed with all persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.4	Suggestions to assist with the loading, unloading and exchanging of gas cylinders are made to others involved in the work
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
	1.6	Scope of responsibility under the relevant work permit are received and confirmed according to requirements and established procedures with relevant persons where appropriate
	1.7	Resources including equipment, tools and personal protective equipment required for the job are obtained and in working order according to established procedures
	1.8	Relevant responsibilities associated with First Aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures and followed in the instance of an incident.
	1.9	Client issues are referred to appropriate persons in accordance with industry standards

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ELEMENT	PERFORMANCE CRITERIA	
	1.10	Site is prepared according to given instructions and the work schedule for a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Load/unload truck, exchanging and connect LPG cylinders	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces and aloft, and use of power tools, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to eliminate the prospects of incidents
	2.3	Operational knowledge for correct positioning of the truck, loading, unloading and exchanging of gas cylinders is confirmed to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements and established procedures
	2.4	The loading, unloading, exchanging and connection of gas cylinders is carried out in accordance with given instructions and established procedures
	2.5	Potential hazards and safety risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.7	Problems associated with the loading, unloading and exchanging of gas cylinders are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
3 Complete work and relevant documentation	3.1	Work undertaken is checked against work schedule and anomalies reported to authorised persons in accordance with established procedures
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Appropriate persons are notified of work completion according to established procedures
	3.6	Delivery documentation and work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for loading, unloading and exchanging gas cylinders.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G614A LPG cylinder transportation, handling and connection

Evidence shall show an understanding of loading, unloading, transporting, exchanging and connecting liquefied petroleum gas (LPG) gas cylinders to an approved installation in accordance with as per relevant legislation, codes, regulations

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REQUIRED SKILLS AND KNOWLEDGE

and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice

T2. Relevant OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG cylinders

- Properties of LP Gas
- Types, construction, size, valves, labelling, Material Safety Data Sheets (MSDS)
- Transportation requirements
- Handling, loading, unloading,
- Disconnecting and connecting
- Out of gas procedures
- Leak testing

T4. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T5. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T6. Manual handling

- Characteristics, types, techniques

T7. Traffic control at a worksite

- relevant traffic authority regulations
- signs/devices and techniques to control pedestrians and traffic
- monitoring traffic controls

T8. Accidents and emergency

- Types: fire, gas leak Procedures
- Emergency equipment and procedures
  - breathing apparatus
  - gas detectors/oxygen monitoring devices
- Reporting

T9. Organisation's policies, quality requirements, specifications, forms and reports for work activity

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Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Loading, unloading, transporting, exchanging and connecting liquefied petroleum gas (LPG) gas cylinders to an approved installation in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including:

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Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment/tools	All	• Cylinder trolley • Hoses and fittings • Hand tools Leak detection devices • Truck tail gate loader • Tray gates and ropes
B. Procedures	All	• OHS • Cylinder transportation • Cylinder loading and unloading • Cylinder exchange and connecting • Hazard identification, risk assessment and control • Emergency procedures and response action • Organisations
C. Unplanned event	At least one occasion	Deal with an unplanned event by drawing on required knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.

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- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent **8.5)**

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assessment and relationship with other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work basic activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to loading, unloading, transporting, exchanging and connecting LPG cylinders to an approved gas installation

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate Persons
- Tools, Equipment and Materials
- Records/Documentation
- Delivery Area
- Loading and Unloading of Cylinders

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG615A Fill LPG cylinders

Modification History

This unit replaces UEGNSG604B Fill gas cylinders

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers inspecting and filling liquefied petroleum gas (LPG) cylinders in accordance with relevant legislation, codes, regulations and established procedures.

This encompasses following procedures to correctly and safely carry out the work using appropriate materials, tools and equipment. This work includes the inspection of the cylinder for correct date on cylinder, company's ownership, corrosion and impact damage, leaks, component and part damage.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to work sites where the distribution of liquefied petroleum gas (LPG) occurs subject to all Workplace Health and Safety (WHS)

/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to fill LPG cylinders	1.1	Work instructions are received and confirmed
	1.2	Relevant requirements and established procedures to be followed for the work to be performed are discussed with all persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.4	Suggestions to assist with the filling of gas cylinders are made to others involved in the work

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ELEMENT	PERFORMANCE CRITERIA	
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
	1.6	Scope of responsibility under the relevant work permit are received and confirmed according to requirements and established procedures with relevant persons
	1.7	Resources including equipment, tools and personal protective equipment required for the job are obtained and in working order according to established procedures
	1.8	Relevant responsibilities associated with First Aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures and followed in the instance of an incident.
	1.9	Client issues are referred to appropriate persons in accordance with industry and community standards
	1.10	Site is prepared according to given instructions and the work schedule for a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Fill LPG cylinders	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to eliminate the prospects of incidents
	2.3	Operational knowledge for the filling of gas cylinders is confirmed to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to

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ELEMENT	PERFORMANCE CRITERIA	
		requirements and established procedures
	2.4	The filling of gas cylinders is carried out in accordance with given instructions and established procedures
	2.5	Cylinders with defects such as leaks, damage etc. are identified, marked and quarantined and identified hazards and WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.7	Problems associated with the filling of gas cylinders are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	Cylinders are lifted and moved according to standard operating procedures against the work schedule and anomalies reported to authorised persons
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Appropriate persons are notified of work completion according to established procedures

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ELEMENT	PERFORMANCE CRITERIA
	3.6 Work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the filling of LPG cylinders.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G615A LPG cylinder filling

Evidence shall show an understanding of inspecting and filling of liquefied petroleum gas (LPG) cylinders in accordance with relevant legislation, codes, regulations and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice including AS1596 and AS2030 or replacements

T2. Relevant OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG cylinders

- Properties of LP Gas
- Types, construction, size, valves, labelling, Material Safety Data Sheets (MSDS)
- Inspection requirements
  - correct date on cylinder,; company’s ownership,; corrosion and impact damage,; leaks,; component and part damage
- Filling
  - requirements, methods, tools/equipment, procedures, precautions
- Handling
- Leak testing

T4. Personal Protection Equipment

- Types, application, checking, maintenance and storage

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REQUIRED SKILLS AND KNOWLEDGE

T5. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T6. Manual handling

- Characteristics, types, techniques

T7. Accidents and emergency

- Types: fire, gas leak
- Emergency equipment and procedures
  - breathing apparatus
  - gas detectors/oxygen monitoring devices
- Reporting

T8. Organisation's policies, quality requirements, specifications, forms and reports for work activity

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry’s preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord

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with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and

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range

- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Inspecting and filling of liquefied petroleum gas (LPG) cylinders in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Tools/ equipment	At least 5	• LPG cylinders • Cylinder trolleys • Hose and fittings • Leak detection devices • Valves • Gauges • Spindles • Scales • Decanting equipment • Dispensing pumps • Hand tools
B. Procedur	All	• WHS/OHS • Job safety analysis

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es		• Manual handling • Cylinder inspection • Cylinder filling • Checking for leaks • Emergency procedures and response action
C. Unplanned event	At least one occasion	Deal with an unplanned event by drawing on required skills and l knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.
- These should be part of the formal learning/assessment environment.
-

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved

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industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to inspecting and filling LPG cylinders by weight using scales or by decanting or by dispenser pump at an LPG terminal or a cylinder filling installation compliant to the requirements of AS1596.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate Persons
- Equipment
- Inspection Checks
- Legislative Requirements

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG616A Refurbish gas cylinders

Modification History

This unit replaces UEGNSG605B Refurbish gas cylinders

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers inspecting, testing and refurbishing approved liquefied petroleum gas (LPG) cylinders accordance with relevant legislation, codes, regulations and established procedures.

It encompasses following procedures to correctly and safely carry out the work using appropriate materials, tools and equipment.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to work sites where LPG gas cylinders are refurbished and filled for distribution, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 2 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are subject to license regulation. The work site must be registered and certified as a cylinder test station with LPG cylinders on the scope of registration.

Competency can only be applied under the supervision of a test station signatory unless certified by SAI Global as a test station signatory. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to refurbish LPG cylinders	1.1	Work instructions are received and confirmed
	1.2	Relevant requirements and established procedures to be followed for the work to be performed are discussed with all persons to

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ELEMENT	PERFORMANCE CRITERIA	
		establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.4	Appropriate persons are consulted to ensure the work is coordinated effectively and suggestions to assist with the refurbishing of gas cylinders are made to others involved in the work
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.6	Materials, tools and personal protective equipment required for the job are obtained and in working order according to established procedures
	1.7	Relevant responsibilities associated with related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures are followed.
	1.8	Client issues are referred to appropriate persons in accordance with industry and community standards
	1.9	Site is prepared according to given instructions and the work schedule for a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Inspect and refurbish LPG cylinders	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing and use of tools, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to eliminate the prospects of incidents

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ELEMENT	PERFORMANCE CRITERIA	
	2.3	Operational knowledge for the refurbishing of gas cylinders is confirmed to ensure completion in an agreed timeframe and to quality/ safety/ environmental standards according to requirements and established procedures
	2.4	The refurbishing of gas cylinders is carried out in accordance with given instructions and established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Cylinders that are damaged or do not comply to standards are coded and condemned according to established procedures
	2.7	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.8	Problems associated with the refurbishing of gas cylinders are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.9	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	Work undertaken is checked against work schedule and anomalies reported to authorised persons in accordance with established procedures
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and

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ELEMENT	PERFORMANCE CRITERIA	
		materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Inspection results and completion processes are performed according to established procedures
	3.6	Work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the inspection and refurbishment of LPG cylinders.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G616A LP Gas cylinders inspection and refurbishment

Evidence shall show an understanding of inspecting and refurbishment of liquefied petroleum gas (LPG) cylinders in accordance with relevant legislation, codes, regulations and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice including AS1596 and AS2030 or replacements

T2. Relevant OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG cylinders

- Properties of LP Gas
- Types, construction, size, valves, labelling, Material Safety Data Sheets (MSDS)
- Handling
- Inspection requirements, types, procedures, required equipment/tools

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REQUIRED SKILLS AND KNOWLEDGE

- Leak testing requirements, types, procedures, required equipment/tools
- Condemning and disposal
- Refurbishment requirements, types, procedures, required equipment/tools

T4. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T5. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T6. Manual handling

- Characteristics, types, techniques

T7. Accidents and emergency

- Types: fire, gas leak
- Emergency equipment and procedures
  - breathing apparatus
  - gas detectors/oxygen monitoring devices
- Reporting

T8. Organisation's policies, quality requirements, specifications, forms and reports for work activity

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best

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utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

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- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Inspecting and refurbishing liquefied petroleum gas (LPG) cylinders in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Tools/equipment	At least 10	• Liquid withdrawal valves • Vapour service valves • Relief valves • Contents gauges • In situ fill valves • Multiport valves

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		• Ullage tubes • LPG cylinders • Cylinder inverter • Decanting equipment • De-valving/re-valving tools • Date and test station stamping tools • Callipers • Stencils and decals • Cylinder destruction • Scales • Hand tools • Test equipment
B. Procedures	All	• Clean • Paint • Refurbish • Correct storage • Quarantine, purge, destroy and dispose of condemned cylinders
C. Inspection/test procedures	All	The following inspection checks are made and met requirements before returning cylinder to service: • Test date • Ownership • Corrosion and impact damage • Tare weight • Valve and thread condition • Safety relief valve capped and free from obstruction • Internal deposits • Paintwork

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		• Fire/heat damage • Stencilling and decals appropriate to cylinder type • Leak test
D. Recording procedures	All	• Standard operation procedures • Emergency procedures and response action • State regulations/statutes and permits • Record inspection/ refurbishment information accurately on gas industry forms and reports according to legislative requirements and established procedures
E. Unplanned event	At least one occasion	Deal with an unplanned event by drawing on required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency

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Standard Unit.

- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.
- These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment

8.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of

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learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to inspecting and refurbishing PLG cylinders at a work site registered and certified as a LPG cylinder test station, in accordance with relevant legislation, codes, regulations and established procedures.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate Persons
- Test Station
- Materials
- Tools and Equipment
- Inspection Checks
- Damage to Cylinders
- Testing

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG617A Monitor and control the transfer of bulk LPG

Modification History

This unit replaces UEGNSG606B Monitor and control the transfer of LPG

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers the safe transfer of liquefied petroleum gas (LPG) into or out of bulk storage at an LPG terminal or refinery by pipelines and hoses. This includes ship to tank, tank to tank, tank to tanker and tank to distribution network.

It encompasses following procedures to correctly and safely carry out the work using appropriate materials, tools and equipment, relevant emergency response procedures and documentation.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to work sites where liquefied petroleum gas is stored and transferred in bulk quantities, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace..

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas

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Prerequisite Unit(s) **4)**

	industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan and prepare to transfer of LPG	1.1	Availability of equipment is determined against work schedule(s) and established procedures and material lists are received, analysed and confirmed if necessary by site inspection
	1.2	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to requirements and established procedures for monitoring and controlling the transfer of LPG are obtained and confirmed for the purposes of the work performed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Equipment is checked and relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Pipelines and hoses are connected and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
	1.8	Relevant persons at worksite are confirmed to be current in First Aid and other related work procedures according to requirements
	1.9	Liaison and communication issues with authorised persons, authorities, clients and land owners are resolved and activities coordinated to carry out work
	1.10	Site is prepared and valves are operated

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ELEMENT	PERFORMANCE CRITERIA	
		according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2 Transfer of LPG	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces and/or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3	Required skills and knowledge for the monitoring and control of the transfer of LPG is applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4	The monitoring and transfer of LPG is carried out in accordance with the work schedule and to established procedures
	2.5	Transfer equipment is operated and identified hazards, WHS/OHS risks and control measures are monitored and preventative action taken in accordance with requirements and established procedures
	2.6	Pressure limits and liquid levels are monitored and unplanned events in the monitoring and control transfer of LPG are undertaken with the scope of established procedures
	2.7	Emergency response is selected and applied and known solutions to a variety of problems are applied using Essential Knowledge and Associated Skills
	2.8	Ongoing checks of quality of the work are

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ELEMENT	PERFORMANCE CRITERIA	
		undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	Work undertaken is checked against works schedule for conformance with requirements and anomalies reported in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Emergency shutdown procedures are applied in the event of serious equipment failure or operational parameters being exceeded in accordance with standard operating procedures
	3.7	Work completion records, reports as installed drawings and documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for monitoring and controlling the transfer of bulk LPG.

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REQUIRED SKILLS AND KNOWLEDGE

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G617A Transfer bulk LP Gas

Evidence shall show an understanding of monitoring and controlling the transfer of bulk LPG in accordance with relevant legislation, codes, regulations and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice

T2. Relevant WHS/OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG bulk storage vessels

- Properties of LP Gas
- Types, construction, size, valves, labelling, Material Safety Data Sheets (MSDS)
- inspection procedures

T4. LPG bulk transfer

- Requirements, applications, methods, procedures
- Equipment/tools
  - Types, selection, manufacturers specifications/instructions, testing, set up, adjusting
  - Compressors, pumps
  - Pipes and hoses
- Safety
- Gas alarm and communication equipment
- Ignition prevention/control
- Leak testing requirements, types, procedures, required equipment/tools

T5. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T6. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T7. Manual handling

- Characteristics, types, techniques

T8.Accidents and emergency

- Types: fire, gas leak
- Emergency response equipment and procedures

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REQUIRED SKILLS AND KNOWLEDGE

- breathing apparatus
- gas detectors/oxygen monitoring devices
- compliance requirements
- Reporting

T9. Organisation's policies, quality requirements, specifications, forms and reports for work activities

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries

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risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
    - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
    - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

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- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Monitoring and controlling the bulk transfer of liquefied petroleum gas (LPG) in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment	At least 4	• Pumps and compressors • Pipes • Hoses • Valves • Gauges • Tank connections and fittings • Articulated arms • Earthing clamps and connections
B. Applications	At least 2	Transfer of LPG by: • Ship to storage terminal • Tanker to tank • Tank to tanker • Tank to tank
C. Requirements	All	• WHS/OHS, environmental and associated legislative requirements • Australian Dangerous

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		Goods Codes • Manufacturer's specifications • Australian Standards
D. Unplanned event	At least one occasion	Deal with an unplanned event by drawing on required skills and to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.
- These should be part of the formal learning/assessment environment.
-

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and

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replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG133A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to the monitoring and control of the transfer of bulk LPG. This includes ship to tank, tank to tank, tank to tanker and tank to distribution network. Trucks, trains or ships may be used to unload tankers.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Equipment
- Transfer of LPG
- Transfer equipment
- Emergency response
- Documentation

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG618A Process Liquefied Petroleum Gas (LPG)

Modification History

This unit replaces UEGNSG607B Process LPG

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the processing of liquefied petroleum gas including the manufacture of TLGP, LPG and blending/mixing and de-odourising LPG.

This encompasses processing of LPG; process monitoring; relevant emergency response and completion of relevant documentation by following procedures to correctly and safely carry out the work using appropriate materials, tools and equipment.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to work sites where liquefied petroleum gas is processed, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

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Prerequisite Unit(s) **4)**

UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG617A	Monitor and control the transfer of bulk LPG

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to process LPG	1.1	Pipelines and hoses are connected in accordance with manufacturer's specifications and standard operating procedures
	1.2	Appropriate valves are operated in the correct sequence against relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to requirements and established procedures for processing of LPG are obtained and confirmed for the purposes of the work performed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Relevant work authorisations are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
	1.8	Relevant persons at worksite are confirmed to be current in First Aid and other related work procedures according to requirements
	1.9	Liaison and communication with authorised persons, authorities, clients and land owners is

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ELEMENT	PERFORMANCE CRITERIA	
		completed so that work can be carried out where necessary
	1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2 Process LPG	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3	Required Skills and Knowledge for the processing of LPG is applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4	Adjustment and monitoring of controls and the processing of LPG is carried out in accordance with the work schedule and to requirements and established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Emergency response is selected and unplanned events in the processing of LPG are undertaken with the scope of established procedures
	2.7	Known solutions to a variety of problems are applied using required Skills and Knowledge
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions

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ELEMENT	PERFORMANCE CRITERIA	
		and established procedures
3 Complete work and relevant documentation	3.1	Work completion is notified and work undertaken is checked against work schedules for conformance with requirements and anomalies reported in accordance with established procedures
	3.2	Accidents and/or injuries are reported in accordance with requirements and established procedures where applicable
	3.3	Shutdown is completed in accordance with standard operating procedures and operating conditions
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Work completion is notified and relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Work completion records, reports and information is finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit*

Evidence shall show that knowledge has been acquired of safe working practices for the processing of LPG.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G618A LP Gas processing

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REQUIRED SKILLS AND KNOWLEDGE

Evidence shall show an understanding of processing LPG in accordance with relevant legislation, codes, regulations and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice

T2. Relevant WHS/OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG storage/pressure vessels

- Types, construction, size, valves, labelling, Material Safety Data Sheets (MSDS)
- Testing and inspection procedures

T4. LPG bulk transfer

- Requirements, applications, methods, procedures
- Equipment/tools
  - Types, selection, manufacturers specifications/instructions, testing, set up, adjusting
  - Compressors, pumps
  - Pipes and hoses

T5. LPG processing

- Requirements, applications, methods, procedures
- Mix/blend properties and specifications
- Equipment/tools
  - Types, selection, manufacturers specifications/instructions, testing, set up
  - Analytical judgements for appropriate adjustments to plant and equipment
  - Variations and irregularities identification
- Gas analysis equipment
- Safety
- Gas alarm and communication equipment
- Ignition prevention/control
- Leak testing requirements, types, procedures, required equipment/tools

T6. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T7. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T8. Manual handling

- Characteristics, types, techniques

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REQUIRED SKILLS AND KNOWLEDGE

T9. Accidents and emergency

- Types: fire, gas leak
- Emergency response equipment and procedures
  - breathing apparatus
  - gas detectors/oxygen monitoring devices
  - compliance requirements
- Reporting

T10. Organisation's policies, quality requirements, specifications, forms and reports for work activities

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being

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assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
    - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
    - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded

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result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti -discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Processing liquefied petroleum gas in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment	All	• Pumps • Valves • Vessels • Control and monitoring equipment • Mixing/sampling equipment
B. Processes	At least 1	• Processing LPG: • Blending/mixing LPG • Manufacturing TLGP • De-Odourising LPG
C. Process monitoring includes checks for:	At least 4 *Must do	• Stock levels* • Pressures* • Gas heating valves • Shutdown system* • Molecular sieve de-odourisation • Aeration
D. Emergency Response	All	• Gas leaks and fire • Equipment failure • Hazards and incidents

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E. Requirements	All	• WHS/OHS, environmental and associated legislative requirements • Product specifications and quality assurance documentation • Manufacturer's specifications • Australian Standards
F. Unplanned events	At least one occasion	Deal with an unplanned event by drawing on required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace.

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Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG617A	Monitor and control the transfer of bulk LPG
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to processing LPG. This may include blending/mixing LPG, manufacturing TLGP and de-odourising LPG

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Equipment
- Processing LPG
- Process monitoring
- Emergency response
- Documentation

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG619A Perform scheduled maintenance on gas processing or storage facilities and equipment

Modification History

This unit replaces UEGNSG608B Perform minor maintenance on gas processing/storage facilities and equipment

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers carrying out scheduled maintenance and the repair and replacement of parts on liquefied petroleum gas processing or storage facilities and equipment. This includes pressure vessels, valves and fittings; transfer equipment, pumps, compressors, transfer hoses, pipework and seals.

