



Australian Government

UEPMNT442 Maintain wind turbine generator electrical systems

Release: 1

UEPMNT442 Maintain wind turbine generator electrical systems

Modification History

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 undertake scheduled maintenance of electrical systems in large scale wind turbine generators.

Maintenance is the process of optimising power generation plant and equipment operations through regular inspections and verification of electrical systems in large scale wind turbine generators.

Competency in this unit requires the ability to plan work, conduct maintenance on wind turbine generator electrical systems and complete all 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

UEPMNT371 Maintain large scale wind turbine generators

UEENEEG006A Solve problems in single and three phase low voltage machines

UEENEEE102A Fabricate, assemble and dismantle electrotechnology components

UEENEEE104A Solve problems in D.C circuits

UEENEEE105A Fix and secure electrotechnology equipment

UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

UEENEEG101A Solve problems in electromagnetic devices and related circuits

UEENEEG102A Solve problems in low voltage A.C. circuit

UEENEEG106A Terminate cables, cords and accessories for low voltage circuits

Competency Field

Maintenance

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan and prepare for work

2 Conduct maintenance on wind turbine generator electrical systems

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 are 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** Work is planned, sequenced and prioritised, in accordance with workplace procedures
- 1.6** Work area is prepared, in accordance with workplace procedures
- 2.1** Wind turbine generator equipment is replaced, if required, due to faulty operation or maintenance plan requirements, in accordance with workplace procedures and manufacturers' specifications
- 2.2** Documented service checklists, or similar are followed, in accordance with workplace procedures
- 2.3** Diagnostic testing and data from monitoring systems is used to identify those components requiring

maintenance

- 2.4 Wind turbine generator equipment is dismantled, if required, for maintenance, in accordance with manufacturers' specifications and workplace procedures
 - 2.5 Techniques are used to enable identification or reassembly of wind turbine generator equipment, in accordance with workplace procedures
 - 2.6 New components are obtained, if required, and are inspected for compliance with manufacturers' specifications
 - 2.7 Wind turbine generator equipment is tested, monitored and adjusted, if required, in accordance with workplace procedures and manufacturers' specifications
- 3 Complete work**
- 3.1 Work is completed and appropriate personnel are notified, in accordance with workplace requirements
 - 3.2 Work area is cleared of waste, cleaned, restored and secured, in accordance with workplace procedures
 - 3.3 Tools and equipment are maintained and stored, in accordance with workplace procedures
 - 3.4 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 UEPMT442A Maintain wind turbine generator electrical systems.

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 UEPMNT442 Maintain wind turbine generator electrical systems

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
- communicating with personnel
- completing work as per scheduled requirements
- conducting maintenance on Wind Turbine Generator (WTG) electrical systems
- determining work to permit requirements
- identifying new components for use
- implementing legislation, industry standards, codes of practice and regulations
- measuring, inspecting and recording Wind Turbine Generator (WTG) electrical system
- performing isolations
- planning for wind turbine generator electrical system work
- reassembling and readjusting equipment and components in wind turbine generator electrical systems
- undertaking diagnostic testing
- 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:

- analysis and diagnostic methods and tools
- component identification and replacement
- isolations

- legislation, industry standards, codes of practice and regulations
- maintenance of wind turbine generator electrical systems
- manufacturers' specifications and manuals
- measurement techniques
- permit to work system
- techniques for recognising wiring failure or potential for failure of wind turbine generator system and equipment
- test requirements of wind turbine generator electrical system
- WHS/OHS legislated requirements including:
 - emergency procedures
 - risk control measures
 - hazard identification
 - safe working practices
- wind turbine generator plant and its location at site
- wind turbine generator system types and characteristics
- 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.

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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.

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