Australian Government

Department of Education, Employment and Workplace Relations

UEGNSG118A Select and commission equipment to meet pressure and temperature control specifications

Release: 1

UEGNSG118A Select and commission equipment to meet pressure and temperature control specifications

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

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 **3**)

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 **3.1**)

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.

License to practice	**3.1)**
	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)	**2)**
Competencies	**2.1)**
	Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed:
	Nil

Employability Skills Information

Refer to the Evidence Guide

Elements and Performance Criteria Pre-Content

5) 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

ELEMENT		PERFORMANCE CRITERIA	
			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 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

ELEMENT	PERFORMANCE CRITERIA	
	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, using acquired Essential Knowledge and Associated Skills, according to requirements
	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
	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

6) 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. The extent of the essential knowledge and associated skills (EKAS) required is given in Volume 2 - Part 2.2 EKAS. It forms an integral part of this unit.

G 4.1.5	Interpreting Gas Industry drawings
G 6.1.1	Concepts and skills for Gas Industry supervisors
G 6.1.2	Management information required for Gas Industry supervisors
G 6.1.3	Commission/decommission pipelines and cathodic protection principles for Gas Industry supervisors
G 6.1.4	Communication for utilities industry supervisors
G 6.1.5	Pressure and temperature control equipment
G 6.1.6	Project management

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 Training Package.

Critical aspects of evidence required

8.**2**)

Before the critical aspects of evidence are considered all

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to demonstrate competency in this unit

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 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:

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	At least 2	Gas systems: Transmission and distribution pipelines Storage facilities

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		Underground storage LPG installations Tanker and storage facilities
B	At least 2	Gas characteristics: Temperature Chemical composition Pressures and pressure reduction 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 Work permits Company standard operation

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		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

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 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 key

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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 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.

UEGNSG117A	Plan and implement the data acquisition and metering requirements of a gas system
UEGNSG119A	Manage workplace risk
UEGNSG120A	Manage gas system environmental compliance
UEGNSG121A	Prepare and design specifications for a gas system
UEGNSG115A	Manage gas systems projects
UEGNSG122A	Manage a customer service gas business unit
UEGNSG123A	Manage financial resources
UEGNSG116A	Manage physical resources

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Key Competencies **8.6)**

Evidence that particular key competencies have been achieved within this Unit is in the context of the following Performance Criteria of evidence. See Volume 2, Part 4 for an explanation of Key Competencies and levels of this Training Package.

Key Competencies	**Example of Application**	**Performance Level**
How are ideas and information communicated within this competency?	Refer to the following Performance Criteria for examples of application: 1.2; 1.9; 3.6	3
How can information be collected, analysed and organised?	Refer to the following Performance Criteria for examples of application: 1.2; 1.5; 2.7; 3.3	3
How are activities planned and organised?	Refer to the following Performance Criteria for examples of application: 1.7; 1.8	2
How is team work used within this competency?	Refer to the following Performance Criteria for examples of application: 1.2; 1.4; 1.7; 1.9	2
How are mathematical ideas and techniques used?	Refer to the following Performance Criteria for examples of application:	N/A
How are problem solving skills applied?	Refer to the following Performance Criteria for examples of application: 2.8	2
How is use of technology applied?	Refer to the following Performance Criteria for examples of application:	2
	3.2; 3.3; 3.4	

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Skills Enabling Employment **8.7)**
Evidence that competency in this unit incorporates skills enabling employment is in the context of the following performance.

Skills for Employment		**Example of Application**
1	Developing and using skills within a real workplace	Refer to the following Performance Criteria for examples of application: All
2	Learning to learn in the workplace	Refer to the following Performance Criteria for examples of application: 1.2; 2.8
3	Reflecting on the outcome and process of work task	Refer to the following Performance Criteria for examples of application: 3.5; 3.6
4	Interacting and understanding of the context of the work task	Refer to the following Performance Criteria for examples of application: 1.2; 1.9
5	Planning and organising the meaningful work task	Refer to the following Performance Criteria for examples of application: 1.7; 1.8
6	Performing the work task in non-routine or contingent situations	Refer to the following Performance Criteria for examples of application: 2.8

Range Statement

RANGE STATEMENT

7) 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 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

Literacy and numeracy skills

Literacy and numeracy skills	**2**.**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

Competency Field

Competency Field	**4**) Cross discipline.