It encompasses following procedures to correctly and safely carry out the work using appropriate materials, tools and equipment,

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to work sites where liquefied petroleum gas is processed and stored, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti- discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of

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License to practice **3)**

operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

Relevant Trade qualification, for example

- Certificate III in Plumbing – Gas Fitter
- Certificate III in Mechanical Fitter

Plus

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG006A	Use portable gas detector

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare and plan for maintenance and repair activities	1.1 All necessary and appropriate facilities, tools, test and measurement instruments, materials and components to allow the completion of the work are selected against the work schedule(s), including drawings, plans, requirements and established procedures
	1.2 Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3 WHS/OHS, environmental and sustainable energy policies and procedures related to performing minor maintenance on gas processing and storage facilities and equipment are obtained and confirmed

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ELEMENT	PERFORMANCE CRITERIA
	1.4 Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5 Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6 The facilities and equipment is made safe by ensuring it is safely isolated, depressurised, purged, tagged and locked out before allowing any repair or maintenance work to be undertaken and the relevant work permits are obtained to access and perform work according to requirements and established procedures
	1.7 Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
	1.8 Relevant persons at worksite are confirmed to be current in First Aid and other related work procedures according to requirements
	1.9 Liaison and communication with authorised persons, authorities, clients and land owners is completed so that work can be carried out where necessary
	1.10 Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11 Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
	1.12 Fault-finding and troubleshooting techniques are applied to operational systems in order to identify any repairs or maintenance which may

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ELEMENT	PERFORMANCE CRITERIA	
		need to be undertaken
	1.13	Road signs, barriers and warning devices are positioned in accordance with requirements including traffic management plans
2 Perform scheduled maintenance and repairs to gas processing/storage facilities	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3	Required Skills and Knowledge for the performing of minor maintenance on gas processing and storage facilities and equipment is applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4	Adjustments to calibration and test equipment and devices are made to ensure equipment and devices operate within specific ranges and to maintain correct flow parameters to ensure gas availability
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Unplanned events in performing minor maintenance on gas processing/storage facilities and equipment are undertaken with the scope of established procedures
	2.7	Parts are repaired or replaced and known solutions to a variety of problems are applied using Essential Knowledge and Associated Skills
	2.8	Maintenance is performed and ongoing checks of quality of the work are undertaken in

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ELEMENT	PERFORMANCE CRITERIA	
		accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	Maintenance results are documented and work undertaken is checked against work schedules for conformance with requirements and anomalies reported in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Work completion records, reports and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for to performing scheduled maintenance and the repair and replacement of parts on liquefied petroleum gas processing or storage facilities and equipment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

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REQUIRED SKILLS AND KNOWLEDGE

KS01-G619A LPG processing or storage facility and equipment maintenance

Evidence shall show an understanding of maintaining and repairing LPG processing or/storage facilities and equipment in accordance with relevant legislation, codes, regulations and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice

T2. Relevant WHS/OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG storage/pressure vessels

- Types, construction, size, valves, labelling
- Testing and inspection procedures

T4. LPG bulk transfer

- Requirements, applications, methods, procedures
- Equipment/tools
  - Types, selection, manufacturers specifications/instructions, testing, set up, adjusting
  - Compressors, pumps
  - Pipes and hoses

T5. LPG processing

- Requirements, applications, methods, procedures
- Mix/blend properties and specifications
- Equipment/tools
  - Types, selection, manufacturers specifications/instructions, testing, set up
  - Analytical judgements for appropriate adjustments to plant and equipment
  - Variations and irregularities identification
- Gas analysis equipment
- Safety
- Gas alarm and communication equipment
- Ignition prevention/control
- Leak testing requirements, types, procedures, required equipment/tools

T6. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T7. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T8. Manual handling

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REQUIRED SKILLS AND KNOWLEDGE

- Characteristics, types, techniques

T9. Accidents and emergency

- Types: fire, gas leak
- Emergency response equipment and procedures
  - breathing apparatus
  - gas detectors/oxygen monitoring devices
  - compliance requirements
- Reporting

T10. Scheduled maintenance

T11.Fault identification

T12.Repair and replacement of components and parts

T13. Shut-down procedures

- Manual
- Emergency

T14. Organisation's policies, quality requirements, specifications, forms and reports for work activities

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is

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recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

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- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Maintaining and repairing LPG processing or/storage facilities and equipment in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment	At least 7	• Pressure vessel • Vapourisers • Earth connections • Relief valves • System(s) isolation • Emergency shut-down valving (e.g. ISC valves) • Manual shut-down valving • Pipe work • Vessel footings • Regulators

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		• Hoses and couplings • Pumps • Compressors
B. Irregularities	At least 3	• Incorrect flow rates • Corrosion • Impact damage • Point deterioration • Leakage • Non-operability of shutdown systems • Equipment out of calibration
C. Parts to be replaced:	At least 6	• Excess flow valves • Relief valves • Pressure regulators/springs • Pump seals/compressor seals • Pressure gauges • Bypass valves • Meters • Solenoids • Valves • Break away couplings • Meter heads • Transfer hoses
D. Types of adjustments	At least 1	• Downstream pressure adjustment • Storage pressure adjustment (vapouriser system only) • Bypass pressure adjustment for pumps
E. Documentation	All	• WHS/OHS, environmental and associated legislative requirement • Work orders • Manufacturer's specifications • Work permits
F. Unplanne	At least one	Deal with an unplanned event by drawing on

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d events	occasion	required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of **8.4)**

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assessment

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

UEGNSG132A	Carry out basic work activities in a utilities industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to carrying out scheduled maintenance and the repair and replacement of parts on gas processing or storage facilities and equipment.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

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RANGE STATEMENT

- Pressure vessels and fittings
- Types of variations or irregularities
- Appropriate parts
- Types of adjustments
- Documents
- Documentation

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG620A Organise the repair of faults in LPG processing or storage facilities and equipment

Modification History

This unit replaces UEGNSG609B Coordinate repair of faults in gas processing/storage facilities and equipment

Unit Descriptor

Unit Descriptor **1)**

1.1) Descriptor

This unit covers organising the repair of faults, which occur during the processing and/or storing of liquefied petroleum gas (LPG) in accordance with relevant legislation, codes, regulations and established procedures.

This unit encompasses identifying the types of faults; liaising with the appropriate persons to authorise and conduct repairs; and providing the relevant documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to work sites where liquefied petroleum gas (LPG) is processed, stored and handled, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

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Prerequisite Unit(s) **4)**

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan and prepare to organise repairs in LPG processing/storage facilities and equipment	1.1	Appropriate persons are consulted to ensure the work is organising effectively with others involved in the worksite against work schedule(s), including drawings, plans and established procedures
	1.2	Relevant requirements and established procedures for the work are communicated to all persons and identified for all work sites
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures, related to organising the repair of faults in gas processing/storage facilities and equipment, are obtained and confirmed for the purposes of the work performed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
	1.8	Relevant persons at worksite are confirmed to be current in related work procedures according to requirements
	1.9	Liaison and communication issues with

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ELEMENT	PERFORMANCE CRITERIA	
		authorised persons, authorities, clients and land owners are resolved and activities organised to carry out work
	1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
	1.11	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2 Organise repair of faults in LPG processing/storage facilities and equipment	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working in confined spaces or aloft, and use of power tools, techniques and practices are safely followed and currency according to requirements confirmed
	2.3	Required Skills and Knowledge to organise repair of faults in gas processing/storage facilities and equipment is applied to ensure completion in an agreed timeframe and to quality/ safety/ environmental standards according to requirements
	2.4	Repair work and the replacement of faulty work equipment is monitored to ensure activities are carried out to standard operating procedures, permit to work requirements, and minimal impact occurs on existing operations and environment
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Unplanned events in organising and repairing of faults in gas processing/storage facilities and

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ELEMENT	PERFORMANCE CRITERIA	
		equipment are undertaken with the scope of established procedures
	2.7	Known solutions to a variety of problems are applied using Required Skills and Knowledge
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	Systems are monitored or activated to ensure they are operating both safely and effectively
	3.2	Accidents and injuries are reported in accordance with established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Repaired and installed equipment is brought back on line in accordance with standard operating procedures
	3.7	Work completion records, reports as installed and modified, drawings and documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for organising the repair of faults in LPG processing/storage facilities and equipment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G620A PLG processing/storage facility and equipment repair

Evidence shall show an understanding of safe working practices for organising the repair of faults in LPG processing/storage facilities and equipment in accordance with relevant legislation, codes, regulations and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice

T2. Relevant WHS/OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG processing/storage facilities

- Requirements, specifications and plant operation
- Variations and irregularities identification
- Safety
- Gas alarm and communication equipment
- Ignition prevention/control
- Leak testing requirements

T4. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T5. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T6. Accidents and emergency

- Types: fire, gas leak
- Emergency response equipment and procedures
- Reporting

T7. Scheduled maintenance requirements

T8. Fault identification

T9. Organising of repair and replacement of components and parts

T10. Shut-down procedures

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REQUIRED SKILLS AND KNOWLEDGE

- Manual
- Emergency

T11. Organisation's policies, quality requirements, specifications, forms and reports for work activities

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

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Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
    - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
    - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
    - Demonstrate an appropriate level of employability skills
    - Conduct work observing the relevant Anti discrimination

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legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Safe working practices for organising the repair of faults in LPG processing/storage facilities and equipment in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment	At least 7	• Gas detectors • Purging gas • Hand tools • LPG hoses • Flare • Valves • Compressor • Vessels • Pump • Road tanker • Control and instrumentation equipment
B. Faults:	At least 7	• Gas leak • Electrical problems • Over filled vessel • Compressor failure • Pump failure • Out of current inspection status • Gauge failure • Hose rupture/leaks • Instruments out of calibration • Non-flow of LPG • Cylinder scales out of

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		calibration • Meter out of calibration
C. Documentation:	All	• Item maintenance record • Work permit • Job card documentation to inform relevant authorities, company persons or manufacturer • WHS/OHS, environmental and associated requirement documentation
D. Unplanned event	At least one occasion	Deal with an unplanned event by drawing on required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either

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an actual workplace or under a simulated work environment.

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment

8.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work activities in a gas industry work environment
UEGNSG141A	Apply Workplace Health and Safety regulations codes and practices in the gas industry
UEGNSG140A	Apply environmental policies and procedures in the utilities industry

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UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to organising the repair of faults in gas processing or storage facilities and equipment.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons
- LPG facility plant and equipment
- Types of faults
- Permit to Work
- Documentation (3)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

LPG.

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UEGNSG621A Control bulk storage of LPG

Modification History

This unit replaces UEGNSG610B Control storage of LPG in terminal

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers controlling the bulk storage of LPG in terminals and depots installation in accordance with relevant legislation, codes, regulations and established procedures.

This encompasses following procedures to correctly and safely transfer LPG; monitor and store LPG at facilities; and emergency response using appropriate materials, tools and equipment.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to LPG bulk storage terminals & depots, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas

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Prerequisite Unit(s) **4)**

	industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 ‘Literacy and Numeracy’

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare for the storage of LPG	1.1	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved on the work site and the availability of equipment is determined
	1.2	Equipment is checked in accordance with standard operating procedures and relevant requirements
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to requirements and established procedures for control storage of LPG in terminal are obtained and confirmed for the purposes of the work performed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and/or established procedures
	1.7	Appropriate valves are operated and other resources including appropriately persons, equipment, tools and personal protective equipment required for the job are identified, scheduled and obtained and confirmed in working order
	1.8	Relevant persons at worksite are confirmed to be current in related work procedures according to requirements
	1.9	Site is prepared according to the work schedule to minimise risk and damage to property, commerce and individuals in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2 Control Storage of LPG	2.1	LPG is stored in a safe and efficient manner in accordance with standard operating procedures and the condition of LPG is controlled within specifications and in accordance with legislative requirements
	2.2	Lifting, climbing, working in confined spaces or aloft, and use of tools, techniques and practices are safely followed and currency maintained according to requirements confirmed
	2.3	Required Skills and Knowledge for the control storage of LPG in terminal is applied to ensure completion in an agreed timeframe and to quality/ safety/ environmental standards according to requirements
	2.4	Controlling the storage of LPG in terminal is carried out in accordance with the work schedule and to established procedures
	2.5	Emergency response procedures and potential hazards, safety risks and control measures are monitored and preventative action taken and referred to appropriate authorities in accordance with requirements and established procedures
	2.6	Abnormalities are reported and unplanned events incurred while controlling the storage of LPG in a terminal are undertaken within the scope of established procedures and responsibility
	2.7	Fault-finding and troubleshooting techniques are applied to operational systems and equipment in order to identify any repairs or maintenance which may need to be undertaken
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
3 Complete work and relevant documentation	3.1	Work undertaken is checked against works schedule for conformance with requirements, anomalies are reported in accordance with established procedures
	3.2	Accidents and injuries are reported in accordance with requirements and established procedures where applicable
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate are cleaned, checked and returned to storage in accordance with established procedures
	3.5	Relevant work permit(s) are signed off and equipment is returned to service in accordance with requirements
	3.6	Work completion records, reports as installed and modified, drawings and documentation and information are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for the controlling the bulk storage of LPG in a terminal or depot.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G621A Bulk gaseous fuel terminal storage

Evidence shall show an understanding of controlling the bulk storage of LPG in terminals and depots in accordance with relevant legislation, codes, regulations and

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REQUIRED SKILLS AND KNOWLEDGE

established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice

T2. Relevant WHS/OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. LPG storage/pressure vessels

- Requirements
- Types, construction, size, valves, labelling, Material Safety Data Sheets (MSDS)
- Testing and inspection procedures

T4. LPG bulk transfer

- Requirements, applications, methods, procedures
- Equipment/tools
  - Types, selection, manufacturers specifications/instructions, testing, set up, adjusting
  - Compressors, pumps
  - Pipes and hoses

T5. LPG Storage Facility

- Operation
- Manufacturer's specifications and standard adjustments to LP Gas equipment
- Identifying variations and irregularities
- Making analytical judgments for appropriate adjustments to plant and equipment
- Monitoring, testing, inspection and reporting requirements
- Safety
- Gas alarm and communication equipment
- Ignition prevention/control
- Leak testing requirements, types, procedures, required equipment/tools

T6. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T7. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T8. Manual handling

- Characteristics, types, techniques

T9. Accidents and emergency

- Types: fire, gas leak
- Emergency response equipment and procedures

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REQUIRED SKILLS AND KNOWLEDGE

- breathing apparatus
- gas detectors/oxygen monitoring devices
- compliance requirements
- Emergency shutdown, fire protection and security requirements
- Reporting

T10. Organisation's policies, quality requirements, specifications, forms and reports for work activities

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical

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equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
    - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
    - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

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- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Controlling of the bulk storage of LPG in terminals and depots in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including;

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment	At least 3	• Pumps and compressors • Valves • Vessels • Control and monitoring equipment • Mixing equipment • Sampling equipment
B. Procedures	All	• Site operating procedures
C. Monitoring of storage facilities:	At least 5	• Pressure • Temperature • Levels • Corrosion • Asset integrity • Gas leaks • Stock levels • Security • Fire protection systems • Shutdown systems

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D. Emergency Response	All	• Gas leaks and fire • Equipment failure • Hazards and incidents
E. Documentation	All	• Maintenance records • Stock control records • Inspection checklists/ reports • WHS/OHS, environmental and associated legislative requirements
F. Unplanned event	At least one occasion	Deal with an unplanned event by drawing on required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either

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an actual workplace or under a simulated work environment.

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note:
Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG132A	Carry out work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

10) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to controlling bulk storage of LPG in a terminal or depot.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons
- LPG storage and transfer plant and equipment
- Legislative requirements
- Operation and monitoring of storage facilities
- Security/ Emergency / Fire protection systems
- Site operating procedures
- Documentation

Unit Sector(s)

Gas supply industry.

Competency Field

Competency Field **11)**

LPG

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UEGNSG622A Assess the operational capability of gas safety equipment on a delivery vehicle

Modification History

This unit replaces UEGNSG613A Assess the operational capability of gas safety equipment on delivery vehicle

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the assessment of the gas and safety equipment on a delivery vehicle for the distribution of gaseous fuel in accordance with relevant legislation, codes, regulations and established procedures.

It encompasses assessing the equipment, identifying faults, using standard operating procedures, liaising with appropriate persons, conducting inspections and tests. Delivery vehicles include heavy rigid or heavy combination gaseous fuel bulk tankers.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to work sites where the bulk distribution of liquefied petroleum gas (LPG) occurs using delivery vehicles, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an entry level AQF 3 competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Prerequisite Unit(s) **4)**

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the*

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Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to assess gas and safety equipment on delivery vehicles	1.1	Work instructions are received and confirmed according to standard operating procedures
	1.2	Relevant requirements and established procedures to be followed for the work to be performed are discussed with all persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.4	Suggestions to assist with the assessing the operational capability of gas safety equipment on delivery vehicles are made to others involved in the work
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept clear according to established procedures
	1.6	Resources including equipment and tools are visually inspected and personal protective equipment required for the job are obtained and in working order according to established procedures
	1.7	All components of the delivery vehicle and associated equipment are checked and the relevant responsibilities associated with First Aid and other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures.

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ELEMENT	PERFORMANCE CRITERIA	
	1.8	Inspection procedures are carried out according to manufacturer's specifications and the work schedule for a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Assess and identify and faults of gas and safety equipment on delivery vehicles	2.1	WHS/OHS policies and procedures and safe work practices are followed to eliminate or minimise incidents and hazards
	2.2	Lifting, climbing, working aloft, and use of tools, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to eliminate the prospects of incidents
	2.3	Operational knowledge for the assessing of the operational capability of gas safety equipment on delivery vehicles is confirmed to ensure completion in an agreed timeframe and to quality/ safety/ environmental standards according to requirements and established procedures
	2.4	Assessing the operational capability of gas safety equipment on delivery vehicles is carried out in accordance with requirements and given instructions and established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.7	Problems associated with the assessing of the operational capability of gas safety equipment on delivery vehicles are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met

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ELEMENT	PERFORMANCE CRITERIA	
	2.8	Records are maintained and ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete work and relevant documentation	3.1	Work undertaken is checked against work schedule and anomalies reported to authorised persons in accordance with established procedures
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.3	Work site is rehabilitated, cleaned up and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
	3.5	Results of inspection and testing are accurately recorded and Appropriate persons are notified of work completion according to established procedures
	3.6	Clear reference is made to any items which may affect future operational outcomes and work completion records, report forms and data sheets are completed accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for assessing the operational capability of gas safety equipment on delivery vehicles in accordance with relevant legislation, codes, regulations and established procedures. .

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REQUIRED SKILLS AND KNOWLEDGE

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G622A Operational capability of delivery vehicles

Evidence shall show an understanding of safe working practices for assessing the operational capability of gas safety equipment on delivery vehicles in accordance with relevant legislation, codes, regulations and established procedures to an extent indicated by the following aspects:

T1. Relevant Australian Standards, guidelines and codes of practice

T2. Relevant WHS/OHS policies and procedures.

- Safety signs including workplace hazards and warnings

T3. Gaseous fuel bulk tankers

- Requirements
- Types, construction, size, valves, labelling, Material Safety Data Sheets (MSDS)
- Testing and inspection procedures

T4. Tanker gaseous fuel transfer systems

- Requirements, applications, methods, procedures
- Equipment/tools
  - Types, selection, manufacturers specifications/instructions, testing, set up, adjusting
  - Compressors, pumps
  - Pipes and hoses
- Safety systems and equipment
- Monitoring, testing, inspection and reporting procedures and requirements
- Manufacturer's specifications and standard adjustments to equipment
- Identifying variations and irregularities
- Making analytical judgments for appropriate adjustments to equipment
- Gas alarm and communication equipment
- Ignition prevention/control
- Leak testing requirements, types, procedures, required equipment/tools

T5. Personal Protection Equipment

- Types, application, checking, maintenance and storage

T6. Hazard identification, risk assessment and control

- Work Permits, JHA’s, JSA’s, JSEA’s, SWM’s, etc.
- Use of spill kits and PPE

T7. Manual handling

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REQUIRED SKILLS AND KNOWLEDGE

- Characteristics, types, techniques

T8. Accidents and emergency

- Types: fire, gas leak
- Emergency response equipment and procedures
  - breathing apparatus
  - gas detectors/oxygen monitoring devices
  - compliance requirements
- Emergency shutdown, fire protection and security requirements
- Reporting

T9. Organisation's policies, quality requirements, specifications, forms and reports for work activities

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place,

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access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

- Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:
    - A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
    - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
    - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that

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the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Safe working practices for assessing the operational capability of gas safety equipment on delivery vehicles in accordance with relevant legislation, codes, regulations and established procedures as described in 9.) Range Statement and including;

Range of tools/equipment/procedures/workplace		
Group	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment	At least 6	• Tanks, valves and fittings • Seals and gaskets • Pump and drive shaft • Meters • Emergency equipment • Pipes • Pneumatic/electronic control equipment • Gauges • Hoses and connections including hose protection systems • Earthing straps • Hydraulic equipment
B. Faults	At least 4	• Water leaks • Oil leaks • Damaged hoses • Gas/air leaks • Valves not operating

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		• Electric control cable damage
C. Work Practices	All	• Work utilising relevant procedures • Maintain a safe and clean workplace • Work safely with hazardous materials and equipment • Apply safe manual handling techniques • Respond to emergency situations • Communicate effectively in the workplace • Apply basic planning skills • Identify and report faults • Operate equipment within its limitations
D. Unplanned event	At least one occasion	Deal with an unplanned event by drawing on required skills and knowledge to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment.

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility asset

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

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UEGNSG133A	Comply with environmental policies and procedures in a utilities industry work environment
UEGNSG134A	Establish a utilities infrastructure work site

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to assessing the operational capability of gas safety equipment on delivery vehicles. Delivery vehicles include heavy rigid or heavy combination gaseous fuel bulk tankers.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Gas safety equipment
- Faults
- Standard operating procedures
- Appropriate persons
- Inspection and testing
- Delivery vehicles
- Requirements
- Established procedures

Unit Sector(s)

Not applicable.

