



Australian Government

UEPMNT436 Test and commission wind turbine control systems

Release: 1

UEPMNT436 Test and commission wind turbine control 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 conduct testing and commissioning of wind turbine control systems.

Commissioning and testing is the process of ensuring that all aspects of the wind turbine control system which directs and regulates the behaviour of equipment, devices and systems is working efficiently and is meeting operational requirements.

Competency in this unit requires the ability to plan work, test wind turbine control system equipment, test wind turbine control system, commission wind turbine control system 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

UEPMNT362 Maintain wind turbine control systems

UEENEEG108A Troubleshoot and repair faults in low voltage electrical apparatus and circuits

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE104A Solve problems in D.C. circuits

UEENEEE105A Fix and secure electrotechnology equipment

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

UEENEEG006A Solve problems in single and three phase low voltage machines

UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits

UEENEEG063A Arrange circuits, control and protection for general electrical installations

UEENEEG101A Solve problems in electromagnetic devices and related circuits

UEENEEG102A Solve problems in low voltage A.C. circuits

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

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 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 for compliance with job specification
- 1.6** Plan for commissioning of wind turbine control system is developed, in accordance with workplace procedures, including sequencing and prioritising
- 1.7** Potential hazards are identified and risk control

- measures are implemented, in accordance with workplace procedures
- 1.8** Work area is prepared in accordance with workplace procedures
- 2 Test systems equipment**
- 2.1** Isolations are confirmed, where appropriate, in accordance with workplace procedures
- 2.2** Wind turbine control system equipment is visually inspected to ensure absence of any damage, defects or deterioration, in accordance with workplace procedures and commissioning plan
- 2.3** Wind turbine control system equipment is tested, in conjunction with other related systems and equipment, to ensure correct operation, in accordance with workplace procedures and commissioning plan
- 2.4** Wind turbine control system wiring system is checked and tested, in conjunction with other related systems and equipment, in accordance with workplace procedures and commissioning plan
- 3 Test system**
- 3.1** Isolations are confirmed, where appropriate, in accordance with workplace procedures
- 3.2** Wind turbine control system is visually inspected to ensure absence of any damage, defects or deterioration, in accordance with workplace procedures and commissioning plan
- 3.3** Wind turbine control system is tested using appropriate plans, drawings and manuals, in accordance with workplace procedures and commissioning plan
- 3.4** Wind turbine control system is tested, in conjunction with other related systems and equipment, in accordance with workplace procedures and commissioning plan
- 3.5** Wind turbine control system test results are interpreted and documented, in accordance with workplace procedures, to confirm compliance with commissioning plan
- 4 Commission system**
- 4.1** Isolations are confirmed, where appropriate, in accordance with workplace procedures
- 4.2** Wind turbine control system plant and equipment is set up, in accordance with workplace procedures, to meet

operational requirements and manufacturers' specifications

- 4.3** Wind turbine control system is set up, in accordance with workplace procedures, to meet operational requirements and manufacturers' specifications
- 4.4** Wind turbine control system plans, drawings and manuals are used, in accordance with workplace procedures and commissioning plan
- 4.5** Wind turbine control system equipment is commissioned, in accordance with workplace procedures and commissioning plan
- 4.6** Faulty wind turbine control system equipment is repaired, or reported, in accordance with workplace procedures
- 4.7** Final inspection is carried out, in accordance with workplace procedures

5 Complete work

- 5.1** Wind turbine control system commissioning is completed, and appropriate personnel are notified, in accordance with workplace procedures
- 5.2** Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures
- 5.3** Tools and equipment are maintained and stored, in accordance with workplace procedures
- 5.4** 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 UEPMNT436A Test and commission wind turbine control 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 UEPMNT436 Test and commission wind turbine control systems

Modification History

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:

- 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
- determining permit to work requirements
- implementing legislation, industry standards, codes of practice and regulations
- inspecting and testing wind turbine control system wiring
- interpreting technical drawings, manufacturers' specifications and manuals
- planning for testing and commissioning of wind turbine control systems work
- selecting materials
- testing wind turbine control system using test and measurement instruments commissioning wind turbine control system
- testing, inspect and monitor wind turbine control systems equipment
- using data analysis techniques and tools
- utilising tools and equipment

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:

- equipment and materials
- isolations
- layout of wind farm plant, and operation of equipment

- legislation, industry standards, codes of practice and regulations
- manufacturers' specifications and manuals
- permit to work system
- test and measurement instruments
- typical arrangements of wind farm power production plant
- WHS/OHS legislated requirements including:
 - emergency procedures
 - risk control measures
 - hazard identification
 - safe working practices
- wind farm control systems and equipment
- wind turbine control system commissioning
- wind turbine control system tests
- wiring system tests
- 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.

Links

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