



Australian Government

UEGNSG006A Use a portable gas detector to locate escape

Release 1

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.

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

UEGNSG132A Carry out basic work activities in a gas

Prerequisite Unit(s) 4)

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 detection device.

1.1 The need to initiate gas detection is identified by WHS/OHS requirements and established procedures.

1.2 The gas or vapour to be detected is established

ELEMENT**PERFORMANCE CRITERIA**

		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

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

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

REQUIRED SKILLS AND KNOWLEDGE

- 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
- 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 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, policies 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 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:

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

Competency Field

Competency Field **11)**

Support Services