



Australian Government

UEPMNT011 Maintain wind turbine electrical systems

Release: 1

UEPMNT011 Maintain wind turbine electrical systems

Modification History

Release 1. This is the first release of this unit of competency in the UEP Electricity Supply Industry - Generation Sector Training Package Release 2.0.

Application

This unit involves the skills and knowledge required to undertake scheduled maintenance of electrical systems in large scale wind turbines.

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

Competency in this unit requires the ability to plan work, conduct maintenance on wind turbine 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 trained and authorised to receive permits to work.

Licensing/Certification Information

The application of the skills and knowledge described within this unit may require a licence/registration to practice in the workplace. Other conditions may also apply under State and Territory legislative and regulatory licencing requirements which must be confirmed prior to commencing this unit. For this unit persons must have one of the following as an entry requirement:

- Unrestricted Electrical Licence issued in an Australian State or Territory, or
- Electrical Fitter Occupational Licence issued in an Australian State or Territory, or
- UEEEL0028 Conduct compliance and functional verification of electrical apparatus and existing circuits, or

UEEEL0039 Design, install and verify compliance and functionality of general electrical installations.

Pre-requisite Unit

Not applicable

Competency Field

Maintenance

Unit Sector

Electricity generation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

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| 1 Plan and prepare for work | 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' recommendations and specifications, environmental requirements 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 Conduct maintenance on wind turbine electrical system components | 2.1 Wind turbine electrical system components are replaced, as required, due to faulty operation or maintenance plan requirements in accordance with workplace procedures and manufacturers' recommendations and 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 electrical system components are dismantled, as required, for maintenance in accordance with manufacturers' recommendations and specifications |

and workplace procedures

- 2.5 Techniques are used to enable identification or reassembly of wind turbine electrical system components in accordance with workplace procedures
- 2.6 New components are obtained, as required, and are inspected for compliance with manufacturers' recommendations and specifications
- 2.7 Wind turbine electrical system components are tested, monitored and adjusted, as required, in accordance with workplace procedures and manufacturers' recommendations and 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 UEP Electricity Supply Industry - Generation Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEPMNT442 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 UEPMNT011 Maintain wind turbine electrical systems

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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 and performance criteria on at least two separate occasions and include:

- 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 in accordance with scheduled requirements
- conducting maintenance on wind turbine generator (WTG) electrical systems
- determining work to permit requirements
- identifying new components for use
- complying with regulations, industry standards, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- measuring, inspecting and recording WTG electrical system
- performing isolations
- planning for wind turbine electrical system work
- reassembling and readjusting equipment and components in wind turbine electrical systems
- undertaking diagnostic testing.

Knowledge Evidence

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

- analysis and diagnostic methods and tools
- component identification and replacement
- isolations
- maintenance of wind turbine electrical systems
- measurement techniques

- permit to work system
- regulations, industry standards, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- techniques for recognising wiring failure or potential for failure of wind turbine electrical system and components
- test requirements of wind turbine electrical system
- WHS/OHS legislated requirements, including:
 - emergency procedures
 - risk control measures
 - hazard identification
 - safe working practices
- wind turbine plant and its location at site
- wind turbine system types and characteristics
- workplace documentation
- workplace policies and procedures.

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 workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect 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, equipment and personal protective equipment (PPE) 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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