



Australian Government

UEPMNT007 Diagnose and repair mechanical systems faults in wind turbines

Release: 1

UEPMNT007 Diagnose and repair mechanical systems faults in wind turbines

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 diagnose and repair mechanical system faults in large scale wind turbines.

Diagnosing and repairing faults is the process of inspecting large scale wind turbines to identify problems and ensure repairs take place. The aim is to ensure that the overall delivery of the large scale wind turbines meets operational requirements.

Competency in this unit requires the ability to gather data, interpret data to establish theory about wind turbine mechanical system faults, repair wind turbine mechanical system faults and record wind turbine mechanical system faults. 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.

The application of the skills and knowledge described in this unit may require a licence/registration to practice in the workplace.

Other conditions may apply under state and territory legislative and regulatory licensing requirements which must be confirmed prior to commencing this unit.

Pre-requisite Unit

UEPMNT012 Maintain wind turbine mechanical systems

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 Gather data

- 1.1 Data logging information and error codes are accessed in accordance with workplace procedures
- 1.2 Sensory data on fault is gathered in accordance with workplace procedures
- 1.3 Documentation to support fault-finding processes are accessed in accordance with workplace procedures
- 1.4 Built-in fault indicators and error codes, where appropriate, are examined and interpreted
- 1.5 Circuit or system function and characteristics are determined by reference to circuit diagrams, specifications, schematics or in consultation with technical advisor

2 Interpret data to establish hypothesis about wind turbine mechanical system fault

- 2.1 Wind turbine mechanical system and performance parameter knowledge is applied to interpretation of fault data
- 2.2 Wind turbine mechanical system faults are verified or localised using appropriate techniques, tools and test equipment in accordance with workplace procedures
- 2.3 Priorities are set for testing or replacement of specific components, wiring and connections in the wind turbine mechanical system

3 Repair wind turbine mechanical system fault

- 3.1 Risk analysis is undertaken and is communicated to work team and appropriate personnel in accordance with workplace procedures
- 3.2 Safety precautions, including circuit isolations, physical barriers and other protective devices or systems are used, where appropriate, in accordance with workplace procedures
- 3.3 Tests are conducted to ensure wind turbine mechanical system fault has been isolated

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| | 3.4 | Wind turbine mechanical system parts likely to be cause of fault are removed and replaced with tested and operational parts |
| | 3.5 | Wind turbine mechanical systems are tested in accordance with workplace procedures to ensure correct operation |
| | 3.6 | Repairs to complex faults are escalated in accordance with workplace procedures, if required, to a technical adviser |
| 4 Record wind turbine mechanical system fault | 4.1 | Wind turbine mechanical system faulty components and parts are tagged, identified and stored in accordance with workplace procedures |
| | 4.2 | Faults are recorded 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 not equivalent to UEPMNT449 Diagnose and repair mechanical systems faults in wind turbine generators.

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 UEPMNT007 Diagnose and repair mechanical systems faults in wind turbines

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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
- determining permit to work requirements
- diagnosing and repairing faulty wind turbine mechanical system
- gathering data
- complying with regulations, industry standards, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- inspecting wind turbine mechanical system
- interpreting data to establish theory about wind turbine mechanical system faults
- performing wind turbine mechanical system testing
- recording wind turbine mechanical system faults
- repairing wind turbine mechanical system faults
- replacing faulty wind turbine mechanical system components and parts.

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:

- diagnosis and repair for wind turbine mechanical system faults
- permit to work system
- regulations, industry standards, legislative requirements, codes of practice, manufacturers' recommendations and specifications, and environmental requirements
- replacement of faulty components and parts

- report requirements
- test and inspection techniques
- WHS/OHS legislated requirements, including:
 - emergency procedures
 - hazard identification
 - risk control measures
 - safe working practices
- 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 it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate 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

Companion Volume implementation guides are found in VETNet -

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