Competency Field

Competency Field 11)

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Competency Field 11)

LPG

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UEGNSG705A Disconnect and reconnect small capacity gas meters

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers disconnecting, replacing and reconnecting small capacity (union connected) gas meters and associated components by a designated gas industry person following company standard operating procedures in accordance with relevant legislative, standard and code requirements.

It encompasses the use of hand tools and equipment to test the customer gas piping system and associated meter connections filters, regulators and components for soundness following occupational health and safety requirements and completing records and appropriate documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where small capacity gas meters are installed, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 2 entry level competency for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are generally not subject to licence regulations other than those directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti- discrimination and training.

However, in some States/Territories they may be subject to Gas Fitting or G Class Gas license regulations.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A Apply Workplace Health and Safety

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Prerequisite Unit(s) **4)**

	regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to disconnect, replace and reconnect gas meter.	1.1	Instructions for the work to be performed are received and confirmed to ensure clear understanding
	1.2	Relevant requirements and established procedures to be followed for the work are provided and discussed with relevant persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed to ensure they are understood
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit/authorisation is received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, tools, resources, materials and personal protective equipment needed to undertake to gas meter work are identified, obtained and checked for correct operation and safety.
	1.7	Relevant responsibilities associated with related work safety and emergency procedures at the worksite are confirmed in accordance with requirements and established procedures
	1.8	Appropriate persons are consulted to ensure the appliance relight is coordinated effectively with others involved
	1.9	Client issues are referred to appropriate persons in accordance with industry standards and established procedures
	1.10	Work site is preparation, safety plan and work schedule are confirmed in accordance with established procedures

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ELEMENT	PERFORMANCE CRITERIA	
2 Disconnect, replace and reconnect gas meter	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and devices are selected and used correctly and safely.
	2.3	Operational knowledge for utilising correct and safe use of basic equipment and tools to perform gas meter work is confirmed
	2.4	Gas meter work is undertaken s using appropriate stray current testing and protection following company procedures
	2.5	Customer piping system and associated components are tested for soundness
	2.6	Gas meters, filters and regulators are stored and transported as per company and manufacturers requirements
	2.7	Work is carried out efficiently, to the required quality standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.8	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.9	Further instructions are sought from appropriate persons for unplanned events or conditions occurring
	2.10	Ongoing checks of quality of the work are undertaken in accordance with instructions and requirements
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Final checks including visual observation is performed to ensure the quality of the work complies with established procedures and to

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ELEMENT	PERFORMANCE CRITERIA	
		appliance manufacturers instructions
	3.2	Appropriate persons are notified of completion of the work
	3.3	Equipment, tools and any surplus resources and materials are cleaned, checked and stored securely or disposed of in accordance with established procedures
	3.4	Work area is tidied and made safe in accordance with given instructions and established procedures
	3.5	Work completion records and documentation are updated in accordance with instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for disconnecting, replacing and reconnecting small capacity gas meters and associated components

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

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REQUIRED SKILLS AND KNOWLEDGE

KS01-G705A Gas meter disconnection, reconnection and replacement

Evidence shall show an understanding of disconnecting, replacing and reconnecting small capacity gas meters and associated components in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Safety requirements

- hazards, risk assessment and control measures
- Identify environmental and safety hazards, assess risks and implement control measures which includes the use of stray current testing and protection, bonding clamps and PPE
- Safety requirements for entering domestic and commercial customer sites

T3. Customer liaison

T4. Procedures for purging service lines, gas meter and associated components to outlet of meter set.

T5. Procedures for gas meter disconnection, reconnection, replacement

T6. Soundness testing procedures

T7. Reading and recording gas meter details

T8. Gas meter installation requirements as to AS 5601 and relevant company requirements

T9. Gas meter storage & transporting requirements

T10. Relevant documentation

- signs, symbols terminology and legends as used in industry procedures and documents
- workplace forms and reports

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all

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prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Disconnecting, replacing and reconnecting small capacity gas meters and associated components as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**

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A. Procedures	All	• Work utilising relevant OHS/WHS legislation, regulations, codes of practice, policies and procedures • Communicate effectively with appropriate personnel and customers • Accurately complete records and documentation • Follow work schedules including meeting appointments • Effectively use tools and equipment to disconnect reconnect, replacement gas meter • Use of WADS/disconnection discs and valve locks • Use of Soundness testing equipment Drop test/ bubble leak detector, etc. • Advise stakeholders of potentially dangerous or illegal situations
B. Requirements	All	• Stray current testing and protection including Bonding clamps and PPE • Storage and transport requirements for gas meters and associated equipment
C. Unplanned events	At least on one occasion	Respond to an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific 8.3)

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resources for assessment

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in conducting appliance relights.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Knowledge and Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of

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learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Unit shall be demonstrated in relation to disconnecting, replacing and reconnecting small capacity gas meters and associated components by a designated gas industry person following company standard operating procedures in accordance with relevant legislative, standard and code requirements.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons Hand tools to disconnect and reconnect meters
- Includes footprints, spanners, neon tester, bonding leads, soap tester, safety matches
- Safe working procedures
- Legislative requirements
- Personal Protective Equipment

Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Support services

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UEGNSG706A Test New Residential and Small Commercial Gas Installations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers conformance testing of new residential and small commercial gas installations and associated components by a designated gas industry person following company standard operating procedures in accordance with relevant legislative, standard and code requirements.

It encompasses the use of hand tools and testing equipment to pressure test the customer piping system and associated gas meter connections filters, regulators and components and inspecting the installation to meet AS5601 and State/Territory regulatory requirements and completing required records and appropriate documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any new residential and small commercial gas installation, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under

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an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are subject to licence regulation directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions

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License to practice **3)**

relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the

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Employability Skills **5)**

qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to test new gas installation	1.1	Work instructions are received and confirmed to ensure clear understanding
	1.2	Relevant requirements and established procedures to be followed for the work are discussed with relevant persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed to ensure they are understood
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit/authorisation are received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, tools, resources, materials and personal protective equipment needed to

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ELEMENT	PERFORMANCE CRITERIA	
		conformance testing are identified, obtained and checked for correct operation and safety
	1.7	Relevant responsibilities associated with related work safety and emergency procedures at the worksite are confirmed in accordance with requirements and established procedures
	1.8	Appropriate persons are consulted to ensure the appliance relight is coordinated effectively with others involved
	1.9	Client issues are referred to appropriate persons in accordance with industry standards and established procedures
	1.10	Work site is preparation, safety plan and work schedule are confirmed in accordance with established procedures
2 Test new gas installation	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and devices are selected and used correctly and safely.
	2.3	Operational knowledge for utilising correct and safe use of basic equipment and tools to perform conformance test is confirmed
	2.4	Conformance test of the new gas installation is undertaken s using appropriate pressure testing equipment and stray current testing and protection equipment following company procedures and State/Territory regulatory requirements
	2.5	Customer piping system and associated components including appliances are tested for conformance to AS5601 requirements

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ELEMENT	PERFORMANCE CRITERIA	
	2.6	Installation is left connected or disconnected depending on results of conformance test.
	2.7	Work is carried out efficiently, to the required quality standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.8	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.9	Further instructions are sought from appropriate persons for unplanned events or conditions occurring
	2.10	Ongoing checks of quality of the work are undertaken in accordance with instructions and requirements
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Final checks including visual observation is performed to ensure the quality of the work complies with established
	3.3	Appropriate persons are notified of completion of the work
	3.4	Equipment, tools and any surplus resources and materials are cleaned, checked and stored securely or disposed of in accordance with established procedures
	3.5	Work area is tidied and made safe in accordance with given instructions and established procedures
	3.6	Work completion records and documentation are updated in accordance with instructions and established procedures as required in each state

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of conformance testing of new residential and & small commercial new gas installations and associated components

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G706 Testing of Residential & Small Commercial New Gas Installation

Evidence shall show an understanding of conformance testing of new residential and & small commercial new gas installations and associated components in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Safety requirements

- hazards, risk assessment and control measures
- environmental and safety hazards, assess risks and implement control measures which includes the use of stray current testing and protection, bonding clamps and PPE Safety requirements for entering domestic and commercial customer sites

T3. Customer liaison skills

T4. Procedures for purging service lines, gas meter and associated components to outlet of meter set.

T5. Procedures for testing of residential & small commercial new gas installation to AS 5601.company and regulatory requirements

T6. Reading and recording gas meter details

T7. Appliance installation requirements as to AS 5601 and relevant company and regulatory requirements

T8. Documentation for testing of residential & small commercial new gas installations

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Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this

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Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Conformance testing of new residential and & small commercial new gas installations and associated components as described in 9.) Range Statement and including:

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Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Requirements	All	• Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures • Communicate effectively with appropriate personnel and customers • Accurately complete records and documentation • Follow work schedules including meeting appointments • Effectively use tools and equipment to test residential & small commercial new gas installation • Use of WADS/disconnection discs and valve locks • Use of pressure testing equipment Drop test/ bubble leak detector etc • Advise stakeholders of potentially dangerous or nonconforming installations
B. Procedures	All	• Stray current testing and protection including Bonding clamps and PPE • Storage and transport requirements for gas meters and associated equipment

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		• Documentation for testing of residential & small commercial new gas installation
C. Unplanned events	On at least one occasion	Deal with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in conducting appliance relights.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

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Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Knowledge and Skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

Nil

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Unit shall be demonstrated in relation to conformance testing of new residential and & small commercial new gas installations and associated components.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons
- Hand tools to disconnect and reconnect meters test residential & small commercial new gas installations
- Includes footprints, spanners, neon tester, bonding leads, soap tester, Pressure testers
- Safe working procedures
- Legislative requirements
- Personal Protective Equipment

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Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Support services

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UEGNSG708A Pressure Test Residential and Small Commercial Gas Installations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit covers pressure testing residential and small commercial gas installations and associated components by a designated gas industry person following company standard operating procedures in accordance with AS5601 and State/Territory regulatory requirements.

This encompasses the use of hand tools and testing equipment to pressure test the customer piping system and associated fittings and components and completing required records and appropriate documentation.

Application of the Unit

Application of the Unit

2)

This competency standard shall apply to any basic and safe residential and small commercial work site where Gas Industry operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 2 entry level competency for new entrants in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are generally subject to State/Territory Gas Fitting licence regulations for gas connections and installations.

However, some regulators require that before a fuel gas network starts to supply fuel gas to a gas system, the person connecting fuel gas to the gas system must ensure the gas system is pressure tested in accordance with the current version AS/NZS 5601 Gas installations or equivalent and there is no significant leakage of fuel gas from the gas system. This unit provides the required knowledge and skills to enable the person connecting fuel gas to the gas system to carry out this pressure test.

They are also subject to those regulations directly related to Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

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Prerequisite Unit(s) **4)**

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading	3	Writing	3	Numeracy	3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to pressure test gas installation	1.1 Instructions for the work to be performed are received and confirmed to ensure clear understanding
	1.2 Relevant requirements and established procedures to be followed for the work are provided and discussed with relevant persons to establish and confirm the work schedule
	1.3 WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed to ensure they are understood.
	1.4 Equipment, tools and personal protective equipment needed for pressure testing are identified, obtained and checked for correct operation and safety.
	1.5 Resources and materials needed to carry out the pressure test are confirmed and obtained in accordance with established procedures.
	1.6 Client issues are referred to appropriate persons in accordance with industry standards and established procedures
	1.7 Work site is preparation, safety plan and work schedule are confirmed in accordance with established procedures
2 Carry out pressure test of gas installation	2.1 WHS/OHS policies and procedures and safe work practices for the pressure test are followed to eliminate or minimise incidents and hazards
	2.2 Schedule of work is followed to ensure work is completed in an agreed time, to a quality standard and with a minimum of waste
	2.3 Operational knowledge for utilising correct and safe use of basic equipment and tools to perform conformance test is confirmed.
	2.4 Pressure test of the gas installation is undertaken using appropriate pressure testing equipment following company procedures and

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ELEMENT	PERFORMANCE CRITERIA	
		regulatory requirements
	2.5	Customer piping system and associated components including appliances are pressure tested for conformance to AS 5601 requirements
	2.6	Installation is left connected or disconnected, depending on results of pressure test.
	2.7	Ongoing checks of quality of the work are undertaken in accordance with instructions and requirements
3 Complete pressure test and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Final checks including visual observation is performed to ensure the quality of the work complies with established procedures
	3.3	Appropriate persons are notified of completion of the work
	3.4	Equipment and tools are, where appropriate, cleaned, checked and returned to storage or disposed of in accordance with established procedures
	3.5	Work area is tidied and made safe and sustainable energy practices are followed
	3.6	Appropriate records and documentation are updated in accordance with instructions and established procedures as required by the regulator.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

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REQUIRED SKILLS AND KNOWLEDGE

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G708A Gas Installation Pressure Testing

Evidence shall show an understanding of pressure testing residential and small commercial gas installations in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Safety requirements

- hazards, risk assessment and control measures
- identify environmental and safety hazards, assess risks and implement control measures which includes the use of stray current testing and protection, bonding clamps and PPE
- safety requirements for entering domestic and commercial customer sites

T3. Customer liaison

T4. Procedures for pressure testing of gas installation to AS 5601

- Australia Standard requirements
- regulatory requirements
- enterprise guidelines and requirements
- tools and equipment

T5. Documentation and reporting pressure testing of gas installations

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that

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can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

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- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Pressure testing residential and small commercial gas installations as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Procedures	All	• Work utilising relevant OHS/WHS legislation, regulations, codes of practice, policies and procedures • Communicate effectively

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		with appropriate personnel and customers • Accurately complete records and documentation • Follow work schedules including meeting appointments • Effectively use tools and equipment to test residential & small commercial gas installation • Use of pressure testing equipment Drop test/ bubble leak detector etc. • Advise stakeholders of potentially dangerous or nonconforming installations
B. Requirements	All	• PPE • Documentation for testing of residential & small commercial gas installation
C. Unplanned events	At least on one occasion	Respond to an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.

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- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in conducting appliance relights.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required Knowledge and Skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

Nil

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit must be demonstrated in relation to pressure testing residential and small commercial gas installations and associated components by a designated gas industry person following company standard operating procedures in accordance with AS5601 and State/Territory regulatory requirements.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons
- Hand tools to test residential & small commercial gas installations including spanners, screw drivers, soap tester, pressure testers.
- Safe working procedures
- Legislative requirements
- Personal Protective Equipment

Unit Sector(s)

Gas Industry

11. Competency Field

Support services

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UEGNSG711A Process meter reading information using appropriate technology

Modification History

This unit replaced UEGNSG701A Process meter reading information using appropriate technology

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the processing of meter reading information by using the appropriate technology for recording of information in accordance with relevant legislation, standards, codes and established procedures. It may include gas, water and electricity supply industries.

It encompasses the use of relevant tools and equipment including hand held or wireless/remote recording equipment, computers/computer software, CD-ROMS, hard and floppy disks, drives and back-up systems.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any and safe work site where Gas, Water or Electricity Industry operations occur, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 2 entry level competency for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Select and use technology to record information	1.1	Work instructions are received and confirmed
	1.2	Relevant requirements and established procedures to be followed for the work are discussed with relevant persons to establish and

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ELEMENT	PERFORMANCE CRITERIA	
		confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and understood
	1.4	Suggestions to assist with processing meter reading work are made to others involved in the work
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.6	Scope of responsibility under the relevant work permit/authorisation are received and confirmed with relevant persons according to requirements and established procedures
	1.7	Resources including technical equipment and tools required for the job are obtained and checked for correct operation and safety
	1.8	Relevant responsibilities associated with related work safety and emergency procedures at the worksite are confirmed in accordance with requirements and established procedures
	1.9	Client issues are referred to appropriate persons in accordance with industry standards and established procedures
	1.10	Work site preparation, safety plan and work schedule are confirmed in accordance with established procedures
2 Process information	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and devices are selected and used correctly and safely.
	2.3	Process meter reading work is carried out efficiently, to the required quality standard

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ELEMENT	PERFORMANCE CRITERIA	
		without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.4	Data is stored, relevant technology and updated and retrieved in accordance with given instructions and established procedures using relevant technology
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.7	Relevant sources are referred to for problems associated with processing meter readings and known solutions and skills related to routine procedures to ensure work instructions and established procedures are met Note: sources include manuals, training books, internet
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Maintain technology	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.3	Work site is tidied and made safe in accordance with given instructions and established procedures
	3.4	Minor maintenance of meter reading technology is applied in accordance with requirements to ensure correct operation
	3.5	Technology consumables are identified and any surplus resources and materials are checked,

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ELEMENT	PERFORMANCE CRITERIA	
		cleaned and securely stored.
	3.6	Appropriate persons are notified of work completion according to established procedures
	3.7	Work completion records, faults to equipment are identified and reported accurately in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas, water or electricity industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G0711A Meter reading information processing

Evidence shall show an understanding of processing meter reading information processing using appropriate technology in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Safety requirements

- hazards, risk assessment and control measures

T3. Relevant documentation

- signs, symbols terminology and legends as used in industry procedures and documents
- workplace forms and reports

T4. Meter reading information processing requirements and procedures

- expected outcomes of a work activity
- work instructions

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REQUIRED SKILLS AND KNOWLEDGE

- organisation's policies, quality requirements and specifications

T5. Tools and equipment

- hand held or wireless/remote recording equipment,
- computers/computer software,
- CD-ROMS, hard and floppy disks,
- drives and back up systems

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries

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risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills

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- Conduct work observing the relevant Antidiscrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Process meter reading information using appropriate technology as described as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Equipment	All	• Hand held recording equipment • Computers/computer software • CD-ROMS • Hard and floppy disks, drives and back up systems
B. Requirements	All	• Interpret maps, diagrams and workplace documents • Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures • Maintain a safe and clean workplace • Work safely with hazardous materials and equipment • Apply safe manual handling techniques • Communicate effectively in the workplace • Apply basic planning skills

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C. Unplanned event	At least one occasion	Respond to an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in processing meter reading information using appropriate technology.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working

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practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the l required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B Carry out work activities in a utilities industry work environment

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to processing meter reading information using appropriate technology.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Services
- Appropriate persons
- Tools and equipment
- Legislative requirements

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Unit Sector(s)

Utilities Industry

Competency Field

Competency Field **11)**

Support services

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UEGNSG712A Read and record meter readings

Modification History

This unit replaced UEGNSG702A Read and record meter readings.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the planning, sequencing, using and recording utilities industries meter reading data. This includes efficient planning and scheduling of routes that includes availability of competent meter readers, vehicle and appropriate meter reading equipment.

It encompasses scheduled requirements; sequencing a route for an individual; account information aspects; records relating to previous; methods used to record meter readings; damage or faults to meters; new and changed information.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where Gas, Water or Electricity Industry operations occur, subject to all Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 2 entry level competency for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy **4.2)**

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skills	Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy' Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills	**5)** This unit contains Employability Skills The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and record meter reading routine/sequence	1.1 Work instructions are received and confirmed and routes are mapped to correspond to schedule requirements
	1.2 Records relating to previous routes are confirmed and other established procedures are followed for the work to be performed against the work schedule

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ELEMENT	PERFORMANCE CRITERIA	
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures to be followed for the work to be performed are received and confirmed
	1.4	Suggestions to assist with the reading and recording of meters are made to others involved in the work
	1.5	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.6	Scope of responsibility under the relevant work permit/authorisation are received and confirmed with relevant persons according to requirements and established procedures
	1.7	Resources including equipment, tools and route sequences are obtained and are checked for working correct operation and safety
	1.8	Relevant responsibilities associated related work safety and emergency procedures at the worksite are confirmed in accordance with requirements and established procedures
	1.9	Client issues are referred to appropriate persons in accordance with industry and community standards and established procedures
	1.10	Records are maintained according to given instructions and the work schedule for a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
2 Carry out meter reading process	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed
	2.2	Appropriate materials, tools, equipment and devices are selected and used correctly and safely.

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ELEMENT	PERFORMANCE CRITERIA	
	2.3	Meter reading work is carried out efficiently, to the required quality standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles
	2.4	Reading and recording of meter readings is carried out in accordance with given instructions and established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.6	Non-routine events are referred to the immediate authorised persons for directions according to established procedures
	2.7	Problems associated with establishing the work site are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
	2.8	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Complete the reading and recording of meter readings process	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Accidents and incidents are actioned and reported to authorised persons in accordance with established procedures
	3.3	Work site is tidied and made safe in accordance with given instructions and established procedures
	3.4	Tools, equipment and any surplus resources and materials are, cleaned, checked and stored securely

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ELEMENT	PERFORMANCE CRITERIA	
	3.5	Appropriate persons are notified of work completion according to established procedures
	3.6	Work completion records, report forms and data sheets are completed accurately, with unusually high or low meter readings noted and new or changed information updated in accordance with given instructions and established procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas, water or electricity industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit

KS01-G0712A Meter reading and recording

Evidence shall show an understanding of meter reading and recording using appropriate technology in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Safety requirements

- hazards, risk assessment and control measures

T3. Relevant documentation

- signs, symbols terminology and legends as used in industry procedures and documents
- workplace forms and reports

T4. Maps/directories

- reading maps and directories
- planning and determining routes

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REQUIRED SKILLS AND KNOWLEDGE

- locating meters on maps and directories
- documenting any hazards identified on the route.

