



Australian Government

UEEHA0012 Supervise repair and overhaul of explosion-protected equipment type increased safety (Ex e)

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to plan and supervise the repair and overhaul of explosion-protected equipment type increased safety (Ex 'e'). It includes liaising with equipment users to establish and document the level of work required; writing specifications for the repair and overhaul and arranging for repairs to be carried out; verifying compliance of repaired and overhauled equipment; and completing all the required documentation. It is adopted from clause 2.22 of AS/NZS 4761.1:2018 Competencies for working with electrical equipment for hazardous areas (EEHA).

This unit applies to electrical equipment repair workshop supervisory job function, designated as the 'responsible person'.

Site-specific work permits maybe required to work in the hazardous environment. In addition, other permits may be required, such as confined space and to operate specific pieces of equipment such as elevated work platforms (EWPs) in various jurisdictions.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Pre-requisite Unit

UEEHA0003 Determine the explosion-protection requirements to meet a specified classified hazardous area

and

UEEEL0039 Design, install and verify compliance and functionality of general electrical installations

or

UEEEL0028 Conduct compliance and functional verification of electrical apparatus and existing circuits

or

UEEIC0048 Verify compliance and functionality of instrumentation and control installations

Competency Field

Hazards

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare for repair and overhaul of equipment

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** Repair facility quality assurance system is obtained, interpreted and applied
 - 1.2** Instructions on repair and/or overhaul are received and expected outcomes of the work confirmed with the user
 - 1.3** All documentation relevant to the equipment repair and/or overhaul is obtained, interpreted and applied
 - 1.4** Where adequate relevant equipment information is not available, steps taken to source such information are documented
 - 1.5** Agreement is made with the user for the repair and/or overhaul of Group II and III equipment to be completed in accordance with standards where adequate documentation is not available
 - 1.6** The common requirements for equipment repair and overhaul are ascertained from relevant standards and regulations and applied to the preparation for the work only where this arrangement is permitted
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- 2.1** Safe work methods are applied to measurements, tests and inspections carried out on the equipment to establish the extent of repair and/or overhaul
 - 2.2** The requirements, evaluation procedures and parameters of the type of equipment to be repaired and/or overhauled are ascertained from relevant standards and regulations and applied to establishing the extent of the work

2 Establish the level of repair/overhaul required

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|---|------------|--|
| | 2.3 | Measurement devices and instruments are maintained and calibrated in accordance with recognised practices |
| | 2.4 | The extent of work to be completed is established from measurements, tolerances and evaluation procedures and their correspondence with equipment documentation and the requirements of standards |
| | 2.5 | Specifications and instructions for the repair and/or overhaul work are documented ensuring compliance with original documentation, standards and user instructions |
| 3 Arrange repair and overhaul work | 3.1 | Arrangements are made for the repair and overhaul work to be completed in accordance with the specification and instructions, by an operative with the competencies specified in standards |
| | 3.2 | A copy of repair and/or overhaul specifications and instructions is provided to the operative responsible for doing the work |
| 4 Verify that equipment complies with original certification | 4.1 | Scope and level of testing and measurements required to verify that overhauled and/or repaired equipment complies with original certification is determined in accordance with manufacturers' documentation and standards requirements as applicable to an equipment group |
| | 4.2 | Verification tests and measurements are arranged, conducted and documented in accordance with equipment type standards and instruction manuals |
| | 4.3 | Results of verification tests and measurements are reviewed to ascertain whether they comply with original equipment documentation and/or agreement with the user |
| | 4.4 | Actions are taken to rectify any non-compliance identified through the verification tests and measurements |
| 5 Document repair and overhaul work | 5.1 | Equipment is marked to show it has been repaired and/or overhauled in accordance with standards and applicable to the equipment group |
| | 5.2 | Job report of the completed repair and/or overhaul is prepared in accordance with standards and submitted to the user for inclusion in their verification dossier |

- 5.3 Repair facility records are updated to include the job record in accordance with standards and quality system
- 5.4 The steps taken to obtain the certificate documents where adequate equipment documentation was not available is included in the repair facility records

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Supervising repair and overhaul of explosion-protected equipment type increased safety (Ex e) must:

