



Australian Government

Department of Education, Employment and Workplace Relations

UEGNSG206B Perform routine maintenance on distribution pipeline facilities and equipment

Release: 1

UEGNSG206B Perform routine maintenance on distribution pipeline facilities and equipment

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This Competency Standard Unit covers the performance of routine maintenance of distribution pipelines, facilities and equipment.

This competency standard includes 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 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,

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 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.

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 OHS, environmental and sustainable energy policies and procedures related to the performing of routine maintenance of pipeline, 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 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

ELEMENT	PERFORMANCE CRITERIA
	and confirmed in working order
	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 maintenance on distribution 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 to the performing of routine maintenance of pipeline, facilities and equipment to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
	2.4 Routine maintenance of distribution facilities and equipment is carried out in accordance with

ELEMENT	PERFORMANCE CRITERIA
	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 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 Essential Knowledge and Associated Skills
	2.8 Ongoing checks of work quality are undertaken in accordance with given instructions and established procedures
3 Routine maintenance is completed and results recorded and notified	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 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

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 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.

KS01- G206B **Distribution pipeline maintenance**

G 3.2.51 Plan and prepare for pipeline inspection and testing (up to and including 1050kPa)
Evidence shall show an understanding of the requirements to plan and prepare for pipeline inspections and testing on a Gas Industry pipeline (Distribution), indicated by the following:

- Apply relevant OHS procedures and environmental requirements in relation to preparing for inspection and testing procedures on pipelines, facilities and equipment
- Review planning requirements and resources necessary to carry out inspection and testing procedures on pipelines, facilities and equipment
- Demonstrate knowledge of tools, instruments and equipment required for inspection and testing procedures on pipelines, facilities and equipment including high pressure stop off equipment, 312, bagtubes, squash off jacks & gauges
- Obtain and interpret various workshop manuals, part lists, checklists and specifications as required to undertake work on a variety of assets which include valves, filters, meters and regulators, pressure reliefs, flanges and fittings, markers and signs.
- Undertake leakage surveys and location of facilities and equipment
- Locate and discuss the use of appropriate emergency equipment.

G 3.2.52 Secure facilities/equipment prior to inspection and testing of pipelines, facilities and equipment (up to and including 1050kPa)
Evidence shall show an understanding of the requirements to

secure facilities and equipment for inspection and testing of pipelines, facilities and equipment on a Gas Industry pipeline indicated by the following:

- Discuss the requirements for safety plans and non-routine procedures
- Identify precautions and concerns relevant to the inspection and testing being carried out
- Undertake risk assessments and entry permits as required
- Adhere to procedures, OHS, legislative and environmental requirements.
- Demonstrate procedures to safely isolate, depressurise, tag and lockout facilities and equipment which include valves, filters, meters and regulators, pressure reliefs, flanges and fittings, markers and signs

G 3.2.53 Inspect and test low, medium and secondary pipelines, facilities and equipment (up to and including 1050kPa) in accordance with procedures, OHS and environmental requirements

Evidence shall show an understanding of the requirements to inspect and test pipelines, facilities and equipment in accordance with procedures, OHS and environmental requirements, indicated by the following:

- Identify types of pipeline, facilities and equipment to be inspected and tested
- Discuss types of faults and their characteristics that may be encountered during inspection and testing procedures of pipelines, facilities and equipment
- Identify characteristics of the operating capabilities and limitations of tools and equipment used to inspect and test pipelines, facilities and equipment
- Carry out inspection and testing of pipelines, facilities and equipment in accordance with procedures, ohs and environmental requirements.
- Check alignments, measurements and materials to design, specifications and drawings

G 3.2.54 Correctly diagnose and assess faults of pipelines, facilities and equipment (up to and including 1050kPa)

Evidence shall show an understanding of the requirements to correctly diagnose and assess faults of low, medium and secondary pipeline, facilities and equipment, indicated by the following:

- Demonstrate methods available for fault finding and trouble shooting to determine what maintenance is required.