T5. Communication for reading utilities meters

- orally and written format for reporting meter reading
- liaising with relevant authorities
- communicating with colleagues

T6. Meter reading

- types of meters used for utilities industries meters
- record reading using hand held electronic recording device
- accurately record meter reading

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place,

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access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range

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- Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Read and record meter readings using appropriate technology as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Methods used to record meter readings	All	• Meter reading cards • Meter reading sheets • Electronic reading devices such as Portable Data Entry Terminal (PDET)
B. Damage or faults to meters:	At least 2	• Unreadable meters • Incorrect meter locations • Suspected tampering with the meter • Suspected illegal connections
C. New or changed information:	At least 3	• Special customer requirements • Additions of new meters • Deletion of meter when necessary • Changes to meter numbers

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		• Changes to property information • Changes in location of meter
D. Requirements	All	• Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures • Maintain a safe and clean workplace • Apply safe manual handling techniques • Communicate effectively in the workplace • Read and interpret diagrams and drawings • Apply basic planning skills
E. Unplanned Event	At least one occasion	Respond to an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.

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- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in reading and recording meter readings.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B Carry out work activities in a utilities industry work environment

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to the reading and recording of meter readings.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Resource requirements
- Schedule requirements
- Sequencing a route
- Aspects to consider
- Records Methods
- Damage or faults
- New or changed information

Unit Sector(s)

Utilities Industry

Competency Field

Competency Field **11)**

Support services

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UEGNSG713A Investigate billing exceptions-conditions

Modification History

This unit replaced UEGNSG703B Investigate billing exceptions-conditions

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the investigating billing exceptions and the implementing solutions in a utilities industry environment.

This encompasses considering standard exceptions and conditions; solving relevant problems; investigating why billing exceptions occur; liaising with customers; and developing solutions to relevant problems.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where Gas, Water or Electricity Industry operations occur, subject to all Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 entry level competency for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy **4.2)**

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skills	Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy' Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills	**5)** This unit contains Employability Skills The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan the investigation of billing exceptions/conditions	1.1	Account exceptions and conditions are correctly identified and comprehensively researched in a timely manner against work schedule(s) and established procedures and confirmed if necessary by site inspection
	1.2	Relevant requirements and established procedures for the work are communicated to all

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ELEMENT	PERFORMANCE CRITERIA	
		relevant persons
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to investigating billing exceptions/conditions are obtained and confirmed for the purposes of the work performed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule
	1.6	Relevant work permits/authorisations are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for investigating billing exceptions/conditions are identified, scheduled and obtained and checked for operation and safety
	1.8	Liaison and communication with authorised persons, authorities, clients and land-owners is completed so that work can be carried out where necessary
	1.9	Work site preparation, safety plan and work schedule are confirmed in accordance with established procedures
	1.10	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2 Carry out investigation of billing	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed

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ELEMENT	PERFORMANCE CRITERIA	
exceptions/conditions		
	2.2	Appropriate materials, tools, equipment and devices are selected and used correctly and safely.
	2.3	Analysis of information to identify key issues is undertaken as required and information is evaluated for relevance and validity to the requirements
	2.4	Dealings with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.5	Investigation of billing exceptions/conditions is carried out efficiently to the required quality standard to ensure completion in an agreed timeframe and to quality standards without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.6	Investigating billing exceptions/conditions is carried out in accordance with the work schedule and established procedures
	2.7	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.8	Unplanned events in the carrying out of the investigation of billing exceptions/conditions are undertaken within the scope of established procedures
	2.9	Known solutions to a variety of problems are applied using acquired Essential Knowledge and Associated Skills
	2.10	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures

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ELEMENT	PERFORMANCE CRITERIA	
3 Complete the investigation of billing exceptions/conditions	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Solutions are developed based on consideration of relevant information and options and proposed solutions are communicated and implemented as required against work schedule and anomalies reported in accordance with established procedures
	3.3	Accidents and injuries are actioned and reported to authorize persons in accordance with requirements and established procedures
	3.4	Solution is implemented in accordance with standard operating procedures ensuring that action is correctly documented, the transaction is accurately processed and the customer is advised
	3.5	Work completion records, reports and documentation are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas, water or electricity industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G0713A Billing investigations

Evidence shall show an understanding of investigating billing exceptions in

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REQUIRED SKILLS AND KNOWLEDGE

accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Administrative working environments in the utilities Industry

- manage work to achieve goals and results
- use available routine information appropriate to work responsibility
- make decisions within responsibility and authority
- understand and adhere to standard operating procedures in a gas environment
- ability to liaise with a broad range of clients
- general business and organisational skills
- ability to write concise and clear business letters
- telephone techniques and verbal communication
- basic bookkeeping.

T2. Communication, negotiation and problem solving techniques

- monitor/introduce practices designed to improve performance
- use effective consultative processes
- communicate routine and non-routine information clearly to senior managers, peers and subordinates
- ability to liaise effectively with a range of clients
- clear and accurate observation and analytical skills
- negotiation and dispute resolution and problem solving.

T3. Appropriate accounting programs

- select and use available and appropriate technology including accounting systems.

T4. Utilities industries meters

- types and functions of the various types of utilities industries meters.

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of 8.1)

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Assessment

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

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Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range
  - Apply sustainable energy principles and practices as specified in the performance criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Investigating billing exceptions as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Exceptions and	At least 6	• Long term bill accounts (12 months) • Meter changes • Manual bills

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conditions:		• Daily accounts • Active and inactive accounts • Gas used on an inactive account i.e. vacant premises • Meter reader is unable to find the meter • Missing meter/records • Unknown consumer investigations • Vacant premises investigations • Meter relocations
B. Investigating billing exceptions, field calls regarding:	At least 4	• Owner/occupiers' of properties • Dates of entry of owner/occupier • Meter reading for billing purposes • Meter identification details • Other relevant information such as forwarding address • Payment arrangements
C. Telephone contact to:	At least 3	• Consumers • Council/rates office • Real estate agents • Internal employees/departments • Other statutory authorities
D. Liaison with customers through:	All	• In person • Telephone • Fax • Letter • Internet
E. Solutions	At least 4	• Arrange the removal of inactive meters

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include:		• Account billed • Change meters • Arrangements for payment made • Adjust accounts • Access for future meter reading made
F. Requirements	All	• Administrative working environments in the Gas Industry • Communication, negotiation and problem solving techniques • Understand and use appropriate accounting program • Utilities industries meters
G. Unplanned events	At least one occasion	Dealing with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.

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- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in investigating billing exceptions/conditions.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Competency Standard Units where listed.

UEGNSG102B	Carry out work activities in a utilities industry work environment
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to investigating billing exceptions/conditions.

The following constants and variables included in the element/performance criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Exceptions and conditions
- Problems
- Investigating billing exceptions
- Telephone contact
- Liaison with customers
- Solutions

Unit Sector(s)

Utilities Industry

Competency Field

Competency Field **11)**

Support services

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UEGNSG714A Relight Type A gas appliances

Modification History

This unit is a revised version of the UEG11 unit UEGNSG704A Conduct an appliance relight.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers relighting a Type A gas appliance by a designated gas industry person following the interruption to gas supply using manufacturers lighting instructions and company standard operating procedures in accordance with relevant legislative, standard and code requirements.

It encompasses the use of hand tools for purging gas service pipework, testing the installation for soundness, identifying and reporting potentially dangerous installations and isolating unsafe appliances, relighting safe appliances and completing appropriate documentation.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to any safe work site where Type A gas appliances are installed, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 2 entry level competency for new entrants in the gas industry. It is suitable for pre-employment and employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training.

In the workplace:

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limit the age at which a person can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG005A	Prepare to work in the Australian gas industry

Literacy and numeracy **4.2)**

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skills	Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy' Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills	**5)** The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to conduct a Types A appliance relight	1.1	Work instructions for the appliance relight are received and confirmed to ensure clear understanding
	1.2	Relevant requirements and established procedures to be followed for the work are provided and discussed with relevant persons to establish and confirm the work schedule
	1.3	WHS/OHS, environmental and sustainable

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ELEMENT	PERFORMANCE CRITERIA	
		energy policies and procedures are received and confirmed to ensure they are understood
	1.4	Hazards are identified, WHS/OHS risks assessed and control measures are prioritised, implemented and monitored according to established procedures
	1.5	Scope of responsibility under the relevant work permit/authorisation are received and confirmed with relevant persons according to requirements and established procedures
	1.6	Equipment, tools, resources, materials and personal protective equipment needed to conduct an appliance relight are identified, obtained and checked for correct operation and safety.
	1.7	Relevant responsibilities associated with related work safety and emergency procedures at the worksite are confirmed in accordance with requirements and established procedures
	1.8	Appropriate persons are consulted to ensure the appliance relight is coordinated effectively with others involved
	1.9	Client issues are referred to appropriate persons in accordance with industry standards and established procedures
	1.10	Work site is preparation, safety plan and work schedule are confirmed in accordance with established procedures
2 Carry out an installation soundness test and an appliance relight	2.1	WHS/OHS and risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and devices are selected and used correctly and safely.
	2.3	Operational knowledge for utilising correct and safe use of basic equipment and tools to test the installation for soundness and relight an appliance is confirmed

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ELEMENT	PERFORMANCE CRITERIA	
	2.4	Appliance relight is undertaken following manufacturer's instructions and company procedures
	2.5	Work is carried out efficiently, to the required quality standard without waste of materials or damage to apparatus, equipment, the surrounding environment or services and using sustainable energy principles.
	2.6	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for directions according to established procedures
	2.7	Further instructions are sought from appropriate persons for unplanned events or conditions occurring
	2.8	Ongoing checks of quality of the work are undertaken in accordance with instructions and established procedures
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Final checks including visual observation is performed to ensure the quality of the work complies with established procedures and to appliance manufacturers instructions
	3.3	Appropriate persons are notified of completion of the work
	3.4	Equipment and tools and any surplus resources and materials are cleaned, checked and stored securely
	3.5	Work area is tidied and made safe in accordance with given instructions and established procedures
	3.6	Work completion records and documentation are updated in accordance with instructions and established procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for relighting a Type A gas appliance by a designated gas industry person following the interruption to gas supply.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G714A Type A appliance relight

Evidence shall show an understanding of relighting a Type A gas appliance in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Relevant legislation, Australian Standards, codes, regulations and procedure requirements

T2. Safety requirements

- hazards, risk assessment and control measures
- environmental and safety hazards, assess risks and implement control measures
- safety requirements for entering domestic and commercial customer sites

T3. Customer liaison

T4. Procedures and tools for purging service lines

T5. Soundness testing tools, equipment and procedures

T6. Procedures for identifying and isolating unsafe appliances/ installations

T7. Procedures for conducting Type A appliance relights

T8. Reading and recording gas meter details

T9. Relevant documentation

- signs, symbols terminology and legends as used in industry procedures and documents
- workplace forms and reports

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Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with industry and regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included in the Assessment Guidelines of this

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Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines — UEG11'. Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required knowledge and skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti-discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Relight a Type A gas appliance as described in 9.) Range Statement and including:

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Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A. Procedures	All	• Work utilising relevant WHS/OHS legislation, regulations, codes of practice, policies and procedures • Communicate effectively with appropriate personnel and customers • Accurately complete records and documentation • Follow work schedules including meeting appointments • Effectively use tools and equipment to conduct a Type A appliance relight • Advise stakeholders of potentially dangerous or illegal situations
B. Requirements	All	• Installation reconnection following interruption of supply • Installation soundness (leak) testing • Identifying non-conforming appliances and installations • Isolation of unsafe appliances and

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		installations
C. Unplanned events	At on at least one occasion	Respond to an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.
- Appropriate work environment, equipment and tools.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in conducting appliance relights.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the key competencies.

Method of assessment **8.4)**

This Unit shall be assessed by methods given in Volume 1 Part 3 ‘Assessment Guidelines’.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Unit applies.

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This requires that the specified Required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Required Knowledge and Skills described in this unit.

Concurrent assessment and relationship with other units

8.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied Units where listed.

UEGNSG132 A	Carry out basic work activities in a gas industry work environment

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Unit shall be demonstrated in relation to relighting a Type A gas appliance by a designated gas industry person following the interruption to gas supply.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Appropriate persons
- Hand tools to disconnect and reconnect meters, including footprints, spanners, neon tester, bonding leads, soap tester, safety matches
- Safe working procedures
- Legislative requirements
- Personal Protective Equipment

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Unit Sector(s)

Gas Industry

Competency Field

Competency Field **11)**

Support services

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UEGNSG804A Maintain Single Stage and Single Run Gas Flow and Pressure Control and Measuring Devices

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers maintaining gas distribution flow and pressure regulating and measuring devices and associated equipment in accordance with relevant legislation, codes, regulations and procedures.

It encompasses single stage and single run regulator systems, manual control valves, diaphragm and sleeve regulators, small capacity union connected positive displacement meters.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to the following the types of gas facilities, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS)and duty of care requirements being met for the workplace:

- District and customer metering and regulator sets
- Distribution line and path valves

This unit is intended as an AQF 2 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS), gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti- discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age at which persons can operate certain equipment.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

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Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*	*Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.*

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare maintain gas flow and pressure control and measuring devices	1.1	WHS and environmental measures for the site are identified, obtained and understood.
	1.2	Work requirements for the work are interpreted from plans, specifications and instructions
	1.3	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule and respective responsibilities.
	1.4	WHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.5	Hazards are identified, WHS risks are assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Scope of the responsibility under the relevant work permit and/or relevant notification is received and confirmed to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for correct operation and safety.
	1.8	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved

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ELEMENT	PERFORMANCE CRITERIA	
	1.9	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.10	Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.11	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work"
	1.12	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Maintain gas flow and pressure control and measuring devices	2.1	WHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Gas detectors are used to determine if gas concentration in worksite is safe and to locate and pinpoint any gas escapes and immediate supervisor is advised immediately if site is unsafe.
	2.3	Appropriate materials, tools, equipment PPE and measuring devices are selected and used correctly and safely.
	2.4	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements
	2.5	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6	Hazard warnings and safety signs are recognised and WHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	Information on gas flow and pressure measurement

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ELEMENT	PERFORMANCE CRITERIA	
		and control devices performance is collected and reported in accordance with established procedures.
	2.8	Scheduled maintenance of components conducted in accordance with the work schedule and established procedures
	2.9	Regulator filter and meter components are setup and operated, system is purged and pressurised in accordance with established procedures
	2.10	Faults and operational conditions of the components are identified, repaired or replaced and reported in accordance with organisational requirements
	2.11	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.12	Routine quality checks are carried out in accordance with work instructions
3 Complete work and relevant documentation	3.1	WHS risk control work completion measures and procedures are followed.
	3.2	Work site is tidied and made safe in accordance with established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for

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REQUIRED SKILLS AND KNOWLEDGE

carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge required is provided below. It forms an integral part of this unit.

KS01-G804A Single Stage Gas Flow and Pressure Control & Measurement Maintenance

Evidence shall show an understanding of operating and maintaining single stage and run gas flow and pressure measuring and regulating devices in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas distribution regulator facilities

- types
- principles of operation
- components

T2. Manual gas flow control

- principles of operation
- components

T3. Gas filtering systems

- system types
- principles of operation
- components including gas strainers, filters, differential pressure indicators
- maintenance
- fault finding, repair and replacement

T4. Pressure control equipment

- types
  - Diaphragm and Sleeve Regulators
  - Slam shuts and OPSO’s
  - Pressure Relief Devices
- principles of operation
- fault finding, repair and replacement

T5. Flow measurement equipment

- types
  - Small capacity union connected positive displacement meters
  - operation
  - maintenance
  - fault finding, repair and replacement

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REQUIRED SKILLS AND KNOWLEDGE

T6. Component venting and purging operations

T7. Manufactures specifications, manuals and procedures.

T8. Organisations manuals and procedures

T9. Relevant Legislation, Standards, Codes and Regulations including:

- AS2885.3 Pipelines - Gas and liquid petroleum
- AS/NZS 4645 Gas distribution networks
- AS/NZS 5601 Gas installations

T10. Reporting and documentation requirements

T11. PPE and Safety Equipment Bonding clamps and electrical protection

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being

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assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be ‘rich’ in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its ‘richness’. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines — UEG11". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment

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- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carry out work on single stage and run gas flow and pressure measuring and regulating devices in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.

    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices

    C. Maintaining manual valves, filters and diaphragm and sleeve regulators and pressure relief devices

    D. Operating, adjusting/testing, fault finding and maintaining pressure measurement, control and relief devices

    E. Purging and venting components

    F. Completing required documentation and reporting.

    G. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

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These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG132A	Carry out basic work activities in a utilities industry work environment

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UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to operating, fault finding, repair, replacement and maintenance of gas flow and pressure control & measurement equipment in the following gas facilities: .

- District and customer metering and regulator sets
- Distribution line and path valves
- Note: Fault finding is limited to the component level.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Monitoring, adjusting and controlling
- Regulation of flow and pressure
- Gas Measurement
- Recording and reporting
- Regulation of the system
- Equipment
- Organisational and statutory requirements

Unit Sector(s)

Gas Industry

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11. Competency Field

Competency Field **10)**

Gas systems operations

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UEGNSG805A Maintain Multi-Stage and Multi-Run Gas Flow and Pressure Measuring and Regulating Devices

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the maintenance of gas distribution and transmission facilities in accordance with relevant legislation, codes, regulations and procedures.

It encompasses the maintenance of gas stations to equipment level which includes non SCADA operated multi-stage and multi-run systems, control valves, regulators and meters.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to the following types of gas stations, subject to all Workplace Health and Safety (WHS/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace:

- pressure reduction stations, district and customer regulator sets
- compressor stations
- meter stations and customer meter sets
- custody transfer stations
- inlets and city gates
- scraper stations
- gas storage facilities
- non SCADA main line valves

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract

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of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age at which persons can operate certain equipment. Other

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License to practice **3)**

conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEGNSG804A	Maintain Single Stage and Single Run Gas Flow and Pressure Measuring and Regulating Devices

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

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Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare maintain multi-stage and multi-run gas flow and pressure measuring and regulating devices	1.1	WHS and environmental measures for the site are identified, obtained and understood.
	1.2	Work requirements for the work are interpreted from plans, specifications and instructions
	1.3	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule and respective responsibilities.
	1.4	WHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.5	Hazards are identified, WHS and risks are assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Scope of the responsibility under the relevant work permits and/or relevant notification is received and confirmed to access, isolate/de-energise systems and perform work according to requirements and

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ELEMENT	PERFORMANCE CRITERIA	
		established procedures
	1.7	Equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for correct operation and safety.
	1.8	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.9	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.10	Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.11	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work".
	1.12	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Maintain multi-stage and multi-run gas flow and pressure measuring and regulating devices	2.1	WHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Gas detectors are used to determine if gas concentration in worksite is safe and to locate and pinpoint any gas escapes and immediate supervisor is advised immediately if site is unsafe.
	2.3	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.4	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements
	2.5	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or

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ELEMENT	PERFORMANCE CRITERIA	
		services and using sustainable energy principles.
	2.6	Hazard warnings and safety signs are recognised and assessed WHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.7	Data on system performance and usage is collected, reviewed and reported in accordance with established procedures.
	2.8	Gas station venting and purging operations are undertaken in accordance with established company procedures
	2.9	Regulator and meter runs and components are setup and operated, system is purged and pressurised in accordance with established company procedures.
	2.10	Faults and operational conditions of the components are identified, repaired or replaced and reported in accordance with organisational requirements
	2.11	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.12	Routine quality checks are carried out in accordance with work instructions
3 Complete work and relevant documentation	3.1	WHS risk control work completion measures and procedures are followed.
	3.2	Work site is tidied and made safe in accordance with established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the essential knowledge and associated skills (EKAS) required is provided below. It forms an integral part of this unit.

KS01-G805A Multi-Stage Gas Flow and Pressure Control & Measurement Maintenance

Evidence shall show an understanding of operating and maintaining gas flow and pressure measuring and regulating devices in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas distribution and transmission stations

- types
- principles of operation
- components

T2. Gas flow control

- principles
- component types and operation
- maintenance
- fault finding, repair and replacement

T3. Gas monitoring equipment

- types
- principles of operation
- components
- maintenance
- fault finding, repair and replacement

T4. Pressure control equipment

- types
  - Pilot loaded diaphragm and sleeve regulators
  - Slam shuts
  - PSVs
- principles of operation
- multi-runs and stage systems, inter-stage, active/monitor, etc.

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- maintenance
- fault finding, repair and replacement

T5. Flow measurement equipment

- types
  - Positive displacement meters
  - Turbine meters
- operation
- maintenance
- fault finding, repair and replacement

T6. Gas station alarms and safety devices

- types
- operation
- maintenance
- fault finding, repair and replacement

T7. Gas station valves

- types
- operation
- maintenance
- fault finding, repair and replacement

T8. Gas station venting and purging operations

T9. Manufactures specifications, manuals and procedures.

T10. Organisations gas facility manuals, schematics, P+ID’s and procedures

T11. Relevant Legislation, Standards, Codes and Regulations including:

- AS2885.3 Pipelines - Gas and liquid petroleum
- AS/NZS 4645 Gas distribution networks
- AS/NZS 5601 Gas installations

T12. Reporting and documentation requirements

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

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Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

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Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines — UEG11". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner’s performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carry out work on gas flow and pressure measuring and regulating devices in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.

    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices

    C. Replacing, operating, fault finding, adjusting and maintaining gas valves, filters, regulators and pressure relief devices

    D. Replacing, operating, fault finding, adjusting/testing, and maintaining pressure measurement, control, boosters and relief devices

    E. Purging and venting components

    F. Completing required documentation and reporting.

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G. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

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This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG804A	Maintain Single Stage and Single Run Gas Flow and Pressure Measuring and Regulating Devices
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for*

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RANGE STATEMENT

different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to, the operation and maintenance of gas flow, pressure control & measurement equipment in at least 3 of the following types of gas stations:

- Pressure reduction stations, district and customer regulator sets
- Compressor stations
- Meter stations and customer meter sets
- Custody transfer stations
- Inlets and city gates
- Scraper stations
- Gas storage facilities
- Non SCADA main line valves

The equipment includes the following;

- Valves, types: Ball, Plug, Double Black and Bleed
- Pressure Controllers
- Regulators, at least 2 types: Diaphragm, Sleeve and Hydraulic Plug
- Meters, at least 2 types: Diaphragm, Rotary and Turbine

Note: Fault finding is limited to the component level.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Monitoring, adjusting and controlling
- Regulation of flow and pressure
- Gas Measurement
- Recording and reporting
- Regulation of the system
- Equipment
- Organisational and statutory requirements

Unit Sector(s)

Gas Industry

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11. Competency Field

Competency Field **11)**

Gas Systems operations

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UEGNSG806A Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the monitoring, operating and maintaining Supervisory Control and Data Acquisition System (SCADA) controlled gas distribution and transmission station facilities in accordance with relevant legislation, codes, regulations and procedures.

