



Australian Government

UEPMNT351 Test and commission electrical equipment

Release: 2

UEPMNT351 Test and commission electrical equipment

Modification History

Release 2. Minor release to update superseded pre-requisite units.

Release 1. This is the first release of this unit of competency in the UEP Generation Training Package.

Application

This unit involves the skills and knowledge required to conduct testing and commissioning of electrical wiring systems and equipment.

Commissioning and testing is the process of ensuring that all electrical wiring systems which includes cabling and associated devices such as switches, distribution boards, sockets and fittings and equipment in a power generation facility are meeting operational requirements.

Competency in this unit requires the ability to plan work, test wiring systems, test electrical equipment, commission electrical equipment and to report on all completed work tasks. Individuals will, in general, work under supervision in an electrical, electronic and/or mechanical equipment repair workshop or on site.

Power generation maintenance personnel are typically trained and authorised to receive permits to work.

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

Note: Workplace practice

The application of the skills and knowledge described in this unit of competency may require a licence or training permit to practice in the workplace, where work is carried out on gas and electrical installations. Additional and/or other conditions may apply under state and territory legislative and regulatory licensing requirements.

Pre-requisite Unit

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

UEECD0043 Solve problems in direct current circuits

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0003 Arrange circuits, control and protection for electrical installations

UEEEL0011 Evaluate performance of low voltage electrical apparatus

UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits

UEEEL0020 Solve problems in low voltage A.C. circuits

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

UEEEL0024 Test and connect alternating current (a.c.) rotating machines

UEEEL0025 Test and connect transformers

Competency Field

Maintenance

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan and prepare for work

PERFORMANCE CRITERIA

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

- 1.1** Requirements including scope of work and assigned roles are identified and confirmed with appropriate personnel or by site inspection, in accordance with workplace procedures
- 1.2** Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) regulations, legislative requirements, industry standards, codes of practice, manufacturers' specifications, environmental obligations and workplace procedures are reviewed in preparation for work
- 1.3** Resources are obtained and inspected for compliance with job specification
- 1.4** Relevant plans, drawings and manuals are selected and used, in accordance with workplace procedures
- 1.5** Correct materials and components for work are obtained and inspected, in accordance with workplace procedures, for compliance with job specification
- 1.6** Work is planned, sequenced and prioritised, in accordance with workplace procedures
- 1.7** Potential hazards are identified and risk control

		measures are selected and implemented, in accordance with workplace procedures
	1.8	Work area is prepared, in accordance with workplace procedures and requirements
2 Test electrical wiring systems	2.1	Isolations for work are confirmed, in accordance with workplace procedures
	2.2	Electrical wiring systems are tested using appropriate plans, drawings and manuals, in accordance with workplace procedures
	2.3	Electrical wiring systems, including enclosures and/or supports, are inspected in accordance with workplace procedures, prior to testing to ensure absence of any damage, defects and deterioration
	2.4	Fixed electrical wiring is tested, as required, and results are documented to confirm compliance with job specification
3 Test electrical equipment	3.1	Isolations are confirmed, where appropriate, in accordance with workplace procedures site requirements
	3.2	Electrical equipment is tested using appropriate plans, drawings and manuals, in accordance with workplace procedures
	3.3	Test conditions are confirmed, and equipment is inspected, in accordance with workplace procedures, to ensure absence of damage, defects and deterioration
	3.4	Electrical equipment is tested using appropriate testing techniques, in accordance with workplace procedures
	3.5	Electrical equipment test results are documented to confirm compliance with job specification
4 Commission electrical equipment	4.1	Isolations are confirmed, where appropriate, in accordance with workplace procedures and site requirements
	4.2	Electrical equipment is commissioned using appropriate plans, drawings and manuals, in accordance with workplace procedures
	4.3	Equipment is set up, in accordance with workplace procedures, operational requirements or manufacturers'

specifications

- 4.4 Testing and monitoring procedures are followed, and results are documented to ensure electrical equipment functions within manufacturers' specifications
- 4.5 Electrical equipment is commissioned, in accordance with workplace procedures
- 4.6 Final inspection on electrical equipment is carried out, in accordance with workplace procedures

5 Complete work

- 5.1 Work is completed and appropriate personnel are notified, in accordance with workplace procedures
- 5.2 Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures
- 5.3 Tools and equipment are cleaned, maintained and stored, in accordance with workplace procedures
- 5.4 Work completion details are finalised, 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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPMT351B Test and commission electrical equipment.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>

Assessment Requirements for UEPMNT351 Test and commission electrical equipment

Modification History

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Performance Evidence

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

- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- commissioning electrical equipment
- completing work as per scheduling requirements communicating with personnel
- determining permit to work requirements
- implementing legislation, industry standards, codes of practice and regulations
- inspecting and testing wiring systems
- inspecting, testing and monitoring electrical equipment
- planning testing and commissioning electrical equipment work
- selecting materials
- using manufacturers' specifications and manuals

Knowledge Evidence

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

- characteristics and operation of electrical equipment
- electrical equipment commissioning
- equipment and materials
- inspections of wiring systems and electrical equipment
- isolations
- legislation, industry standards, codes of practice and regulations

- manufacturers' specifications and manuals
- permit to work system
- power generation plant and equipment, and its location
- testing methods and techniques
- typical arrangements of power production plant
- WHS/OHS legislated requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- workplace documentation
- workplace policies and procedures

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions. Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment currently used in industry
- applicable documentation including workplace procedures, industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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