



Australian Government

UEPMNT417 Inspect electrical generators and diagnose faults

Release: 2

UEPMNT417 Inspect electrical generators and diagnose faults

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 Minor release to update superseded pre-requisite units.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 inspections and diagnose faults in electrical generators.

An inspection is a critical appraisal involving the examination, measurement, testing, gauging, and comparison of electrical generator components and parts. An inspection will determine if an electrical generator is in a safe and reliable working condition and if it conforms to the manufactures' specifications.

Competency in this unit requires the ability to plan work, carry out electrical generator inspections, evaluate and analyse inspection results, prepare remedial action plans and update documentation. 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

UEPMNT351 Test and commission electrical equipment

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** Maintenance and operating history of electrical generator is obtained and reviewed, in accordance with workplace procedures
- 1.2** Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) standards, legislative requirements, industry standards, codes of practice, manufacturers' specifications and workplace procedures are reviewed in preparation for work
- 1.3** Inspection of electrical generator is planned, sequenced and prioritised, in accordance with workplace and technical procedures
- 1.4** Resources are obtained and inspected for compliance with job specification
- 1.5** Relevant plans, drawings and manuals are selected and used, in accordance with workplace procedures
- 1.6** Potential hazards are identified and risk control measures are selected and implemented, in accordance

		with workplace procedures and inspection plan
2 Carry out generator inspection	2.1	Isolations are confirmed, where appropriate, in accordance with workplace procedures
	2.2	Electrical generator is inspected using appropriate manuals, drawings and manuals, in accordance with workplace procedures
	2.3	Additional tests or inspections, if required, are identified and completed, in accordance with workplace procedures
	2.4	Final inspection is carried out, in accordance with workplace procedures
3 Evaluate and analyse inspection results	3.1	Test or inspection results and data are analysed, in accordance with workplace procedures
	3.2	Specialist assistance is sought, if required, on completion of analysis
4 Prepare remedial action plan	4.1	Remedial action plan, if required, is prepared, in accordance with workplace procedures
	4.2	Remedial actions are followed up, in accordance with workplace procedures, and are checked by appropriate personnel
5 Update documentation	5.1	Relevant records and documentation are updated, in accordance with workplace procedures
	5.2	Reports and documentation are forwarded to appropriate personnel, 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 UEPMNT417B Inspect electrical generators and diagnose faults.

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 UEPMNT417 Inspect electrical generators and diagnose faults

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.

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:

- analysing inspection results and making recommendations
- applying Work, Health and Safety (WHS)/Occupational Health and Safety (OHS) requirements including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- carrying out generator inspection
- communicating with personnel
- determining permit to work requirements
- evaluating and analysing inspection results
- implementing regulations, industry standards, codes of practice and legislation
- inspecting electrical generators and diagnosing faults
- interpreting manufacturers' specifications and manuals
- planning for electrical inspection of generators and the diagnosis of fault work
- preparing remedial action plans
- updating documentation
- utilising data analysis techniques and tools
- working with inspection techniques and procedures

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:

- generator types and characteristics
- inspections of electrical generators and diagnosing faults

- isolations
- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- permit to work system
- plant and equipment, its location and operation
- 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

Companion Volume implementation guides are found in VETNet -

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