It encompasses Gas Station monitoring, operation and maintenance of equipment which includes remotely operated and controlled valves, air loaded & SCADA controlled regulators, Coriolis, Ultrasonic and electronic meters.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to the following types of gas stations, subject to all Workplace Health and Safety (WHS) / Occupational Health and Safety and duty of care requirements being met for the workplace:

- Compressor stations
- Custody transfer stations
- Inlets and city gates
- Scraper stations
- Gas storage facilities
- SCADA controlled Main Line Valves

This unit is intended as an AQF 4 competency for

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existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace Health and Safety, Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

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License to practice **3)**

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age at which persons can operate certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detectors to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Workplace Health and Safety regulations, codes and practices in the gas industry
UEGNSG804A	Maintain Single Stage and Single Run Gas Flow and Pressure Control and Measuring Devices
UEGNSG805A	Maintain Multi-Stage and Multi-Run Gas Flow and Pressure Measuring and Regulating Devices

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) **Elements describe the essential outcomes of a competency standard unit**

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to maintain SCADA controlled gas flow and pressure equipment & electronic gas measurement equipment	1.1	WHS/OHS and environmental measures for the site are identified, obtained and understood.
	1.2	Work requirements for the work are interpreted from plans, specifications and instructions
	1.3	Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule and respective responsibilities

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ELEMENT	PERFORMANCE CRITERIA	
	1.4	WHS/OHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.5	Hazards are identified, WHS/OHS and risks are assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Scope of the responsibility under the relevant work permits and/or relevant notification is received and confirmed are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for correct operation and safety.
	1.8	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.9	Materials, plans, diagrams, drawings and resources required for work are confirmed, scheduled and obtained in accordance with established procedures
	1.10	Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.11	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work".
	1.12	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Maintain SCADA controlled gas flow and pressure equipment & electronic gas measurement equipment	2.1	WHS/OHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Gas detectors are used to determine if gas concentration in worksite is safe and to locate and pinpoint any gas escapes and immediate supervisor is advised immediately if site is unsafe.
	2.3	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and

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ELEMENT	PERFORMANCE CRITERIA	
		safely.
	2.4	Hazardous activities such as lifting, climbing, working in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements
	2.5	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.6	Hazard warnings and safety signs are recognised and assessed WHS/OHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures
	2.7	Electrical isolations are scheduled, local/remote control actuated and communicated as per established company procedures
	2.8	Data on system performance, usage and unplanned events are collected, reviewed and reported in accordance with established procedures
	2.9	Gas station venting and purging operations are undertaken with established company procedures
	2.10	Regulator and meter runs and components are setup and operated, system is vented, purged and pressurised in accordance with established company procedures
	2.11	Process variables and set points are taken and required adjustments and repairs are carried out in accordance with established procedures
	2.12	Actuators are isolated/ de-energised in accordance with manufactures instructions and established company procedures
	2.13	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.14	Routine quality checks are carried out in accordance

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ELEMENT	PERFORMANCE CRITERIA	
		with work instructions
3 Complete the work and relevant documentation	3.1	WHS/OHS risk control work completion measures and procedures are followed.
	3.2	Work site is tidied and made safe in accordance with established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the required skills and knowledge and their level for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the required skills and knowledge is provided below. It forms an integral part of this unit.

KS01-G806A Electronic (SCADA) Gas Flow, Pressure Control & Measurement

Evidence shall show an understanding of operating and maintaining Supervisory Control and Data Acquisition System (SCADA) gas flow and pressure measuring and regulating devices in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Principles of SCADA use in monitoring and control of applicable organisational gas infrastructure

T2. Component types, function and operation including:

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- data collection and equipment control functions including:
  - Remote Terminal Unit (RTU)
  - Plant Control System (PCS) what's this mean?
  - PLC's Programmable Logic Controllers
  - DCS's Distributive Control Systems
- system controller interface such as Human Machine Interface (HMI)
- data and voice communication including:
  - Satellite Link
  - Internet Protocol (IP)
  - Modem/ISDN
  - UHF/VHF Radio
  - Microwave
  - Local Area Network (LAN)
  - Wide Area Network (WAN)

T3. Remote Telemetry Units (RTU's) and associated controller maintenance including:

- start up and shut down of process controllers and RTU equipment
- adjustment of process set point control and status e.g. local/remote and auto/manual
- alarm monitoring, acknowledgement, prioritisation and escalation
- alarm inhibit/enablement/disablement.

T4. SCADA operated gas conditioning and monitoring equipment

- principles of operation
- components
- maintenance
- fault finding, repair and replacement

T5. SCADA operated pressure control equipment

- types
  - Air loaded diaphragm and sleeve regulators
  - SCADA operated valves
  - ALBs
- principles of operation
- maintenance
- fault finding, repair and replacement

T6. SCADA gas flow measurement equipment

- types
  - Coriolis meters
  - Ultrasonic meters
  - Turbine meters
- operation
- maintenance

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- fault finding, repair and replacement

T7. SCADA gas station alarms and safety devices

- types
- operation
- maintenance
- fault finding, repair and replacement

T8. SCADA operated gas station valves

- types
- operation
- maintenance
- fault finding, repair and replacement

T9. SCADA controlled gas station venting, purging and pressurisation operations

T10. Gas station maintenance requirements and procedures

- change over regulator and meter runs
- change over filters/separators
- purge and pressurise station
- adjust set points

T11. Manufactures specifications, manuals and procedures.

T12. Organisations gas facility manuals, schematics, SCADA displays, switches, P+ID's and procedures

T13. Relevant Legislation, Standards, Codes and Regulations including:

- AS2885.3 Pipelines - Gas and liquid petroleum
- AS/NZS 4645 Gas distribution networks
- AS/NZS 5601 Gas installations

T14. Reporting and documentation requirements

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

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Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit **8.2)**

Before the critical aspects of evidence are considered all

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prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines — UEG11". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the required skills and knowledge as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Maintaining SCADA controlled gas flow and pressure measuring and regulating devices in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:
    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.
    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices
    C. Replacing, operating, fault finding, adjusting and maintaining gas valves, filters, regulators and pressure relief devices

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D. Replacing, operating, fault finding, adjusting/testing, and maintaining pressure measurement, control, boosters and relief devices

E. Purging and venting components

F. Completing required documentation and reporting.

G. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment

8.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- WHS/OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved

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industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG805A	Maintain Multi-Stage and Multi-Run Gas Flow and Pressure Measuring and Regulating Devices

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BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to the operation & maintenance of SCADA controlled gas flow, pressure control & electronic gas measurement equipment in gas regulator and compressor stations

The equipment includes the following;

- Remotely operated valves, types: Double block and Bleed
- Remote Telemetry Units (RTU's) and controllers
- Actuators: Pneumatic, Electric and I to P convertors
- Pressure Controllers
- Meters: Coriolis and Ultrasonic

Note: Fault finding is limited to the component level.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Monitoring, adjusting and controlling
- Regulation of flow and pressure
- Gas Measurement
- Recording and reporting
- Regulation of the system
- Equipment
- Organisational and statutory requirements

Unit Sector(s)

Gas Industry

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Competency Field

Competency Field **11)**

Gas systems operations

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UEGNSG807A Install Gas Flow, Measuring and Pressure Regulating Devices

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the installation of gas flow, measuring and pressure regulating devices in accordance with relevant legislation, codes, regulations and procedures.

It encompasses the installation of gas valves, pressure controllers, regulators and meters in gas facilities and stations.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to the following types of gas stations, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace:

- pressure reduction stations, district and customer regulator sets
- compressor stations
- meter stations and customer meter sets
- custody transfer stations
- inlets and city gates
- scraper stations
- gas storage facilities
- main line valves

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This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are also subject to licence regulation directly related to Workplace Health and Safety (WHS)/ Occupational Health and Safety (OHS) gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment. Permits may also be required for some work environments such as hazardous areas, confined

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License to practice **3)**

spaces, working aloft, near live electrical devices, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age at which persons can operate certain equipment. Other conditions may apply to this competency under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG006A	Use a portable gas detector to locate escape
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the workplace

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have

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reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to install gas flow, measuring and pressure regulating devices	1.1 WHS and environmental measures for the site are identified, obtained and understood.
	1.2 Work requirements for the work are interpreted from plans, specifications and instructions
	1.3 Relevant requirements and established procedures for the work are discussed with relevant persons to establish and confirm the work schedule and respective responsibilities.

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ELEMENT	PERFORMANCE CRITERIA	
	1.4	WHS, environmental and sustainable energy policies and procedures are received and confirmed.
	1.5	Hazards are identified, WHS and risks are assessed and control measures are prioritised, implemented and monitored according to established procedures.
	1.6	Scope of the responsibility under the relevant work permits and/or relevant notification is received and confirmed to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Equipment, tools and personal protective equipment needed to carry out the work are identified, scheduled, obtained and checked for correct operation and safety.
	1.8	Appropriate persons are consulted to ensure the work is coordinated effectively with others involved
	1.9	Materials, plans, diagrams, drawings and resources required for work are confirmed and obtained in accordance with established procedures
	1.10	Relevant responsibilities associated with first aid and other related work safety procedures for an incident at the worksite are checked and confirmed.
	1.11	Third party issues are referred to appropriate persons in accordance with established procedures, for example "low voltage electrical work".
	1.12	Site preparation, safety plan and the work schedule are confirmed in accordance with established procedures.
2 Install gas flow, measuring and pressure regulating devices	2.1	WHS risk control measures, schedule of work and standard operating procedures for carrying out the work are followed.
	2.2	Appropriate materials, tools, equipment and measuring devices are selected and used correctly and safely.
	2.3	Hazardous activities such as lifting, climbing, working

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ELEMENT	PERFORMANCE CRITERIA	
		in confined spaces, excavations, trenches, or aloft, and use of power tools, techniques and practices are conducted safely in accordance with given instructions and to requirements
	2.4	Work is carried out efficiently, to the required standard without waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.5	Hazard warnings and safety signs are recognised and assessed WHS risks and incidents are reported to the immediate authorised persons for directions according to established procedures.
	2.6	Installation of components is conducted in accordance with the work schedule and established procedures
	2.7	Regulators, filters and meter components system are purged, pressurised and checked for soundness in accordance with established procedures
	2.8	Procedures for referring non-routine events to the immediate authorised persons for directions are followed.
	2.9	Routine quality checks are carried out in accordance with work instructions
3 Complete work and relevant documentation	3.1	WHS risk control work completion measures and procedures are followed.
	3.2	Work site is tidied and made safe in accordance with established procedures
	3.3	Tools, equipment and any surplus resources and materials are cleaned, checked and securely stored.
	3.4	Appropriate persons are notified of work completion according to established procedures
	3.5	Work completion documentation is completed accurately and provided to appropriate persons in accordance with established procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the essential skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies. The extent of the essential knowledge and associated skills (EKAS) required is provided below. It forms an integral part of this unit.

KS01-G805A Gas Flow and Pressure Control & Measurement Devices Installation

Evidence shall show an understanding of installing gas flow and pressure measuring and regulating devices in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Gas distribution and transmission stations

- types
- principles of operation
- components

T2. Gas flow control

- principles
- component types and operation
- installation

T3. Gas filtering systems

- system types
- principles of operation
- components including gas strainers, filters, differential pressure indicators
- maintenance
- fault finding, repair and replacement

T4. Gas monitoring equipment

- types
- principles of operation
- components
- installation

T5. Pressure control equipment

- types
  - Pilot loaded diaphragm and sleeve regulators

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REQUIRED SKILLS AND KNOWLEDGE

  - Slam shuts
  - PSVs
- principles of operation
- single run and single stage systems
- multi-run and multi-stage systems, inter-stage, active/monitor, etc.
- installation

T6. Flow measurement equipment

- types
  - Small capacity union connected positive displacement meters
  - Positive displacement meters
  - Turbine meters
- operation
- installation

T7. Gas station alarms and safety devices

- types
- operation
- installation

T8. Gas station valves

- types
- operation
- installation

T9. Gas station venting, purging, pressurising and soundness check operations

T10. Manufactures specifications, manuals and procedures.

T11. Organisations gas facility manuals, schematics, P+ID’s and procedures

T12. Relevant Legislation, Standards, Codes and Regulations including:

- AS2885.3 Pipelines - Gas and liquid petroleum
- AS/NZS 4645 Gas distribution networks
- AS/NZS 5601 Gas installations

T13. Reporting and documentation requirements

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in

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EVIDENCE GUIDE

conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **8.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in **8.2)**

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this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines — UEG11". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and range
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Carry out work on gas flow and pressure measuring and regulating devices in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:
    A. Identifying and interpreting correctly drawings, diagrams, schedules, procedures and manuals relevant to the work to be undertaken.
    B. Selecting correct materials, equipment, tools, personal protection equipment and measurement devices
    C. Installing gas valves, filters, regulators and pressure

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relief devices

D. Installing pressure measurement, control, boosters and relief devices

E. Purging, pressurising, checking soundness and venting components

F. Completing required documentation and reporting.

G. Dealing with unplanned events by drawing on essential knowledge and skills, procedures/ protocols to provide appropriate solutions incorporated in the holistic assessment with the above listed items, for example encroachment and/or contact with assets

Context of and specific resources for assessment **8.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

These should be part of the formal learning/assessment environment.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

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The resources used for assessment should reflect current industry practices in relation to locating, proving and protecting utility assets.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified Required Skills and Knowledge are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG804A	Maintain Single Stage and Single Run Gas Flow and Pressure Measuring and Regulating Devices
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

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Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This unit shall be demonstrated in relation to the installation of gas flow, pressure control & measurement equipment in at least 3 of the following types of gas facilities/stations:

- District and customer metering and regulator sets
- Distribution line and path valves
- Pressure reduction stations, district and customer regulator sets
- Compressor stations
- Meter stations and customer meter sets
- Custody transfer stations
- Inlets and city gates
- Scraper stations
- Gas storage facilities
- Non SCADA main line valves

The equipment includes the following;

- Valves, types: Manual, Ball, Plug, Double Black and Bleed
- Pressure Controllers
- Actuators
- Regulators, at least 2 types: Diaphragm, Sleeve and Hydraulic Plug
- Meters, at least 2 types: Small capacity union connected positive displacement meters, Diaphragm, Rotary and Turbine

Note: Fault finding is limited to the component level.

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Monitoring, adjusting and controlling
- Regulation of flow and pressure
- Gas Measurement
- Recording and reporting
- Regulation of the system

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RANGE STATEMENT

- Equipment
- Organisational and statutory requirements

Unit Sector(s)

Gas Industry

11. Competency Field

Competency Field **11)**

Gas Systems operations

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UEGNSG811A Monitor and operate complex flow control, measuring and regulating devices for gas distribution

Modification History

This unit is a revised version of the UEG11 unit UEGNSG801B Monitor and operate complex flow control, measuring and regulating devices for gas distribution.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers monitoring and operating complex flow control, measuring and regulating devices to monitor and control gas supply in gas distribution systems in accordance with relevant legislation, codes, regulations and procedures.

It encompasses Inspecting and Controlling; Regulation of flow and pressure; Measuring; Recording and reporting; Regulation of flow and regulation devices; Regulation of the system; Equipment; Organisational and statutory requirements.

Application of the Unit

Application of the Unit **2)**

This competency standard shall apply to gas distribution systems, subject to all Workplace Health and Safety (WHS)/Occupational Health and Safety (OHS) and duty of care requirements being met for the workplace.

This unit is intended as an AQF 3 competency for new and existing workers in the gas industry. It is suitable for employment-based programs under an approved contract of training.

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Licensing/Regulatory Information

License to practice **3)**

During Training:

Competency development activities are subject to regulations directly related to licensing, workplace health and safety/occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace:

The application of the skills and knowledge described in this unit require a license to practice in the workplace where work is carried out on electrical equipment or installations which are designed to operate at voltages greater than 50 V a.c. or 120 V d.c.

The skills and knowledge described in this unit are not subject to licence regulation other than those directly related to Workplace/Occupational Health and Safety, gas/electricity/water industry safety and compliance, industrial relations, environmental protection, telecommunications, anti-discrimination and training.

Note:

Other conditions may apply under State and Territory legislative and regulatory requirements, for example:

Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment.

Permits may also be required for some work environments such as hazardous areas, confined spaces, working aloft, near live electrical devices, site rehabilitation.

Compliance may be required in various jurisdictions relating to currency in First Aid, hazardous areas, confined space, lifting and risk safety measures

Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age at which persons can operate certain equipment.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:

UEGNSG005A	Prepare to work in the Australian gas industry
UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG134A	Establish a utilities infrastructure work site
UEGNSG140A	Apply environmental policies and procedures in the utilities industry
UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the gas industry

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged

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Employability Skills **5)**

will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) *Elements describe the essential outcomes of a competency standard unit*

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Prepare to monitor and operate complex gas flow control, measuring and regulating devices	1.1	Work requirements for monitoring and operating complex flow control, measuring and regulating devices are interpreted from plans, specifications and instructions
	1.2	Relevant requirements and established procedures for the work are communicated to all persons
	1.3	WHS/OHS, environmental and sustainable energy policies and procedures related to the monitoring and operating of complex flow controls are obtained and confirmed and communicated
	1.4	Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
	1.5	Risk control measures for identified hazards are prioritised, implemented and monitored against the work schedule

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ELEMENT	PERFORMANCE CRITERIA	
	1.6	Relevant work permits are obtained to access, isolate/de-energise systems and perform work according to requirements and established procedures
	1.7	Resources including appropriately licensed persons, equipment, tools and personal protective equipment required for the work identified, scheduled and obtained and confirmed in a safe working order
	1.8	Liaison and communication with authorised persons, authorities, clients and land-owners is completed so that work can be carried out where necessary
	1.9	Persons participating in the work, including plant operators and contractors are fully briefed and respective responsibilities confirmed where applicable in accordance with established procedures
2 Monitor and operate complex gas flow control, measuring and regulating devices	2.1	Information on device and equipment performance is collected and reported in accordance with organisational requirements
	2.2	Dealings with customers are consistent with standard operating procedures and the special needs of customers are identified and considered in targeting client service
	2.3	Knowledge and Skills required for monitoring and operating complex flow control devices are applied to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4	Routine inspections of system are scheduled and monitored in accordance with the work schedule and established procedures
	2.5	Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to the immediate authorised persons for

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ELEMENT	PERFORMANCE CRITERIA	
		directions according to established procedures
	2.6	Data on system performance and usage is collected, analysed and reported and unplanned events in the monitoring and operation of complex flow control are undertaken with the scope of established procedures
	2.7	Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
3 Control and adjust flows and compile records and reports	3.1	Flow regulating systems are inspected and adjustments made to meet demand and customer requirements
	3.2	Accidents and injuries are reported in accordance with established procedures where applicable
	3.3	Flows and diversions are determined to facilitate repair or emergency activities in accordance with organisational requirements
	3.4	Process faults and operational conditions of the system are identified, addressed and reported in accordance with organisational requirements
	3.5	Work completion records, reports and documentation are finalised and processed and appropriate persons notified

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) *This describes the skills and knowledge and their level, required for this unit.*

Evidence shall show that knowledge has been acquired of safe working practices for carrying out work in a gas industry environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

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KS01-G811A Complex flow control device operation

Evidence shall show an understanding of monitor and operate complex flow control, measuring and regulating devices for gas distribution systems in accordance with relevant legislation, standards, codes and established procedures to an extent indicated by the following aspects:

T1. Basic principles of SCADA use in monitoring and control of applicable organisational gas infrastructure

T2. Component types, function and operation including:

- data collection and equipment control functions including:
  - Remote Terminal Unit (RTU)
- system controller interface such as Human Machine Interface (HMI)

T3. Remote Telemetry Units (RTU's) and associated controller operation including:

- start up and shut down of process controllers and RTU equipment
- adjustment of process set point control and status e.g. local/remote and auto/manual
- alarm monitoring, acknowledgement, prioritisation and escalation
- alarm inhibit/enablement/disablement.

T4. SCADA operated gas conditioning and monitoring equipment

- principles of operation
- components
- fault finding, adjustments and minor repairs

T5. SCADA operated pressure control equipment

- types
  - Air loaded diaphragm and sleeve regulators
  - SCADA operated valves
  - ALBs
- principles of operation
- fault finding, adjustments and minor repairs

T6. SCADA gas flow measurement equipment

- types
  - Coriolis meters
  - Ultrasonic meters
  - Turbine meters
- operation
- fault finding, adjustments and minor repairs

T7. SCADA gas station alarms and safety devices

- types
- operation
- fault finding, adjustments and minor repairs

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T8. SCADA operated gas station valves

- types
- operation
- maintenance
- fault finding, adjustments and minor repairs

T9. SCADA controlled gas station venting, purging and pressurisation operations

T10. Gas station operation requirements and procedures

- change over regulator and meter runs
- change over filters/separators
- purge and pressurise station
- adjust set points

T11. Manufactures specifications, manuals and procedures.

