



Australian Government

UEENEEM078A Manage compliance of hazardous areas

Release 3

UEENEEM078A Manage compliance of hazardous areas

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor

1)

1.1) Descriptor

This unit covers the explosion-protection aspects of ensuring that potentially explosive atmospheres, generated by production, processing or servicing activities, do not pose a hazard to persons, property or the environment.

This unit is directly equivalent to the Unit *2.14 Manage compliance of 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 job functions that incorporate responsibility for a hazardous area, such as a plant manager or owner of a business who has a hazardous area within their business premises.

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.

Licensing/Regulatory Information

1.2) License to practice

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 related to occupational health and safety.

Pre-Requisites

Prerequisite Unit(s) 2)

2.1) Competencies

Granting competency in this unit shall be made after or concurrently with confirming competency in general plant management at AQF 4 Example are (but not limited to):

PMASUP41 Develop plant documentation.
0A

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
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 possibility of explosive hazard.	1.1	Competent person or persons are engaged to provide advice on the nature and extent of any explosive hazard on the site.
		1.2	Measures are taken to ensure explosive hazards are identified and the area classified by competent person or persons in accordance with requirements.
		1.3	Arrangements are made to establish a verification dossier in accordance with requirements.
2	Establish explosion-protection strategies for site.	2.1	Competent person or persons are engaged to design the explosion-protection system and installation.
		2.2	Where applicable explosion-protection system and installation design is verified with statutory authority for compliance with requirements.

ELEMENT	PERFORMANCE CRITERIA
3 Implement explosion-protection strategies.	3.1 Competent person or persons are engaged to install explosion-protected equipment and wiring system.
	3.2 Procedures are implemented to ensure the explosion-protected equipment and wiring system installation is tested and inspected in accordance with requirements.
4 Establish and implement procedures for maintaining explosion-protection.	4.1 Competent person or persons are engaged to develop inspection/maintenance schedules, including the level and intervals for periodic inspections, for the explosion-protected equipment and wiring system.
	4.2 Procedures are developed to ensure periodic inspections; testing and maintenance are carried out to documented schedule and in accordance with requirements.
	4.3 Procedures are established for assuring data related to explosion-protection is filed in the verification dossier in accordance with requirements.

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 ensuring the safety of hazardous areas.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-EM078A Hazardous areas compliance requirements

Evidence shall show an understanding of hazardous areas compliance requirements to an extent indicated by the following aspects:

T1 Occupational Health and Safety responsibilities related to hazardous areas 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

REQUIRED SKILLS AND KNOWLEDGE

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 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 The responsibilities of a person managing activities or a site related to a hazardous area, encompassing:

- OHS procedures that are to be established;
- responsibilities for ensuring that a hazardous area is safe; and
- responsibilities and processes for establishing and maintaining a verification dossier.

T6 Explosion-protection strategies in relation to a hazardous area, encompassing:

- the process of classifying a hazardous area;
- various ways in which electrical systems /apparatus can be treated to prevent them from becoming an ignition source; and
- the cost of the different ways of treating electrical systems/apparatus associated with hazardous areas.

T7 Requirements for the maintenance of electrical systems associated with hazardous areas, encompassing:

- the type and grades of inspection of hazardous areas;
- maintenance programs for electrical explosion-protected systems/apparatus; and
- documentation requirements associated with maintenance procedures.

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 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 9.2)

EVIDENCE GUIDE

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 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 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:
 - Ensure the safety of hazardous areas as described in 8) and including:
 - A Applying relevant statutory requirements
 - B Establishing procedures for engaging competent persons
 - C Establishing and maintaining procedures for identifying potentially explosive hazards
 - D Establishing procedures for implementing and maintaining explosion-protection strategies

EVIDENCE GUIDE

E 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.

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 ensuring the safety of 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, competence development in this unit may be arranged concurrently with competencies in general plant management.

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 must 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	5	Writing	5	Numeracy	5
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Custom Content Section

Competency Field	5)
	Hazards