- Evaluate the condition of operational systems and equipment for safety and serviceability
- Use tools and testing equipment which include gauges, analysers, measuring equipment, destructive and non destructive testing equipment in accordance procedures
- Identify follow up maintenance requirements
- Communicate and document the required findings/actions using appropriate reporting and recording systems

G 3.2.55 Plan and prepare for routine maintenance on pipelines, facilities and equipment (up to and including 1050kPa)
Evidence shall show an ability to plan and prepare for routine maintenance of high pressure pipelines, facilities and equipment on a Gas Industry pipeline (Distribution), indicated by the following:

- Identify hazards and explain the relevant OHS procedures and environmental requirements that require implementation prior to and during repair work
- Identify the types of problems and faults that may require repair
- Identify maintenance work to be carried out, the required equipment and materials and the relevant manufacturer's specifications and procedures including relevant plans, drawings and written information required to perform maintenance
- Identify OHS and environmental requirements applicable to the work area
- Identify procedures, persons, equipment and processes required for repair work and plan the coordination of these resources
- Obtain required work permits
- Locate and secure emergency equipment and ensure all persons are familiar with emergency plans.
- Prepare equipment including adjustments and calibration to ensure high performance operation.
- Obtain, interpret and use the relevant technical drawings, plans and specifications during the preparation and planning of repair work

G 3.2.56 Secure work area prior to maintenance of pipelines, facilities and equipment (up to and including 1050kPa)
Evidence shall show an understanding of the requirements to secure work areas prior to maintenance of low, medium and secondary pipelines, facilities and equipment on a Gas Industry pipelines (Distribution), indicated by the following:

- Identify and obtain required permits
- Complete risk assessments and work permits as required
- Prepare and secure work area in accordance with OHS and environmental requirements. Include barriers, fencing, tags, notices and locking devices
- Locate and use appropriate emergency equipment.
- Identify requirements for, and use of, work permits, safety plans, non-routine procedures and safety checklists
- Implement and adhere to procedures, OHS and environmental requirements to ensure a safe worksite is established and maintained
- Prepare equipment for repair work ensuring it is depressurised, tagged and locked out
- Undertake routine checks and review documentation of facilities/equipment and discuss overall repair process
- Verify that facilities and equipment are safe for repair work to commence

G 3.2.57 Perform routine maintenance on pipelines, facilities and equipment (up to and including 1050kPa)

Evidence shall show an understanding of performing routine maintenance on pipelines, facilities and equipment for a Gas Industry pipelines (Distribution), indicated by the following:

- Demonstrate different types of maintenance procedures appropriate for pipelines, facilities and equipment which includes valves, filters, meters and regulators, pressure reliefs, flanges and fittings, markers and signs
- Undertake maintenance procedures relevant to required work
- Use tools, instruments and all other equipment safely and effectively during the required maintenance tasks
- Undertake routine maintenance following manufacturer's specifications OHS requirements and procedures in an efficient and effective manner.

G 3.2.58 Notify completion of work on pipelines, facilities and equipment (up to and including 1050kPa)

Evidence shall show an understanding of the notification of the completion of work on high pressure pipelines, facilities and equipment, indicated by the following:

- Review procedures for documenting and recording maintenance results
- Notify the relevant authorities in relation to completion of work in accordance with procedures
- Complete maintenance records including parts used, further maintenance requirements and time of next

service

- Clean up work area equipment, tools and materials
- Complete and process documentation when the work is completed
- Record and complete amendments to drawings and plans as required
- Record and report system condition in accordance with procedures.
- Sign off risk assessments and work permits as required by procedures including cancelling and signing off relevant work permits on completion of work

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.

**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, policies 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	Perform risk assessments Interpret technical drawings and symbols Ensure emergency response procedures in place Communicate with authorities and stakeholders Coordinate resources Obtain work permits Use and interpret Dial Before You Dig reports
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 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 nylon Practical application of AS3723 Installation and Maintenance of plastic pipe systems
E	At least 2	Steel pipeline coating repair Steel pipeline coating testing (Jeeper) Steel, field joint coating
F	All	Isolate, vent and purge gas

		pipeline systems Operation of gas detector Operate service locator Where relevant, calculate nitrogen volume needed
G	At least 2	High pressure stop off 312 Bagtube Squash off jacks Squash off pliers
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 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**

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

UEENEEE101 Apply Occupational Health and Safety
A 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 performing routine maintenance on distribution 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 (3)

Tools, equipment and testing devices (3)

Types of faults (3)

Documentation (3)

Reports (3)

Unit Sector(s)

Not applicable.

Competency Field

Competency Field	11)
	Distribution.