T12. Organisations gas facility manuals, schematics, SCADA displays, switches, P+ID’s and procedures

T13. Relevant Legislation, Standards, Codes and Regulations

Evidence Guide

EVIDENCE GUIDE

8) The Evidence Guide forms an integral part of this Unit and shall be used in conjunction with all components parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

8.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry’s preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord

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with Industry and Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines — UEG11". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
    - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range

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- Apply sustainable energy principles and practices as specified in the Performance Criteria and range
- Demonstrate an understanding of the required knowledge and as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures

- Demonstrate performance across a representative range of contexts from the prescribed items below.
  - Monitor and operate complex flow control, measuring and regulating devices for gas distribution systems in accordance with relevant legislation, code, regulations and procedures as described in 9.) Range Statement and including:

Range of tools/equipment/procedures/workplace		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	At least 3	• Interpret technical drawings and symbols • Selection of appropriate tools and equipment • System knowledge of TP, HP, MP, LP • Relevant knowledge of AS1697 Distribution Code
B	All	• Auxiliary control systems knowledge & understanding • Wide open monitor operation • Two stage pressure reduction with monitor override

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C	All	• SCADA Operation awareness • SCADA control system layout and operation awareness
D	At least 2	• Pressure Controllers - operation &, maintenance Commissioning/Setting • Troubleshooting • Pressure Boosters minor repairs • types/models
E	At least 2	Basic regulators • Sleeve types • Diaphragm types • Hydraulic Plug types
F	All	Distribution Valves: Ball, Plug, Gate Instrument & Butterfly valves
G	At least 2	• Meters Diaphragm meters • Rotary meters • Turbine meters • Oil changing
H	At least 3	Operational checks • Single run units • Dual run units • District regulators • Field regulators
I	At least 3	Pressure alterations • Industrial units • Regulator Stations • Distribution mains
J	At least 3	Flaring & Purging • Industrial units • Regulator Stations • Distribution mains

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K	At least 3	Overpressure protection systems - function & operation • OPSO • Internal pressure relief systems • Pressure relief valves • Slam Shut systems • Valve Actuator & control systems
L	All	Paperwork: • Risk assessments • Time sheets • Completing work sheets • Notifications and work permits • Equipment check lists • Meter Bypass forms • Service orders • Pressure recording charts
M	All	Regulator station heaters: • Heater: scheduled maintenance procedures • Heater: operational checks. • Water quality testing
N	At least one occasion	Dealing with an unplanned event by drawing on required knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for **8.3)**

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assessment

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this Competency Standard Unit.
- Appropriate environmental regulation and work practices.
- Appropriate organisational requirements.

In addition to the resources listed above, in Context of and specific resources for assessment, evidence should show demonstrated competency in monitoring and operating complex flow control, measuring and regulating devices for gas pressure control.

Assessment of this competency must also be undertaken in either an actual workplace or under a simulated work environment. Assessment must also integrate the employability skills.

Method of assessment **8.4)**

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 "Assessment Guidelines".

Note: Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified required Knowledge and Skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **8.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of

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learning and assessment effort being concurrently managed with allied competency standard units where listed.

UEGNSG132A	Carry out basic work activities in a gas industry work environment
UEGNSG141A	Apply Occupational Health and Safety regulations, codes and practices in the gas supply industry
UEGNSG140A	Comply with environmental policies and procedures in the utilities industry
UEGNSG134A	Establish a utilities infrastructure work site
BSBFLM312B	Contribute to team effectiveness
BSBFLM303C	Contribute to effective workplace relationships

Range Statement

RANGE STATEMENT

9) *This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.*

This Competency Standard Unit shall be demonstrated in relation to the monitoring and operating of complex flow control, measuring and regulating devices for gas pressure and flow control in:

- Custody transfer stations
- Inlets and city gates
- Scraper stations
- Gas storage facilities
- Main Line Valves

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section of this volume and form an integral part of the Range Statement of this unit:

- Inspecting and controlling
- Regulation of flow and pressure
- Measuring
- Recording and reporting

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RANGE STATEMENT

- Regulation of flow and regulation devices
- Regulation of the system
- Equipment
- Organisational and statutory requirements

Unit Sector(s)

Gas supply industry

Competency Field

Competency Field **11)**

Systems operations

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UEPMNT367A Install and commission stationary gas fuelled reciprocating engines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the installation and commissioning of stationary gas fuelled reciprocating engines for approval where required. It encompasses working safely and to installation standards matching the plant/equipment, location, components and fuel train pipe-work to given specifications. Commissioning the plant and equipment including: pre commissioning tests, start up, adjusting components and controls to safe and efficient operation. Completing all necessary installation and commissioning documentation.

Application of the Unit

Application of the Unit **2)**

General Application **2.1)**

This competency standard unit is suitable for employment-based programs under an approved contract of training at the AQF level of the qualification in which the unit is first packaged or higher.

The unit may be selected as an elective (see qualification packaging rules) provided that all prerequisite units are undertaken or addressed through recognition processes.

This unit may be included in a skill set.

Importation **2.2)**

RTOs wishing to import this unit into any qualification under the flexibility provisions of NQC/NSSC Training

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Package Policy should ensure all pre-requiste units are also imported into the relevant Training Package and qualification.

Licensing/Regulatory Information

License to practice **3)**

During Training: Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace: The application of the skills and knowledge described in this unit in some States/Territories requires an authority to practice in the workplace. Other conditions may apply under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

Common Unit Group

Unit Code	Unit Title
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
CPCCOHS1001A	Work safely in the construction industry
HLTCPR201A	Perform CPR

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Literacy and numeracy skills	**4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading	4	Writing	4	Numeracy	4

Employability Skills Information

Employability Skills	**5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Prepare to install and commission stationary gas fuelled reciprocating engine	1.1	OHS procedures for a given work area are identified, obtained and understood.
		1.2	Health and safety risks are identified and

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ELEMENT	PERFORMANCE CRITERIA
	established risk control measures and procedures in preparation for the work are followed.
	1.3 Safety hazards that have not previously been identified are noted and established risk control measures are implemented.
	1.4 Design specification for gas fuelled reciprocating engines to be installed and commissioned is accessed, analysed, interpreted and confirmed through a detailed site inspection.
	1.5 Design specification matters requiring clarification are resolved through liaison with designer and gas authorities.
	1.6 Formal authority to proceed with installation and commissioning is obtained before commencing work, in accordance with regulatory and code of practice requirements.
	1.7 Installation is prepared in consultation with others affected by the work and sequenced appropriately in line with quality assurance requirements.
	1.8 The nature and location of the work is determined from documentation or appropriate person to establish the scope of work to be undertaken.
	1.9 Plant, equipment and component specifications and manufacturer manuals are obtained for planned work activity.
	1.10 Locations of plant, equipment, fuel train pipe-work and components are planned within the constraints of work site, significants and requirements.
	1.11 Materials needed for the installation work are obtained in accordance with design specification and established procedures
	1.12 Tools, equipment, including personal protective equipment, and testing devices needed to for the installation and commissioning work are obtained in accordance with established procedures and checked for correct operation and safety.

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ELEMENT	PERFORMANCE CRITERIA
	1.13 Work area is prepared to support efficient installation and commissioning of the plant and equipment.
	1.14 Preparatory work is checked to ensure no damage has occurred and complies with requirements.
2 Install stationary gas fuelled reciprocating engine	2.1 OHS risk control measures and procedures for carrying out the work are followed.
	2.2 Regulatory and code of practice recording and reporting requirements are satisfied at appropriate times throughout the work sequence.
	2.3 Gas and electrical circuits/machines/plant are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
	2.4 Stationary gas fuelled reciprocating engine components, including fuel train and associated pipe-work and flue/exhaust systems are installed in accordance with approved design specification and comply with technical standards and regulatory requirements, with sufficient access to affect terminations, adjustment and maintenance.
	2.5 Ventilation systems are installed in accordance with approved design specifications
	2.6 Electrical components, wiring enclosures and wiring, including terminations are installed in accordance with design and manufacturer's specifications, and functional and regulatory requirements.
	2.7 Ongoing compliance and safety inspections of the installed reciprocating engine , equipment, pipe-work, components and accessories are undertaken and defects are rectified
	2.8 Installation is carried out efficiently without unnecessary waste of materials or damage to plant, equipment, pipe-work, components, accessories, the surrounding environment or services and using sustainable energy principles.
	2.9 Unexpected situations are dealt with safely and

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ELEMENT	PERFORMANCE CRITERIA	
		with the approval of an authorised person.
3 Commission stationary gas fuelled reciprocating engine	3.1	OHS risk control measures and procedures for carrying out the work are followed.
	3.2	Regulatory and code of practice recording and reporting requirements are satisfied at appropriate times throughout the work sequence.
	3.3	Gas and electrical safety checks and isolation procedures, including purging are completed and recorded to manufacturer and other authority requirements before testing and commissioning are commenced.
	3.4	Operational parameters of individual components are tested and adjusted to conform to specifications
	3.5	The reciprocating engine operations are tested first without and then with fuel, adjustments are completed as necessary and results recorded in accordance with approving authority requirements.
	3.6	Exhaust gases are analysed in accordance with recognised industry practice and other authority requirements.
	3.7	Unexpected situations are dealt with safely and with the approval of an authorised person
	3.8	Commissioning is conducted efficiently without waste of materials or damage to apparatus and the surrounding environment or services and using sustainable energy practices
4 Completion and report installation and commissioning activities.	4.1	OHS work completion risk control measures and procedures are followed.
	4.2	Final check of the installed reciprocating engine is made to verify that it complies with all requirements, including any certification required by local authorities.
	4.3	Work area is cleared and materials disposed of or recycled in accordance with federal, state and territory legislation and workplace procedures.

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ELEMENT	PERFORMANCE CRITERIA
	4.4 Tools and equipment are cleaned, checked, serviced and stored in accordance with manufacturer recommendations and workplace procedures
	4.5 Work site is cleaned and made safe in accordance with established procedures.
	4.6 'As-installed' reciprocating engine equipment components, pipe-work, flue/exhaust systems and accessories are documented, accessed and an appropriate person or persons notified in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and installing and commissioning of gas fuelled reciprocating engine

All knowledge and skills detailed in this unit should be contextualised to current industry standards, technologies and practices

The extent of the essential knowledge and associated skills (EKAS) required is given below. It forms an integral part of this unit.

KS01-PM367A Installation and commissioning of gas fuelled plant and equipment

Evidence shall show an understanding of installation and commissioning techniques for stationary gas fuelled reciprocating engines, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:

T1. Gas fuels encompassing:

- Types, properties and applications
- Safety
- Hazards
- Combustion
- Ignition types

T2. Gas fuelled reciprocating engine overview encompassing:

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REQUIRED SKILLS AND KNOWLEDGE

- Types
- Major components
- Operating principles
- Manufacturer's specifications and diagrams

T3. Fuel train requirements encompassing:

- Pipe-work and connections
- Valves
- Metering devices
- Regulating valves
- Electrical controls

T4. Exhaust/flue requirements encompassing:

- Materials
- Terminations
- Sizing

T5. Location ventilation requirements encompassing:

- Materials
- Calculations
- Interlocks
- Locations

T6. Hazardous area requirements encompassing:

- Locations
- Housing requirements
- Distances

T7. Codes, regulations and standards encompassing:

- AS 3814
- AS 5601

T8. Design specifications encompassing:

- Accessing
- Analysis and interpretation
- Calculations

T9. Required authority to proceed encompassing:

- Regulatory requirements (Scope and restrictions)
- Standards and code of practice requirements.
- Required documentation and submissions

T10. Site Arrangements encompassing:

- Location and environment

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REQUIRED SKILLS AND KNOWLEDGE

- Piping requirements for gas fuel train pipe-work
- Suitable equipment/equipment plant locations

T11. Site Safety encompassing:

- Hazards
- Checklists
- Reports

T12. Plant/equipment diagrams encompassing:

- Mechanical layouts
- Gas pipe-work drawings
- Electrical circuits

T13. Installation encompassing:

- Reciprocating engines plant and equipment
- Gas train pipe-work and components
- Exhaust/flue system
- Ventilation system
- Pressure testing and purging
- Authorisations and certification requirements and procedures

T14. Commissioning encompassing:

- Inspection of the installed reciprocating engines, pipe-work, components and accessories
- Testing reciprocating engine operation first without and then with fuel
- Testing and adjusting regulator, operation and safety controls
- Exhaust gases analysis throughout operating parameters including bifuel applications
- Compliance with design specification, regulations, codes, standards and manufacturers specifications
- Documentation and reports
    - As-installed' reciprocating engine components, pipe-work, flue/exhaust systems and accessories are documented and reported

Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction

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EVIDENCE GUIDE

with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate **9.2)**

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competency in this unit

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEP12'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Install and commission gas fuelled plant and equipment as described as described in 8) and including:

    A Obtaining formal authority to proceed with installation and commissioning before commencing work, in accordance with regulatory and code of practice requirements.

    B Reading and interpreting drawings related to plant/equipment locations and pipe-work connections

    C Installing, securing, aligning and connecting plant, equipment, pipe-work, components and

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accessories accurately in their planned location and in compliance with codes and standards.

D Undertaking on-going compliance and safety inspections

E Rectifying any defects revealed through on-going inspections

F Pressure testing, repairing leaks and purging the fuel train system entire system to the appropriate design test pressures.

G Commissioning plant and equipment operation as necessary and results recorded in accordance with approving authority requirements

H Correctly documenting 'as-installed' plant, equipment, pipe-work, components and accessories

I Dealing with unplanned events

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to installing low voltage electrical apparatus and associated equipment.

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Method of assessment **9.4)**

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note:

Competent performance with inherent safe working practices is expected in the industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no concurrent assessment recommendations for this unit.

The critical aspects of occupational health and safety covered in either UEENEEE101A or CPCCOHS1001A and HLTCPR201A and other discipline specific occupational health and safety units shall be incorporated in relation to this unit.

Range Statement

RANGE STATEMENT

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to installation and commissioning of stationary gas fuelled reciprocating engines as follows:

Each of the following:

- Installing and connecting gas fuel train pipe-work, regulators, valves, metering and protective devices from gas pipeline to the reciprocating engine.
- Installing and connecting flue/exhaust system
- Pressure testing and purging gas fuel train
- Commissioning gas fuelled reciprocating engine, adjusting components and

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RANGE STATEMENT

controls to safe and efficient operation.

The gas fuel can be from gas gathering lines, gas transmission pipelines, distribution pipeline, and consumer gas installations. Gas Fuels can be natural gas, LPG, SNG, bio-gas, waste gas or sewage gas, used as a single gas fuel or part of a duel fuel system.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Section 2.1.00 Preliminary Information and Glossaries.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Maintenance

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UEPMNT368A Repair and maintain stationary gas fuelled reciprocating engines

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit covers the isolation, disconnecting, repairing, reconnecting and maintenance of stationary gas fuelled reciprocating engines for approval where required. It encompasses working safely and to relevant standards disconnecting, carry out repairs and replacement of fuel train components to given specifications. Reconnecting the engine including: pre start tests, start up, adjusting components and controls to safe and efficient operation. Completing all required documentation.

Application of the Unit

Application of the Unit **2)**

General Application **2.1)**

This competency standard unit is suitable for employment-based programs under an approved contract of training at the AQF level of the qualification in which the unit is first packaged or higher.

The unit may be selected as an elective unit (see qualification packaging rules) provided that all prerequisite units are undertaken or addressed through recognition processes.

This unit may be included in a skill set.

Importation **2.2)**

RTOs wishing to import this unit into any qualification under the flexibility provisions of NQC/NSSC Training

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Package Policy should ensure all pre-requiste units are also imported into the relevant Training Package and qualification.

Licensing/Regulatory Information

License to practice **3)**

During Training: Competency development activities are subject to regulations directly related to licensing, occupational health and safety and where applicable contracts of training such as apprenticeships.

In the workplace: The application of the skills and knowledge described in this unit in some States/Territories requires an authority to practice in the workplace. Other conditions may apply under State and Territory legislative and regulatory requirements.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

Common Unit Group

Unit Code	Unit Title
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
CPCCOHS1001A	Work safely in the construction industry
HLTCPR201A	Perform CPR

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Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 4 Writing 4 Numeracy 4

Employability Skills Information

Employability Skills **5)**

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to repair and maintain gas fuelled reciprocating engines	1.1 OHS procedures for a given work area are identified, obtained and understood.
	1.2 Health and safety risks are identified and established risk control measures and procedures

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ELEMENT	PERFORMANCE CRITERIA	
		in preparation for the work are followed.
	1.3	Safety hazards that have not previously been identified are noted and established risk control measures are implemented.
	1.4	Formal authority to proceed with repair and maintenance is obtained before commencing work, in accordance with regulatory and code of practice requirements
	1.5	Repair and maintenance is prepared in consultation with others affected by the work and sequenced appropriately.
	1.5	The nature and location of the work is determined from documentation or appropriate person to establish the scope of work to be undertaken.
	1.6	Plant, equipment and component specifications and manufacturer manuals are obtained for planned work activity
	1.7	Material needed for the repair and maintenance work is obtained in accordance with established procedures and checked against job requirements.
	1.8	Tools, equipment, including personal protective equipment, and testing devices needed to for the repair and maintenance work are obtained in accordance with established procedures and checked for correct operation and safety.
	1.9	Preparatory work is checked to ensure no damage has occurred and complies with requirements.
2 Repair and maintain gas fuelled reciprocating engines	2.1	OHS risk control measures and procedures for carrying out the work are followed.
	2.2	Regulatory and code of practice recording and reporting requirements are satisfied at appropriate times throughout the work sequence.
	2.3	Gas and electrical circuits/machines/plant are checked and recorded as being isolated and safe where necessary in strict accordance authority and OHS requirements and procedures before

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ELEMENT	PERFORMANCE CRITERIA	
		work is commenced.
	2.4	Nature and possible cause of faults or out of specification performance are identified from defect reports or operational records.
	2.5	Fault finding is approached methodically drawing on knowledge of gas fuelled reciprocating engines using observation, measurement, calculations and comparison with normal system and component parameters/values.
	2.6	Faults beyond the scope of gas fuel train, ignition or fume exhaust work are identified and arrangements are made for appropriately competent and authorised person to rectify faults
	2.7	Engine is disconnected where necessary to carry out maintenance and repairs in strict accordance authority and OHS requirements and procedures. Note: No modifications are permitted.
	2.8	Components are removed/dismantled where necessary and parts stored to protect them against loss or damage
	2.9	Faulty components are rechecked and their fault status confirmed.
	2.10	Materials required to rectify faults are sourced and obtained in accordance with established procedures
	2.11	Repair and maintenance work is carried out efficiently without unnecessary waste of materials or damage to apparatus, circuits, the surrounding environment or services and using sustainable energy principles.
	2.12	Effectiveness of the repair is tested in accordance with established procedures.
	2.13	System is reassembled, reconnected and finally tested to ensure it is operating safely, effectively and complies with relevant requirements.
	2.14	Unexpected situations are dealt with safely and

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ELEMENT	PERFORMANCE CRITERIA	
		with the approval of an authorised person.
3 Completion and report repair and maintenance	3.1	OHS work completion risk control measures and procedures are followed.
	3.2	Final check of the engine is made to verify that it complies with all requirements, including any certification requirements by local authorities.
	3.3	Work area is cleared and materials disposed of or recycled in accordance with federal, state and territory legislation and workplace procedures.
	3.4	Tools and equipment are cleaned, checked, serviced and stored in accordance with manufacturer recommendations and workplace procedures
	3.5	Work site is cleaned and made safe in accordance with established procedures.
	3.6	Maintenance and repair work is documented and an appropriate person or persons notified in accordance with established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and repairing and maintaining gas fuelled reciprocating engines.

All knowledge and skills detailed in this unit should be contextualised to current industry standards, technologies and practices.

The extent of the essential knowledge and associated skills (EKAS) required is given below. It forms an integral part of this unit.

KS01-PM368A Repairing and maintaining gas fuelled reciprocating engines

Evidence shall show an understanding of repairing and maintaining stationary gas fuelled reciprocating engines, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:

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REQUIRED SKILLS AND KNOWLEDGE

T1. Gas fuels encompassing:

- Types, properties and applications
- Safety
- Hazards
- Combustion
- Ignition types

T2. Gas fuelled reciprocating engines encompassing:

- Types
- Major components
- Operating principles
- Manufacturer’s specifications and diagrams

T3. Fuel train requirements encompassing:

- Pipe-work and connections
- Valves
- Metering devices
- Regulating valves
- Electrical controls

T4. Exhaust/flue requirements encompassing:

- Materials
- Terminations
- Sizing

T5. Location’s ventilation requirements encompassing:

- Locations
- Materials
- Calculations
- Interlocks

T6. Hazardous area requirements encompassing:

- Locations
- Housing requirements
- Distances

T7. Codes, regulations and standards encompassing:

- AS 3814
- AS 5601

T8. Design specifications encompassing:

- Accessing
- Analysis and interpretation
- Calculations

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REQUIRED SKILLS AND KNOWLEDGE

T9. Required authority to proceed encompassing:

- Regulatory requirements (Scope and restrictions)
- Standards and code of practice requirements.
- Required documentation and submissions

T10. Site Arrangements encompassing:

- Location and environment
- Piping requirements for gas fuel train pipe-work
- Suitable equipment/equipment plant locations

T11. Site Safety encompassing:

- Hazards
- Checklists
- Reports

T12. Engine diagrams encompassing:

- Mechanical layouts
- Gas pipe-work drawings
- Electrical circuits

T13. Fault finding encompassing:

- Taking readings and gathering information
- Symptoms and possible faults
- Logical fault diagnosis sequence and flow charts
- Manufacturer’s fault diagnosis tables
- Confirming actual fault

T14. Disconnect requirements and procedures encompassing:

- Regulator, business and customer requirements
- Manufacturers specifications and procedures

T15. Repairs and maintenance requirements and procedures encompassing:

- Gas train pipe-work and components
- Exhaust/flue system
- Ventilation system
- Oil change
- Oil and air filter replacement

T16. Reconnection requirements and procedures encompassing:

- Regulator, business and customer requirements
- Manufacturers specifications and procedures
- Inspection of the installed engine, pipe-work, components and accessories
- Pressure testing and purging

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REQUIRED SKILLS AND KNOWLEDGE

- Testing engine operation first without and then with fuel
- Testing and adjusting regulator, operation and safety controls
- Exhaust gases analysis.
- Compliance with design specification, regulations, codes, standards and manufacturers specifications back to Commissioned settings
- Documentation and reports
  - As-installed' plant and equipment components, pipe-work, flue/exhaust systems and accessories are documented and reported

Evidence Guide

EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being

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assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEP12'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.

