



Australian Government

Department of Education, Employment and Workplace Relations

UEGNSG505A Use control centre systems to monitor and control gas infrastructure

Release: 1

UEGNSG505A Use control centre systems to monitor and control gas infrastructure

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor 1)

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 3)

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 3.1)

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.

Pre-Requisites

Prerequisite Unit(s) 2)

Competencies 2.1)

To minimise incidents related to safe systems of work, entry into this unit requires at a minimum that an individual has demonstrated or possesses a gas industry or relevant technical engineering discipline competencies of at least AQF level 3. It is intended that an individual will be expected to perform with a large degree of autonomy in decision-making, whilst in an individual environment. This may include immediate response to protect human life, adverse effect on safety, security of supply or the integrity of the assets.

NOTE: Typically the following disciplines provide direct entry; electrical or instrumentation, fitting and turning or mechanical trade or marine engineering technologist. Where an individual does not possess or demonstrate the requisite entry requirement, an equivalent bridging program shall be used to ensure equivalence of entry.

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 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 infrastructure	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, established

ELEMENT	PERFORMANCE CRITERIA
	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

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 using control centre systems to monitor and control gas infrastructure. 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 2.1.1 Working in the gas sector
- G 2.1.4 Apply relevant OHS regulations, policies and procedures
- G 2.1.5 Maintain a safe, clean and healthy workplace
- G 2.1.9 Respond to emergency and accident situations
- G 2.1.12 Communicate in the workplace
- G 2.1.13 Communicate effectively in a team
- G 2.1.14 Read and interpret workplace documents
- G 4.1.1 Operating and supervising in the Gas Industry
- G 4.1.2 Understand the effective operation of Gas Industry plant and equipment and materials
- G 4.1.3 Communicating in the Gas Industry at a supervisory level
- G 4.1.4 Gas Industry products and services
- G 4.1.5 Interpreting Gas Industry drawings
- G 4.1.7 Complete Gas Industry reports and documentation
- G 4.1.8 Use a personal computer
- G 4.1.10 Understanding security breach procedures
- G 4.1.11 Emergency manual

REQUIRED SKILLS AND KNOWLEDGE

- G 4.1.14 Environmental and cultural issues
- G 4.1.17 Pipeline systems knowledge
- G 4.1.18 Problem solving for Gas Industry supervisors

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.

Critical aspects of evidence required to demonstrate competency in this

8.2)

Before the critical aspects of evidence are considered all prerequisites shall be met.

EVIDENCE GUIDE

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 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, policies 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	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

EVIDENCE GUIDE

		<p>station function including identification of abnormal conditions of stations and reporting</p> <p>Working knowledge of pipeline operational parameters</p> <p>Respond correctly to alarms</p> <p>Operation of SCADA and other associated information systems</p> <p>Communicate effectively in the workplace</p> <p>Operating communications equipment</p> <p>Interpret technical drawings and symbols</p> <p>Emergency Response procedures</p> <p>Work utilising relevant OHS legislation, regulations, codes of practice, policies and procedures</p> <p>Maintain a safe and clean workplace</p> <p>Apply planning skills</p> <p>Fault and incident reporting and follow up process</p>
B	At least 3	<p>Operation and or monitoring of:</p> <ul style="list-style-type: none"> • 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

EVIDENCE GUIDE

		systems <ul style="list-style-type: none"> • 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

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 Key Competencies.

EVIDENCE GUIDE

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.

BSBFLM405A Implement operational plans

BSBCMN411A Monitor a safe workplace

Key Competencies

8.6)

Evidence that particular Key Competencies have been achieved within this Competency Standard 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
	1.1; 1.2; 1.4; 1.7; 1.8; 2.3; 2.4; 2.5; 2.7; 2.8; 3.6; 3.7; 3.8	
How can information be collected, analysed and organised?	Refer to the following Performance Criteria for examples of application: 2.6	1

EVIDENCE GUIDE

How are activities planned and organised?	Refer to the following Performance Criteria for examples of application: 1.1; 1.3; 1.6	1
How is team work used within this competency?	Refer to the following Performance Criteria for examples of application: 1.1; 1.2; 1.4; 1.8; 2.3	1
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:	N/A
How is use of technology applied?	Refer to the following Performance Criteria for examples of application:	N/A

Skills Enabling Employment

8.7)
Evidence that competency in this unit incorporates skills enabling employment is in the context of the following performance. See Volume 2, Part 5 for definitions and an explanation of skills enabling employment.

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: 1.3; 2.3; 2.4; 2.5

EVIDENCE GUIDE

3	Reflecting on the outcome and process of work task	Refer to the following Performance Criteria for examples of application: 3.7; 3.8
4	Interacting and understanding of the context of the work task	Refer to the following Performance Criteria for examples of application: 1.1; 1.2; 1.4; 1.7; 1.8; 2.3; 2.4; 2.5; 2.7; 2.8; 3.6; 3.7
5	Planning and organising the meaningful work task	Refer to the following Performance Criteria for examples of application: 1.1; 1.2; 1.3
6	Performing the work task in non-routine or contingent situations	Refer to the following Performance Criteria for examples of application: 2.5

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 Competency Standard Unit shall/may 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

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 4 Writing 4 Numeracy 4

Competency Field

Competency Field 4)

Control centre.