Australian Government

Department of Education, Employment and Workplace Relations

UEENEEM032A Overhaul and repair of explosion-protected equipment - flameproof enclosures

Release: 1

UEENEEM032A Overhaul and repair of explosion-protected equipment - flameproof enclosures

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers the explosion-protection aspects of overhauling and repairing explosion-protected equipment and the activities required of the responsible person. It requires the ability to establish and document the level of work required, arranging for the overhaul/repair to be carried, verify compliance of overhauled/repaired equipment and complete the necessary documentation. This unit is directly equivalent to the Unit 2.8 *Overhaul and repair of explosion-protected equipment* 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 formally-acquired competencies applying to electrical, electronic, and/or mechanical equipment repair workshop supervisory job function. It is suitable for employment-based programs under an approved contract of training.

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 work place for equipment that is disconnected from electrical supply. However practice in this unit is subject to regulations directly related to occupational health and safe and contracts of training such as new apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Granting competency in this unit shall be made after confirming competency in overhaul and repair of general low-voltage or extra-low voltage electrical/electronic equipment at AQF 3 or equivalent. Example are (but not limited to):
UEENEEG060B Evaluate performance of electrical machines
MEM15.20C Perform verification/certification or in-service inspection
For the full prerequisite chain details for this unit please refer to Table 2 in Volume 1, Part 2

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	Prepare for overhaul/repair of equipment.	1.1	Instructions on overhaul and/or repair are received and expected outcomes of the work confirmed with appropriate personnel.
		1.2	Certification documents for the equipment are sought and received in order to check that the equipment complies with the certification.
2	Establish the level of overhaul required.	2.1	Measurements, tests and inspections are carried out on the equipment in accordance with OHS and other established procedures.
		2.2	The extent of work to be done is determined from measurement, test and inspection results and their correspondence with original certification and the requirements of Standards.
		2.3	Specifications and instructions for the overhaul/repair work are documented in accordance with requirements.

ELEMENT	PERFORMANCE CRITERIA
3 Arrange overhaul/repair work.	3.1 Arrangements are made for the overhaul/repair work to be done in accordance with established procedures.
	3.2 A copy of overhaul/repair specifications and instructions is provided to personnel responsible for carrying out the work.
4 Verify that equipment complies with original certification.	4.1 Level of testing required to verify that overhauled/repaired equipment complies with original certification specifications is determined in accordance with requirements.
	4.2 Verification tests are conducted in accordance with established procedures.
5 Document overhaul/repair work.	5.1 Equipment marking is checked and marked where applicable, in accordance with original certification.
	5.2 Overhaul/repair work is documented in accordance with requirements stating that the equipment complies with the original certification.
	5.3 Documentation of the repair work is retained and a copy is issued with the equipment for inclusion in the verification dossier.

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 overhauling and repairing explosion protected equipment.
All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.
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.

2.22.1 Hazardous areas and explosion-protection

REQUIRED SKILLS AND KNOWLEDGE

	principles
2.22.2.1	Explosion-protected equipment Principles
2.22.2.2	Explosion-protected equipment Ex certification schemes
2.22.3	Flameproof (Ex'd') explosion-protection technique
2.22.4	Increased safety (Ex'e') explosion-protection technique
2.22.5	Non-sparking (Ex'n') explosion-protection technique
2.22.6	Intrinsic safety (Ex'i') explosion-protection technique
2.22.7	Pressurization (Ex'p') explosion-protection technique
2.22.8	Explosion-protection techniques for dusts
2.22.9	Common characteristics of explosion-protection techniques
2.22.13.1	Explosion protected equipment overhaul and repair General requirements
2.22.13.2	Explosion protected equipment overhaul and repair Overhaul and repair requirements specific to each explosion-protection technique

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.

EVIDENCE GUIDE

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 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:
  - Overhaul and repair explosion-protected equipment as described in 8) and including:

    A Following OHS procedures.

    B Interpreting certification documentation and Standards.

    C Measuring, testing and inspecting equipment for compliance with certification and Standards.

    D Specifying overhaul/repair work.

EVIDENCE GUIDE

E Documenting overhaul/repair work.

F Using quality systems.

G 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 overhauling and repairing explosion protected equipment.

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 competency development in this unit may be arranged concurrently with competence in the overhaul and repair of general low-voltage or extra-low-voltage electrical/electronic equipment.

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 shall be demonstrated in relation to overhaul of flameproof (Ex 'dI') explosion-protected enclosures only.

The following constants and variables included in the element/performance criteria in this unit are fully described in the 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	3	Writing	3	Numeracy	3

Custom Content Section

Competency Field **5**)

Hazards