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- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Repairing and maintaining gas fuelled reciprocating engines as described as described in 8) and including:

    A Conducting maintenance

    B Finding faults efficiently

    C Disconnecting engine

    D Rectifying faults without damage

    E Reconnecting

    F Providing written reports on work undertaken

    G Dealing with unplanned events

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should be part of the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to installing low voltage electrical apparatus and associated equipment.

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Method of assessment **9.4)**

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note:

Competent performance with inherent safe working practices is expected in the industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no concurrent assessment recommendations for this unit.

The critical aspects of occupational health and safety covered in either UEENEEE101A or CPCCOHS1001A and HLTCPR201A and other discipline specific occupational health and safety units shall be incorporated in relation to this unit.

Range Statement

ANGE STATEMENT

10) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to repairing and maintaining stationary gas fuelled reciprocating engines as follows:

Each of the following:

- Gas fuel train pipe-work, regulators, valves, metering and protective devices from gas pipeline to the engine.
- Flue/exhaust system
- Pressure testing and purging gas fuel train
- Disconnecting and reconnecting gas fuelled reciprocating engines, adjusting components and controls to safe and efficient operation.

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ANGE STATEMENT

It does not include the following:

- Repairs the internal mechanical components of the engine

The gas fuel can be from gas gathering lines, gas transmission pipelines, distribution pipeline, and consumer gas installations. Gas Fuels can be natural gas, LPG, SNG, bio-gas, waste gas or sewage gas, used as a single gas fuel or part of a duel fuel system.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Section 2.1.00 Preliminary Information and Glossaries.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Maintenance

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UEPOPS203B Operate and monitor communications system

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit deals with the skills and knowledge required to operate and monitor the application of communications systems.

Application of the Unit

Application of the Unit **2)**

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as apprenticeships and the like.

Pre-Requisites

Prerequisite Unit(s) **4)**

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Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

There are no pre-requisite units

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 2 Writing 2 Numeracy 2

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Select and use equipment	1.1	The appropriate medium for communication is determined from analysis of available options, previous communication or current circumstances and used in accordance with enterprise guidelines, manufacturer's and/or site requirements
		1.2	Communication procedures for opening, passing and receiving messages are conducted to enterprise/site requirements
		1.3	Communication equipment is used in accordance with manufacturer's and enterprise/site procedures
		1.4	Limitations of communication links are identified and alternatives considered
		1.5	Communication is conveyed logically, concisely and articulately in a manner appropriate to the situation to satisfy job requirements
		1.6	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of the on-the-job training
2	Monitor communication system	2.1	Data acquisition is monitored and assessed for quality and action taken in accordance with enterprise/site procedures
		2.2	Effectiveness of communication, including understanding of the intent and content, is confirmed between the parties in accordance with site requirements
		2.3	The need for communication assistance is identified and addressed in accordance with job requirements
3	Complete documentation	3.1	Documentation is updated, logs maintained and equipment problems, abnormalities and status are reported and logged in accordance with enterprise/site procedures

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and communication systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-PO203B Communication Systems

Evidence shall show an understanding of communication systems to an extent indicated by the following aspects:

T1 Use of a range of electronic communication tools including:

- facsimile;
- telephone (POTS and mobile);
- two-way radio or CB radio;
- SMS messaging;
- personal computers;
- e-mail;
- Internet/Intranet messaging;
- pager; and
- intercom

according to licensing regulations, enterprise requirements and manufacturers' instructions.

T2 Use of a range of non-electronic communication tools, including:

- spoken communication; and
- hand signals.

T3 Communication protocols and procedures required when using the following mediums:

- facsimile;
- telephone (POTS and mobile)
  - answering procedures
  - limitations of mobile phones including black/dead spots;
- two-way radio or CB radio
  - call signs
  - calling in and signing off
  - Privacy and security

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REQUIRED SKILLS AND KNOWLEDGE

- using common channels and repeaters
- limitations including black/dead spots;
- SMS messaging;
- E-mail
  - etiquette;
- Internet/Intranet messaging
  - privacy and security;
- pager;
- intercom;
- report forms;
- log books;

T4 Interpersonal communication

- communicating facts clearly;
- communicating technical concepts to non-technical people;
- active listening skills;
- dealing with difficult, angry or irate people;
- on-the-job training techniques.

T5 Enterprise Recording Procedures

- Reports;
- Logs;
- Databases;
- Escalation procedures

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the competency standard unit and must be read in conjunction with the Performance Criteria and the Range Statement of the competency standard unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this competency standard unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

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Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all pre-requisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each Element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with

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the "Assessment Guidelines – UEP12". Evidence shall also comprise:

- Each Element on at least two occasions
- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
  - Demonstrate an understanding of the Essential Knowledge and Associated Skills as described in 6) Essential Knowledge and Associated Skills of this unit
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - Knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
  - Acknowledging and prioritising fault communication
  - Selecting and applying communication systems
  - Monitoring communication systems
  - Dealing with an unplanned event by drawing on Essential Knowledge and Skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions
- Suitable work environment, facilities, equipment and materials

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to undertake actual work as prescribed by this competency standard unit

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

In addition to the resources listed above in Context of assessment', evidence should show competency working in confined spaces, with different types of plant and equipment as well as different structural/construction types and method and in a variety of environments

Method of assessment **9.4)**

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this competency standard unit applies. This requires that the specified Essential Knowledge and Associated Skills be assessed in a structured environment, which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

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Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Medium for communications may include facsimile, telephone, radio, other electronic medium, memo, letter, report form, log book, switchboard, e-mail, pager, intercom, CB, poster, personal contact, signal and body language

Information and documentation sources may include verbal or written communications; enterprise safety rules documentation; enterprise operating instructions; dedicated computer equipment; enterprise/site standing and operating instructions; enterprise log books; manufacturer's operation and maintenance manuals; and equipment and alarm manuals

Communication procedures may include protocol, appropriate forms/log books, telephone answering procedure and radio procedure

Limitations may be radio/mobile phone dead spots, weather conditions, customer language barriers, customers lack of technical knowledge and incoherent or irate callers

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

Access skills and knowledge for employment

This unit is not suitable for work entry and is intended for building upon competencies previously acquired.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Operations

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UEPOPS205B Conduct minor mechanical maintenance

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit deals with the skills and knowledge required to conduct a range of minor/basic maintenance functions associated with, but not limited to, mechanical equipment.

Application of the Unit

Application of the Unit **2)**

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as apprenticeships and the like.

Pre-Requisites

Prerequisite Unit(s) **4)**

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Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

There are no pre-requisite units.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 2 Writing 2 Numeracy 2

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA	
1 Plan and prepare for the work	1.1	Work requirements are identified from request/work orders or equivalent and clarified/confirmed with appropriate parties or by site inspection
	1.2	Occupational Health and Safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturers' specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure
	1.3	Resources required to satisfy the work plan are identified, obtained and inspected for compliance with the job specifications
	1.4	Relevant plans, drawings and texts are selected and interpreted in accordance with the work plan
	1.5	Correct size, type and quantity of materials/components are determined, obtained and inspected for compliance with the job specifications
	1.6	Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for the maintenance of plant security and capacity in accordance with system/site requirements
	1.7	Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work
	1.8	Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures
	1.9	Work area is prepared in accordance with work requirements and site procedures
2 Conduct minor	2.1	Required isolations are confirmed where

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ELEMENT	PERFORMANCE CRITERIA	
maintenance		appropriate in accordance with enterprise requirements
	2.2	Minor maintenance is conducted in accordance with the work plan and site requirements
	2.3	Minor adjustments are undertaken in accordance with prescribed procedures and schedules and site requirements
	2.4	Faults are reported to the relevant parties in accordance with site/enterprise procedures
3 Complete the work	3.1	Work is completed and appropriate personnel notified in accordance with site/enterprise requirements
	3.2	Work area is cleared of waste, cleaned, restored and secured in accordance with site/enterprise procedures
	3.3	Plant, tools and equipment are maintained and stored in accordance with site/enterprise procedures
	3.4	Work completion details are finalised in accordance with site/enterprise procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and minor mechanical maintenance.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-PO205B Mechanical Maintenance - Minor

Evidence shall show an understanding of how to undertake minor mechanical maintenance to an extent indicated by the following aspects:

T1 Use of a range of hand tools, including:

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REQUIRED SKILLS AND KNOWLEDGE

- Basic measuring tools, including rulers
- Screwdrivers

i. Flat blade

ii. Phillips head

iii. Posidrive

iv. Torx™

- Metal hacksaw
- Hammers

i. Ball pein

ii. Claw hammer

iii. Club hammers

iv. Soft-faced hammers or mallets

- Spanners and sockets

i. Open-ended spanners

ii. Ring spanners

iii. Adjustable spanners

- Pliers

i. Combination pliers

ii. Long nose pliers

iii. Multi-grip

iv. Vice grips

- Wrenches

i. Stillson

ii. Footprint

- Allen keys
- Scrapers.

T2 Use of a range of small power tools, including:

- Pistol drills
- Battery drills and screwdrivers
- Angle grinders and polishers (buffers)
- Sanders

T3 Use a range of engineering workshop tools, including:

- Benders
- Guillotines

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REQUIRED SKILLS AND KNOWLEDGE

T4 Identification of a range of different types of metals, including:

- Mild Steel
- Sheet steel
- Aluminium
- Sheet aluminium
- Copper
- Brass

T5 Drill a range of materials using the correct drill bit type, including:

- Mild Steel
- Aluminium
- Copper

T6 Prepare surfaces on engineering materials for maintenance through:

- Sanding
- Grinding
- Polishing

T7 Clean machinery using techniques including:

- Water
- Pressure washers
- Steam cleaners
- Hydrocarbon solvents

T8 Air receivers and air lines

- Blow down air receivers
- Maintain oil levels in oilers
- Empty and wipe out dryers

T9 Health, Safety and Environment practices and procedures, including:

- Risk assessment
- Control of hazards
- Identification and correct use of personal protective equipment
- Manual handling techniques
- Compliance with ‘Permit-to-Work’ requirements and equipment isolation procedures
- Dealing with waste in an environmentally appropriate manner
- Housekeeping

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Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the competency standard unit and must be read in conjunction with the Performance Criteria and the Range Statement of the competency standard unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this competency standard unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

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Critical aspects of evidence required to demonstrate competency in this unit **9.2)**

Before the critical aspects of evidence are considered all pre-requisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each Element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UEP12". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
  - Demonstrate an understanding of the Essential Knowledge and Associated Skills as described in 6) Essential Knowledge and Associated Skills of this unit
  - Demonstrate an appropriate level of employability skills
  - Conduct work observing the relevant Anti-Discrimination legislation, regulations, polices and workplace procedures
- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - Knowledge and application of relevant sections of: Occupational, health and safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
  - Acquiring and analysing information relevant for recording
  - Maintaining records
  - Retrieving records
  - Dealing with an unplanned event by drawing on Essential Knowledge and Skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

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Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this competency standard unit

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

In addition to the resources listed above in Context of assessment', evidence should show competency working in confined spaces, with different types of plant and equipment as well as different structural/construction types and method and in a variety of environments.

Method of assessment **9.4)**

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this competency standard unit applies. This requires that the specified Essential Knowledge and Associated Skills be assessed in a structured environment, which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the Essential Knowledge and Skills described in this unit.

Concurrent **9.5)**

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assessment and relationship with other units

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Minor maintenance may include lubrication, , gland nipping, draining of water taps, filter cleaning and changing, charging bowl and ball mills, exchange of conveyor rollers, removing/replacing access covers, replacing shear pins, applying plastic metals, degreasing, preparing surfaces, limited mechanical assembly and minor fabrication tasks e.g. brackets, gaskets.

Inspections should be planned with the appropriate parties to determine access, conditions and work requirements.

Materials may refer to lubricants, cleaning agents and emery paper.

Equipment may include pumps, fans, compressors, blowers, transmissions, a.c./d.c. rotating electrical plant, pipe work, heat exchangers, tanks, dampers, mills, feeders, crushers, conveyors and air slides.

Tools may include drills, angel grinders, buffers, sanders, grease guns, benders, guillotines, pressers, scrapers and hand tools.

Appropriate parties may refer to supervisor, tradesperson or operations personnel.

Work completion details and plans may include plant and maintenance records, job cards, check sheets, on device labelling updates and reporting and/or documenting equipment defects.

Work site environment may be affected by nearby plant or processes, e.g. chemical, heat, dust, noise, gas and oil.

Isolations can refer to electrical/mechanical or other associated processes.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Operations

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UEPOPS317B Operate and monitor fixed fire protection systems

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit deals with the skills and knowledge required to operate, inspect and monitor fixed fire protection systems.

Application of the Unit

Application of the Unit **2)**

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

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Prerequisite Unit(s) **4)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

There are no pre-requisite units.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare work	1.1 Safety issues are identified to comply with enterprise/site requirements
	1.2 Work requirements are identified from relevant personnel and documentation
	1.3 Documentation to determine plant status is assessed and evaluated
	1.4 Localised plant inspection and field preparations for service are carried out in accordance with manufacturer and enterprise procedures
	1.5 Plant operational pre-requisites are established in accordance with manufacturer and enterprise procedures
	1.6 Sequence for recommissioning of plant is determined to suit existing circumstances in accordance with enterprise requirements
	1.7 Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of the on-the-job training
2 Operate plant	2.1 Plant is operated in accordance with enterprise and manufacturer operating procedures
	2.2 Plant is monitored and observed to detect deviations from normal operating conditions
	2.3 Corrective actions are taken to rectify abnormalities in accordance with manufacturer and enterprise procedures
3 Test plant operation	3.1 Tests are performed in accordance with defined procedures applicable to the operational test
	3.2 Plant is observed for correct operational response in accordance with enterprise / manufacturers requirements
	3.3 Correct action is taken in accordance with enterprise procedures

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ELEMENT		PERFORMANCE CRITERIA	
		3.4	Plant is returned to required operational status upon completion of test
4	Analyse system faults	4.1	Causes of abnormal plant operating conditions are identified by analysing the technical and operational information in a logical and sequential manner
		4.2	Corrective action taken is in accordance with enterprise procedures
		4.3	Plant integrity and personnel safety are maintained through consultation with appropriate personnel, and with reference to plant, technical and operational documentation
5	Monitor and inspect plant	5.1	Plant to be monitored/inspected is physically identified
		5.2	Plant is monitored/inspected for normal operation or to detect deviations
		5.3	Corrective action taken is in accordance with enterprise procedures
		5.4	Appropriate personnel are notified when defects are detected
6	Complete Documentation	6.1	Documentation is updated and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and operate and monitor fixed fire protection systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

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REQUIRED SKILLS AND KNOWLEDGE

KS01-PO317B Operate and monitor fixed fire protection systems

Evidence shall show an understanding of how to operate and monitor fixed fire protection systems, to an extent indicated by the following aspects:

T1 Principles of combustion

- Fire triangle
- Agents used to control and extinguish fires.
- Fire hazards in electricity generation plants.

T2 Fire suppression systems:

- Types:
  - Water deluge;
  - Foam;
  - Halon;
  - Gas;
  - CO2.
- Theory of operation
- Hazards of gas fire suppression systems

T3 Interpretation of documentation:

- Hard-copy and computer-based documentation;
  - Enterprise/site safety and emergency documentation;
  - Equipment and alarm manuals;
  - Enterprise/site log books;
  - Manufacturers' manuals.

T4 Fire protection system testing:

- Communication with Central Controller and other staff;
- Isolation of alarm system;
- Remote communications and data-logging systems testing;
- Stand-by power supply testing;
- Lamp indicator testing;
- Alarm testing;
- Valve testing.

T5 Confirmation of operational status of fire fighting and fire prevention equipment:

- Currency of inspection tags and log book entries;
- Fire and smoke detectors;
- Inventory and visual checks of extinguishers, fire blankets, hydrant reels, signage and other on-site fire fighting and fire prevention equipment;
- Valves, actuators and dampers in correct operating position;
- Availability of emergency water supply;

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REQUIRED SKILLS AND KNOWLEDGE

- Fire doors, fire walls and fire barriers;
- Fire pump engine
  - fuel supply;
  - lubrication;
  - starter battery;
  - coolant.

T6 Reporting, record and log keeping:

- as per Statutory, Enterprise and manufacturers' requirements;
- reporting of non-compliant fire protection or fire suppression systems or equipment.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitude competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place,

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access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all pre-requisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UEP12". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement
  - Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
  - Demonstrate an understanding of the essential knowledge and associated skills as described in 6) Essential Knowledge and Associated Skills of this unit

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- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - Knowledge and application of relevant sections of: Occupational Health and Safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
  - Preparation and planning of work
  - Operation of fixed fire protection systems
  - Operationally testing plant
  - Analysing plant faults
  - Monitoring plant operation
  - Dealing with an unplanned event by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

In addition to the resources listed above in Context of assessment', evidence should show competency working, in limited spaces, with different types of plant and equipment as well as different structural/construction types and methods and in a variety of environments.

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Method of assessment **9.4)**

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines..

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units **9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

Range Statement

RANGE STATEMENT

10) This relates to the unit of competency as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Systems may include fire control, supervisory, alarm and control equipment; valves, actuators and dampers (electric, hydraulic, pneumatic and manual); storage plant; detectors water deluge; detection systems; foam, halon, gas and CO2 suppression systems.

Safety standards may include relevant sections of Occupational Health and Safety legislation enterprise safety rules, relevant state and federal legislation, national standards for plant and environmental legislation.

Information and documentation sources may include verbal and written communications, enterprise/site safety rules documentation/form(s), equipment and

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RANGE STATEMENT

alarm manuals, dedicated computer equipment, enterprise/site standing and operating instructions, enterprise/site log book and manufacturer operation and maintenance manuals.

Technical and operational indicators may include stimuli (audio, smell, touch, visual), local indicators and recorders, computers and alarms (visible and or audible).

Communications may be by means of telephone, two way radio, pager, public address system, facsimile, computer (electronic mail) and operating log (written or verbal).

Tests may include stand-by plant tests, post maintenance operating tests and alarm tests.

Appropriate personnel to consult, give or receive direction may include supervisor/team leader or equivalent, power system control personnel or equivalent, contractor and specialist personnel, maintenance staff and power plant operations personnel.

Test, fault finding and operating tools may include hand and power tools and CO2 equipment.

Operating environment may be during inclement or otherwise harsh weather conditions, in wet/noisy/dusty/hot areas, during night periods and during continuous operation.

Faults and abnormal operating conditions may include motor/pump/ actuator/valve/damper failure/malfunction, control equipment failure/ malfunctions, loss of electrical supply to plant and equipment, loss/ low air, water, lubricating oil to plant/ equipment, CO2 system faults/ malfunctions, CO2 leaks, high filter/ strainer dp, and excessive vibration pumps/ motors.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Operations.

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UEPOPS336B Manage, operate and monitor a gas turbine unit

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit deals with the skills and knowledge required to undertake the management of an in-service gas turbine unit.

Application of the Unit

Application of the Unit **2)**

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **4)**

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Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

There are no pre-requisite units.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

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Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Plan and prepare work	1.1	Safety issues are identified to comply with enterprise/site requirements
		1.2	Work requirements are identified from relevant personnel and documentation
		1.3	Pre operational checks are carried out on plant according to manufacturer recommendations and site requirements
		1.4	Where appropriate the teams and individuals roles and responsibilities within the team are identified, and where required, assist in the provision of the on-the-job training
2	Operate plant	2.1	Output is adjusted to achieve required gas turbine operating conditions and demand, observing operatic requirements
		2.2	Plant is operated within limits of plant design, enterprise or site requirements
		2.3	Plant is monitored and observed to detect deviations from required operating conditions
		2.4	Corrective actions are taken to rectify abnormalities in accordance with manufacturer and enterprise/site procedures
3	Test plant operation	3.1	Tests are performed in accordance with defined procedures applicable to the operational test
		3.2	System and plant is observed for correct operational response
3		3.3	Corrective action is taken when response is not in accordance with documentation, plant integrity or personnel safety requirements
		3.4	Plant is returned to required operational status upon completion of test
4	Analyse system faults	4.1	Causes of abnormal plant operating conditions are identified by analysing the technical and

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ELEMENT	PERFORMANCE CRITERIA	
		operational information in a logical and sequential manner
	4.2	Corrective action taken is in accordance with enterprise/site procedures
	4.3	Plant integrity and personnel safety is maintained through consultation with appropriate personnel, and reference to plant, technical and operational documentation
	4.4	Appropriate personnel are notified when defects are detected
5 Monitor plant	5.1	Plant to be monitored is identified
	5.2	Plant is monitored for normal operation or to detect deviations
	5.3	Appropriate personnel are notified when defects are detected
6 Complete documentation	6.1	Documentation is updated and plant problems, movements, abnormalities and status are reported and logged in accordance with enterprise/site procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of conducting single energy source isolation procedures.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

The extent of the Essential Knowledge and Associated Skills required follows:

KS01-PO336B A gas turbine unit

Evidence shall show that knowledge has been acquired for safe working practices of:

T1 Relevant Environmental, Occupational Health and Safety legislation and regulations

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REQUIRED SKILLS AND KNOWLEDGE

T2 Enterprise procedures

T3 Plant drawings and manufacturers manuals

T4 Introduction to and typical arrangements of power production plant

T5 Relevant plant and equipment, its location and operating parameters

T6 Electric motor types and characteristics

T7 Pump and compressor types and characteristics

T8 Valve, damper and actuator types and characteristics

T9 Switchgear types and characteristics

T10 Electrical protection types and characteristics

T11 Relevant state and territory regulations

T12 Gas turbine principle of operation

T13 Air intake, types and characteristics

T14 Air inlet cooling and heating systems, types and characteristics

T15 Exhaust, types and characteristics

T16 Lubrication systems, types and characteristics

T17 Control oil systems, types and characteristics

T18 Water wash systems, types and characteristics

T19 Cooling systems, types and characteristics

T20 Water/steam injection systems, types and characteristics

T21 Combustion system, types and characteristics

T22 Generator, types and characteristics

T23 Generator excitation system, types and characteristics

T24 Electrical fundamentals

T25 Plant status

T26 Enterprise recording procedures

T27 Control and data acquisition systems

T28 Computers and software

T29 supervisory, alarm, protection equipment

T30 Fire protection control system, types and characteristics

KS02-PO336B A gas turbine unit

Specific skills needed to achieve the Performance Criteria:

T1 Interpret plant drawings and manufacturers manuals

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REQUIRED SKILLS AND KNOWLEDGE

T2 Apply relevant state and territory regulations

T3 Apply enterprise recording procedures

T4 Identify plant status

T5 Prepare plant/equipment for operation

T6 Organise resources

T7 Operate gas turbine plant and equipment

T8 Apply diagnostic and testing techniques

T9 Identify and respond to abnormal plant operating conditions

T10 Plan and prioritise work

T11 Use relevant hand tools

T12 Communicate effectively

T13 Apply data analysis techniques and tools

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitude competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full

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can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all pre-requisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UEP12". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement

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- Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in 6) Essential Knowledge and Associated Skills of this unit
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - Knowledge and application of relevant sections of: Occupational Health and Safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
  - Preparation and planning of work
  - Operation of gas turbine plant/equipment
  - Operationally testing plant
  - Analysing plant faults
  - Monitoring plant operation
  - Knowledge of the system components and their interaction;
  - Knowledge of gas turbine operational processes
  - Dealing with an unplanned event by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of

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work.

