



Australian Government

UEEEL0004 Carry out basic repairs to electrical components and equipment

Release: 1

UEEEL0004 Carry out basic repairs to electrical components and equipment

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 repair and/or replace mechanical and electrical components of electrical apparatus.

It includes working safely, following written and oral instructions and workplace procedures, basic testing and techniques for dismantling and assembling apparatus, and disconnecting and reconnecting components

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0019 Fabricate, assemble and dismantle utilities industry components

Competency Field

Electrical

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to repair electrical apparatus

PERFORMANCE CRITERIA

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

1.1 Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures for a given work area are identified and applied

- 1.2 Existing WHS/OHS risk control measures and workplace procedures in preparation for work are followed
 - 1.3 Nature of electrical components and equipment repair is obtained from documentation and work supervisor to determine the scope of work to be undertaken
 - 1.4 Advice is sought from the work supervisor to ensure the work is coordinated effectively with others
 - 1.5 Sources of materials required for the electrical components and equipment work are determined in accordance with workplace routines and procedures
 - 1.6 Tools, apparatus and testing devices needed to carry out work are obtained and checked for correct operation and safety
- 2 **Repair electrical apparatus**
 - 2.1 Existing WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
 - 2.2 Need to test or measure live electrical work is determined in accordance with WHS/OHS requirements and, as required, conducted within workplace safety procedures
 - 2.3 Circuits/apparatus are checked and isolated in accordance with WHS/OHS requirements and workplace procedures
 - 2.4 Apparatus is dismantled in accordance with manufacturer guidelines and supervisor instructions
 - 2.5 Component parts are tagged during dismantling to ensure correct and efficient reassembly and are stored to protect against loss or damage
 - 2.6 Repairs are completed efficiently without damage to other components, electrical apparatus or circuits
 - 2.7 Apparatus is assembled in sequence with components parts placed, secured and connected in accordance with manufacturer guidelines and/or industry standard practices
 - 2.8 Referring unplanned events to supervisor for direction are followed in accordance with workplace procedures

	2.9	Repairs are carried out efficiently without unnecessary waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices
3 Complete and report electrical repair work activities	3.1	WHS/OHS work completion risk control measures and workplace procedures are followed
	3.2	Repaired electrical apparatus is prepared for inspection and testing by appropriate person/s in accordance with workplace procedures
	3.3	Work area is cleaned and made safe in accordance with workplace procedures
	3.4	Work supervisor is notified of repair work completion in accordance with workplace procedures

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.

- Carrying out basic electrical apparatus repairs must include at least the following:
- two different electrical apparatus, in which three different types of components are faulty:
 - one of which requires disconnecting and reconnecting internal wiring to affect repairs

Unit Mapping Information

This unit replaces and is equivalent to UEENEEG111A Carry out basic repairs to electrical components and equipment.

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 UEEEL0004 Carry out basic repairs to electrical components and equipment

Modification History

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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:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using of risk control measures
- applying sustainable energy principles and practices
- carrying out basic repairs to electrical apparatus, including:
 - following manufacturer service instructions for access to components
 - removing at least three different types of components specified in the work instructions
 - replacing components to manufacturer requirements
 - terminating internal wiring correctly
 - reassembling the apparatus correctly
 - testing apparatus operation
 - dealing with unplanned events in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- completing and reporting repair work activities
- implementing WHS/OHS workplace procedures and practices
- preparing to test and repair electrical apparatus
- repairing electrical apparatus in accordance with workplace procedures.

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:

- basic cable and conductor terminations, including:
 - application of connecting devices for conductors and terminals
 - continuity through connections and insulation resistance testing
 - general aspects and soldering involving pins on electronic components and stranded conductors carrying current up to 25 amperes (A)
 - insulation removal and replacement

- stress release on cables/conductors
- electrical workshop and metal cutting
- electrical workshop machines, including:
 - drilling operations
 - fixed position power tools
 - off-hand grinding safety and machine set-up
 - tooling used on drilling machines
 - twist drills features, sharpening and faults
- principles of metal cutting, including:
 - effects of coolants and cutting fluids
 - effects of cutting tool geometry
 - factors influencing the action of cutting tools
 - principles of chip formation
- selection of cutting tools, including:
 - cutting tool materials
 - factors influencing tool selection
 - identification and selection of carbides
 - milling cutting tool design
 - principles of chip control
 - turning cutting tool design
- metal cutting conditions, including:
 - conditions under which tools cut best
 - determining cutting data
- cutting tool defects, including:
 - causes of tool failure
 - identification of types of tool failures
- overcoming causes of tool failure
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- selection of cutting tools.

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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable 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 materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, relevant industry standards, codes of practice and operation manuals.

Links

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