- apply to the supervision of overhaul and repair of explosion-protected equipment
- be carried out under an approved quality management system
- include access to all relevant standards and liaison with end-users

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEEHA0012 Supervise repair and overhaul of explosion-protected equipment type increased safety (Ex e)

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- preparing for repair and overhaul work of equipment, including:
 - following quality assurance system procedures
 - gathering required documentation
- establishing the level of repair and overhaul required, including:
 - following safe work methods
 - examining equipment submitted for repair and overhaul using appropriately maintained measuring devices and instruments
 - documenting the specification for the repair and overhaul
- arranging repair and overhaul work, including:
 - selecting appropriately competent operatives to carry out repair and/or overhaul, including reclamation activities
 - providing operative with the repair and/or overhaul specifications
- verifying that equipment complies with original certification, including:
 - choosing the scope and level of tests and measurements required to verify whether the repaired and/or overhauled equipment complies with original documented requirements
 - arranging for verification of compliance tests and measurements to be carried out
 - reviewing results of verification tests and taking actions to rectify any non-compliance identified by the verification tests and measurements
- documenting repair and overhaul work, including:
 - marking equipment in accordance with standard requirements to show that equipment has been repaired
 - preparing job report of the completed repair and overhaul, including all items specified by standards and submitted to the user
 - updating the repair and overhaul undertaken in the repair facility records, including steps taken to obtain equipment documentation as required by standards.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- repair and overhaul of explosion-protected equipment (common requirements), including:
 - common requirements for repair and overhaul work of explosive-protected equipment encompassing:
 - equipment with documentation and without documentation
 - statutory requirements for repair facility and user
 - instructions for the user
 - instructions for the repair facility
 - identification of repaired equipment by marking encompassing:
 - marking information
 - symbols in accordance with standards requirements
 - other situations
 - requirements for the repair and overhaul of equipment with protection level (EPL) Ga
 - limitations and requirements for the repair and overhaul of equipment with type of protection special 's'
- repair and overhaul of explosive-protected equipment type increased safety 'e', including:
 - additional requirements for the repair and overhaul of equipment with type of protection Ex 'e' encompassing the following:
 - application
 - repair and overhaul requirements
 - reclamation
 - alterations and modifications
 - evaluation procedures and parameters encompassing:
 - general requirements
 - Ex 'e' motors
 - Ex 'e' enclosures
 - electrical equipment installed within ex 'e' enclosures
- repair and overhaul of explosive-protected equipment type non-sparking 'n', including:
 - additional requirements for the repair and overhaul of equipment with type of protection Ex 'n' encompassing:
 - application
 - repair and overhaul requirements
 - reclamation
 - alterations and modifications
 - evaluation procedures and parameters encompassing:
 - general requirements
 - Ex 'n' enclosures

- electrical equipment installed within Ex ‘n’ enclosures
- repair and overhaul of explosive-protected equipment type pressurisation ‘pD’, including:
 - additional requirements for the repair and overhaul of equipment with type of protection Ex ‘pD’ encompassing:
 - application
 - repair and overhaul requirements
 - reclamation
 - alterations and modifications
- repair and overhaul of explosive-protected equipment type encapsulation ‘m’, including:
 - requirements for the repair and overhaul of equipment with type of protection Ex ‘m’ encompassing:
 - application
 - repair and overhaul requirements
 - reclamation
 - alterations and modifications
- repair and overhaul of explosive-protected equipment type oil-filled ‘o’, including:
 - requirements for the repair and overhaul of equipment with type of protection Ex ‘o’ encompassing:
 - application
 - repair and overhaul requirements
 - reclamation
 - alterations and modifications
- repair and overhaul of explosive-protected equipment type powder-filled ‘q’, including:
 - requirements for the repair and overhaul of equipment with type of protection Ex ‘q’ encompassing:
 - application
 - repair and overhaul requirements
 - reclamation
 - alterations and modifications.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy

requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate tools and testing devices and personal protective equipment (PPE) currently used in industry
- safe work methods
- a certified quality management system
- documentation and record systems required of a workshop certified to undertake repair and overhaul of explosive-protected equipment
- relevant equipment standards and manufacturer's data
- equipment to be repaired/overhauled.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>