In addition to the resources listed above in Context of assessment', evidence should show competency working, in limited spaces, with different types of plant and equipment as well as different structural/construction types and methods and in a variety of environments.

Method of assessment

9.4)

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

Range Statement

RANGE STATEMENT

10) This relates to the unit of competency as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Plant and equipment may include; electrical supply switchboard(s) and transformers; gas turbine and auxiliary plant; fuel and fuel delivery system plant; fuel management system; flame detection equipment; air inlet, cooling systems, fuel conditioning,

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RANGE STATEMENT

turning gear, water wash system, starter systems plant, gas turbine temperature control plant; electric motors (a.c. and d.c., high and low voltage); electricity distribution system (a.c. and d.c. transformers); diesel engine driven auxiliary plant; station water distribution systems; hydraulic power oil system; compressed air systems; computers with equipment control functions; supervisory, alarm, protection and control equipment.

Safety standards may include relevant sections of Occupational Health and Safety legislation, enterprise safety rules, electricity workers act, national standards for plant.

Information and documentation sources may include verbal or written communications; enterprise isolation documentation; site operating instructions; plant limit book; equipment and alarm manuals; crippled plant book; daily log book; dedicated computer equipment; documented enterprise instructions, local and general.

Technical and operational indicators may include stimuli (audio, smell, touch, visual), remote or local indicators and recorders, computers, alarms (visible and/or audible).

Communications may be by means of telephones, two way radios, pagers, facsimiles, computers (electronic mail), operating logs (written or verbal).

Tests may include loss of major auxiliary controls response checks, stand-by plant "cut-in" tests, dampers/valves operating checks, performance tests.

Appropriate personnel to consult, give or receive direction may include, supervisor/team leader or equivalent; other coordinators of energy production or equivalent; technical and engineering officers or equivalent; maintenance staff; other operating staff; contractor staff.

Operating environment may be remote from plant and equipment being operated; operation is assisted by remote indicators of plant status and other parameters monitored; wet/noisy/dusty/hot areas, continuous operation.

Plant operations (systems requirements) may include normal operating/generating mode.

Faults and abnormal operating conditions may include loss of a major auxiliary; loss of electrical supply to switchboard(s), motors; operating limits exceeded; control system malfunctions; high temperatures, exhaust (back end), motor, fan, pump bearings and lubricating oil, motor windings; fuel preparation and delivery systems fires; fuel system malfunction; excessively high heating/cooling rates; high dp's on oil/air filters and strainers; failed field devices; failed/malfunctioning actuators/dampers/valves; gas turbine protection operation and gas turbine surging.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

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Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Operations.

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UEPOPS347B Operate and monitor supervisory, control and data acquisition systems

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This unit deals with the skills and knowledge required to undertake monitoring and operation of screen based supervisory, control and data acquisition systems.

Application of the Unit

Application of the Unit **2)**

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

This unit is not suitable for work entry and is intended for building upon competencies previously acquired.

Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as apprenticeships.

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Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

There are no pre-requisite units.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 3 Writing 3 Numeracy 3

Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the

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Evidence Guide.

Elements and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Operate screen displays	1.1	Safety issues are identified in accordance with enterprise/system requirements
		1.2	System requirements are identified from relevant personnel and documentation
		1.3	Screen displays and applications are identified and retrieved in accordance with system requirements
		1.4	Functions available from the screen based equipment are identified and selected in accordance with system procedures
		1.5	Functions available from the screen based equipment are utilised in accordance with system requirements
		1.6	Where appropriate, the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of the on-the-job training
2	Monitor and interpret information	2.1	Screen displays are monitored in accordance with enterprise/system procedures
		2.2	Abnormal values are identified by analysis of information obtained from screen displays in accordance with enterprise/system procedures
		2.3	Corrective action taken is in accordance with enterprise/system procedures
		2.4	Alarms are acknowledged, prioritised and responded to in accordance with enterprise/system procedures
3	Enhance screen display	3.1	Requirements for the development of new screen displays are identified and confirmed in accordance with system requirements

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ELEMENT	PERFORMANCE CRITERIA
	3.2 New screen displays are researched, assessed and confirmed with appropriate personnel in accordance with system requirements

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and supervisory, control and data acquisition (SCADA) systems.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-PO347B Supervisory, control and data acquisition (SCADA) systems.

Evidence shall show an understanding of how to use supervisory, control and data acquisition (SCADA) systems, to an extent indicated by the following aspects:

T1 Windows Operating System

- Starting up and logging on to the operating system
- Windows desktop
- ‘Point-and-click’ and ‘click-and-drag’ functionality of Windows.
- Clipboard
- Icons
- Applications
- Minimising, maximising and arranging windows
- Memory and memory devices
- Saving and backing up data
- Printing from Windows and Windows applications

T2 Instrumentation theory

- Process switches
- Pressure gauges
- Pressure switches
- Thermocouples
- Vibration sensors
- Transmitters

T3 Remote telemetry and data acquisition

- Remote Terminal Units

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REQUIRED SKILLS AND KNOWLEDGE

- Programmable Logic Controllers (PLCs)
- Communication network

T4 SCADA Systems

- Human Machine Interface (HMI)
- Mimic diagrams
- SCADA ‘Historian’ database
- Tags (points)
- Trending
- Diagnostic data
- Commands and functions
- Drawing program
- Alarm points
- Alarm indicators
- Alarm events
- Server
- Redundancy
- Index searching

T5 Distributed Control Systems (DCS)

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment **9.1)**

Longitude competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry’s preferred model for

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apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all pre-requisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UEP12". Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this

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shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement
- Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in 6) Essential Knowledge and Associated Skills of this unit
- Demonstrate an appropriate level of employability skills
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated performance across a representative range of contexts from the prescribed items below:
  - Knowledge and application of relevant sections of: Occupational Health and Safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
  - The full range of displays and applications available is explained
  - Operation of screed based equipment
  - Dealing with an unplanned event by drawing on essential knowledge and skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items

Context of and specific resources for assessment

9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of

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work.

In addition to the resources listed above in Context of assessment', evidence should show competency working, in limited spaces, with different types of plant and equipment as well as different structural/construction types and methods and in a variety of environments.

Method of assessment

9.4)

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

Range Statement

RANGE STATEMENT

10) This relates to the unit of competency as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Safety standards may include relevant sections of Occupational Health and Safety legislation, enterprise safety rules, relevant state and federal legislation and national

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RANGE STATEMENT

standards for plant.

Information and documentation sources may include verbal or written communications; enterprise safety rules documentation; enterprise operating instructions; dedicated computer equipment; enterprise/site standing and operating instructions; enterprise log books; manufacturer operation and maintenance manuals; and equipment and alarm manuals.

Communications may be by means of telephone, two way radio, pager, computer (electronic mail) and operating logs (written or verbal).

Appropriate personnel to consult, give or receive direction may include supervisor/team leader or equivalent, power plant operations personnel or equivalent, technical and engineering officers or equivalent, maintenance staff, other operating staff or equivalent, system controller/network controller, field operator and restricted HV operators.

Operating environment may be remote from plant and equipment being operated.

Displays and functions may include trends, alarms, generation plant, fuel supplies, remote plant and equipment, substations, power distribution network, transmission network, stakeholder systems, multiple screens, multiple windows, linkage between screens, trending facilities, index searches, formats, colours, tags, key commands, dedicated keys and alarms.

Faults and abnormal operating conditions may include hardware and software faults and system failures.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**

Operations.

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UETTDREL14A Working safely near live electrical apparatus as a non-electrical worker

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor **1) Scope:**

1.1) Descriptor

This Competency Standard Unit covers compliance with working safely up to the defined "safe approach distance" near energised electrical apparatus (inc. electrical powerlines) for non-electrical workers. It includes work functions that may be performed, such as vegetation control, scaffolding, rigging, painting, and/or any other activity that requires working safely and complying with requirements and/or established procedures near live electrical apparatus by a non-electrical worker. Also included is the preparation of risk assessment control measures that encompass job safety assessment. It does not include any work that is or may be performed by other competent operatives within the defined "safe working zone". The defined "safe working zone" is that so defined by relevant State or Territory regulatory agencies/bodies, local government legislation, Industry bi-partite body – Guidelines/Codes of Practices or other related requirements for Safe work and access near live Electrical and Mechanical Apparatus.

Application of the Unit

Application of the Unit **2)**

This competency standards unit shall apply to Transmission, Distribution, Rail Traction, Telecommunications and Vegetation Management Control industry sectors.

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Licensing/Regulatory Information

License to practice **3)**

The skills and knowledge described in this unit may require a licence/registration to practice in the work place subject to regulations for undertaking of electrical work. Practice in workplace and during training is also subject to regulations directly related to Occupational Health and Safety, electricity/telecommunications/gas/water industry safety and compliance, industrial relations, environmental protection, anti discrimination and training. Commonwealth, State/Territory or Local Government legislation and regulations may exist that limits the age of operating certain equipment.

Pre-Requisites

Prerequisite Unit(s) **4)**

Competencies **4.1)**

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s):

There are no prerequisite competencies to this unit.

Literacy and numeracy skills **4.2)**

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 “Literacy and Numeracy”.

Reading 3 Writing 3 Numeracy 3

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Employability Skills Information

Employability Skills **5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a competency standard unit

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare to work safely near live electrical apparatus as non-electrical worker	1.1 Instructions related to the work to be performed safely near live electrical apparatus as non-electrical worker are received and confirmed.
	1.2 Relevant requirements and established procedures to be followed and, relevant personnel to be communicated with for the work to be performed are identified.
	1.3 OHS policies and procedures to be followed for the work to be performed are received and confirmed.
	1.4 Suggestions to assist in meeting the safety requirements for working near live electrical apparatus as a non-electrical worker are made to others involved in the work.
	1.5 Hazards are identified, OHS risks assessed and control measures are prioritised, implemented and monitored including emergency exits kept

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ELEMENT	PERFORMANCE CRITERIA	
		clear according to established procedures.
	1.6	Scope of responsibility and process of relevant work permit(s) issue is identified, received and confirmed according to requirements and established procedures.
	1.7	Relevant responsibility associated with First Aid, Safety Observers and/or other related work safety procedures at the worksite are identified in accordance with requirements and established procedures to ensure safety measures are followed in the instance of an incident.
	1.8	Processes for identifying and reporting client issues to appropriate personnel in accordance with industry/acceptable /community standards are identified.
	1.9	Site and the work schedule to be prepared are confirmed according to given instructions for a quality outcome and to minimise risk and damage to property, commerce, stock and individuals in accordance and established procedures.
	1.10	Electricity infrastructure assets, related voltages and requirements for working safely near live electrical apparatus as non-electrical worker are identified.
	1.11	Safe approach distances including any zones thereof that may apply, as defined in industry guidelines, requirements and/or established procedures for the intended work are confirmed.
2 Carry out the work safely near live electrical apparatus as non-electrical worker.	2.1	OHS principles and practices to reduce the incidents of accidents are identified in accordance with given instructions, requirements and/or established procedures.
	2.2	Working safely and complying with all safety requirements for working near live electrical apparatus as a non-electrical worker are followed in accordance with given instructions and

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ELEMENT	PERFORMANCE CRITERIA	
		established routines/procedures.
	2.3	Processes for monitoring and reporting/referring hazards and OHS risks to the immediate authorised personnel for directions according to established procedures are followed.
	2.4	Non-routine events are referred to the immediate authorised personnel for directions according to established procedures.
	2.5	Unexpected events associated with working safely near live electrical apparatus as a non-electrical worker are responded to using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met.
3 Complete the work safely near live electrical apparatus as non-electrical worker.	3.1	Work schedule and anomalies for completion and checking of the work are reported to authorised personnel in accordance with established procedures.
	3.2	Processes for reporting to authorised personnel accidents and/or incidents are confirmed in accordance with established procedures.
	3.3	Requirements for returning work permit(s) and/or access authorisation permits are confirmed.
	3.4	Appropriate personnel are notified of work completion according to established procedures.
	3.5	Works completion records, report forms/data sheets are completed accurately in accordance with given instructions and established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) Essential Knowledge and Associated Skills (EKAS): This describes the essential

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REQUIRED SKILLS AND KNOWLEDGE

skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of working safely near live electrical apparatus as non electrical worker.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-TEL14A Power Line Safety – Non Electrical Workers

Evidence shall show an understanding of power line safety – non electrical workers to an extent indicated by the following aspects:

T1 Basic electrical principles encompassing:

- Fundamental units - basic measurement of units
- Electrical characteristics of material: characteristics of solid materials, insulators; terms electrical charge, electrical current, electromagnetic forces
- Nature of electrical current and change - basic rules of electrical current flow
- Sources of Electricity: basic fundaments of alternating current, direct current and single EMF source (induction)
- A simple circuit - circuit protection devices used on the network, effects of an open circuit, a closed circuit and a short circuit and earthing – using the ground as a form of conductor to return current back to a source
- Resistance - relationship between voltage and current and resistance (Ohms Law)
- Effects of current - physiological effects and protection for physiological effects; basic principle by which electrical current can result in the production of heat, light and electromagnetic fields and typical effects of current.
- Three phase and single phase power systems: star delta configurations, three phase star connections, relationship between line and phase voltages, three phase 4 wire systems - purpose of the neutral
- Consequences of short circuits - arc flash, ESI Protection schemes
- Magnetism - magnetic field patterns, concepts of electromagnetism, effects of electromagnetism and magnetic fields around straight conductors
- Hazards encountered in an ESI environment - touch and step potentials, electric shock, fire, chemicals, falls, safe use of tools and equipment.

T2 Transmission, distribution and rail power systems encompassing:

- Relationship between the transmission, distribution and rail/tram system within an overall power system - different organisations responsible for generation, transmission, distribution and rail/tram and, how they correlate and their functions
- Characteristics of a transmission, a distribution and a rail system - principal components, typical voltage levels and methods of transmission and distribution including grid type transmission systems, radial, parallel and ring main feeders
- Relationship between an overhead and underground supply systems within an overall power system - advantages/disadvantages, applications.
- Single line drawings and layouts - drawings and layouts of transmission and distribution systems including, radial, parallel and ring main feeders and the HV

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REQUIRED SKILLS AND KNOWLEDGE

equipment associated with substations

T3 Fundamentals for working safely near live electrical apparatus for non-electrical worker encompassing:

- Standards, guidelines/codes of practice, State/Territory/local government legislation, supply authority regulations and or enterprise requirements including relevant certification and licensing, applicable to working safely up to the defined "safe working zone" near energised electrical apparatus (inc. electrical powerlines) for non-electrical worker
- Definitions of terminologies - 'safe working zone', 'risk assessment', 'safe approach distances zones', 'safe working distances',' work permits', access authorisation permits', 'Technical standards', 'isolation procedures' and compliance requirements'
- OHS policies and procedures for working safely - duties of a safety observer, permit to work systems and isolation procedures, safe application of different types of tools and equipment and operation of mobile plant and machinery (e.g. EWP) near live electrical apparatus
- Techniques and precautions in undertaking different work functions and working safely up to the defined "safe working zone" near energised electrical apparatus (inc. electrical powerlines) for non-electrical worker (work functions that may be performed include, vegetation control, scaffolding, rigging, painting, and/or any other activity that requires working safely near live electrical apparatus by a non-electrical worker)

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the competency standard unit and must be read in conjunction with the Performance Criteria and the range statement of the competency standard unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all component parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment	**9.1)**
	Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment

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intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practiced. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit

9.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the "Assessment Guidelines – UET12". Evidence shall also comprise:

- A representative body of Performance Criteria demonstrated within the timeframes typically expected of the discipline,

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work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and range; and
- Apply sustainable energy principles and practices as specified in the Performance Criteria and range; and
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit to such an extent that the learner's performance outcome is reported in accordance with the preferred approach; namely a percentile graded result, where required by the regulated environment; and
- Demonstrate an appropriate level of employability skills; and
- Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures; and

- Demonstrated performance across a representative range of contexts from the prescribed items below:

Range of tools/equipment/materials/procedures/workplaces/other variables		
Group No	**The minimum number of items on which skill is to be demonstrated**	**Item List**
A	All of the following:	Confirmation of the "safe working zone" for Safe work and access near live Electrical Apparatus Identification of the relevant technical standards. Acts, regulations and codes/guidelines Identification of established (Enterprise) procedures
B	All of the following:	Confirmation of the principles of electricity,

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		the three phase power system, electric shock and resuscitation, power system Recognition of aerial voltage systems Identification of Low Voltage Aerial Circuits Identification of High Voltage
C	All of the following:	Procedures in the event of an incident Events constituting an incident Procedures for responding to incidents Hazard and risk assessment procedure Conduct Work-site Hazard Assessment Confirmation of essential components of Hazard Assessment Checks Applying Hazard Identification in Electrical Work Confirmation of the Basic Safety Principles for Work on Electrical works Hazard Identification and Risk Assessment Hazard Control Risk Assessment and Management (JSAs) Control The Hierarchy of Controls including Evaluation, Worksite Hazard and Risk

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		Assessment Checklist, Pre-job Hazard Assessment Check (HAC) Items, Planned Inspection and Pre-Work Hazard Risk Assessment Form
D	All of the following:	Use of work permits and/or authorisation permits Sustainable energy principles and practices Possible affects of weather conditions on working near electrical apparatus as a non-electrical worker
E	At least one occasion	Dealing with an unplanned event by drawing on essential knowledge and associated skills to provide appropriate solutions incorporated in the holistic assessment with the above listed items.

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to safely undertake actual work near live electrical apparatus

In addition to the resources listed above, in context of and specific resources for assessment, evidence should show demonstrated

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competency working below ground, in limited spaces, with different structural/construction types and method and in a variety of environments.

Method of assessment

9.4)

This Competency Standard Unit shall be assessed by methods given in Volume 1, Part 3 “Assessment Guidelines”.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this Competency Standard Unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and associated skills described in this unit.

Concurrent assessment and relationship with other units

9.5)

For optimisation of training and assessment effort, competence in this unit is not recommended to be assessed concurrently with any other unit.

Range Statement

RANGE STATEMENT

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

This Competency Standard Unit shall be demonstrated in relation to safe working so defined by relevant State or Territory regulatory agencies/bodies, local government legislation, Industry bi-partite body – Guidelines/Codes of Practices or other related requirements for Safe work and access near live Electrical Apparatus.

Work functions that may be performed, such as vegetation control, operation of cranes, elevating work platforms, excavators, concrete pumps etc, scaffolding,

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RANGE STATEMENT

rigging, painting, and/or any other activity that requires working safely and complying with requirements and/or established procedures near live electrical apparatus by a non-electrical worker/

Working safely up to the defined "safe working zone" near energised electrical apparatus (inc. electrical powerlines) for non-electrical worker including an understanding of risk assessment control measures that encompass job safety assessment but excluding any work that is or may be performed by other competent operatives within the defined "safe working zone".

Safe use of plant, equipment and tools within electrical environments including but not limited by the electricity supply infrastructure assets, infrastructure constructions and excavations including an understanding of safe approach distances zones/Safe Working Clearance, work permit(s) and/or access authorisation permits, technical standards and Industry Guidelines, rural applications, road construction, pavements and effect of inclement weather

The following constants and variables included in the element/Performance Criteria in this unit are fully described in the Definitions Section 1 of this volume and form an integral part of the Range Statement of this unit:

- Appropriate and relevant persons
- Appropriate authorities
- Assessing risk
- Authorisation
- Drawings and specifications
- Emergency
- Established procedures
- Hazards
- Identifying hazards
- Legislation
- Notification
- OHS practices
- OHS issues
- Permits and/or permits to work
- Work clearance systems

Unit Sector(s)

Not applicable.

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Competency Field

Competency Field **11)**

Entry Level – Cross Discipline Units.

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