Australian Government

UEPMNT411 Diagnose and repair faults in complex electrical equipment

Release: 2

UEPMNT411 Diagnose and repair faults in complex 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 Minor release to update superseded pre-requisite units.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 diagnose and repair faults in complex and High Voltage (H.V.) electrical equipment, this may involve work being carried out with equipment online.

Diagnosing and repairing faults includes the inspection, testing and verification of the operation and reliability of complex and H.V. electrical equipment used in a power generation facility.

Competency in this unit requires the ability to plan work, verify complex electrical equipment faults, find complex electrical equipment faults, determine cause of complex electrical equipment fault, repair complex electrical equipment fault 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 general 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	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Plan and prepare for work	**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
2 Diagnose complex electrical fault	**2.1**	Normal performance and function of complex and High Voltage electrical equipment is reviewed, in accordance with workplace procedures
	2.2	Complex and High Voltage electrical equipment fault indicators and technical information are used, in accordance with workplace procedures, to diagnose and verify reported faults
	2.3	Complex and High Voltage electrical equipment symptoms are reproduced and monitored, if possible, in accordance with workplace procedures
3 Find complex electrical equipment fault	**3.1**	Isolations for work are confirmed, where appropriate, in accordance with workplace procedures
	3.2	Complex electrical equipment components, wires, cables, terminations and support fixings are inspected, in accordance with workplace procedures, for faults
	3.3	Diagnostic techniques are selected and used to determine complex electrical equipment faults, in accordance with workplace procedures
	3.4	Components are disconnected, in accordance with workplace procedures, to enable test measurements of suspected faulty components whilst ensuring no back feed readings occur
	3.5	Test and measurement instruments are used, in accordance with workplace procedures and manufacturers' specifications
4 Determine cause of complex electrical equipment fault	**4.1**	Appropriate personnel are consulted, if required, in accordance with workplace procedures
	4.2	Information from fault indicators and maintenance records are used, in accordance with workplace procedures

	4.3	Conclusions about the nature and cause of the fault from analysis of evidence is undertaken, in accordance with workplace procedures
5 Repair complex electrical equipment fault	**5.1**	Faulty, worn or damaged complex electrical equipment components are repaired, in accordance with workplace procedures
	5.2	Complex electrical equipment components disconnected for testing are reconnected, in accordance with workplace procedures, with terminations checked to ensure they are electrically and mechanically sound
	5.3	All faults are repaired, in accordance with workplace procedures
	5.4	Final inspection of complex electrical equipment is performed, in accordance with workplace procedures
6 Complete work	**6.1**	Work is completed and appropriate personnel are notified, in accordance with workplace procedures
	6.2	Work area is cleared of waste, cleaned, restored and secured, in accordance with workplace procedures
	6.3	Tools and equipment are cleaned, maintained and stored, in accordance with workplace procedures
	6.4	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 UEPMNT411B Diagnose and repair faults in complex

electrical equipment.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8