Australian Government

Assessment Requirements for UEERE0047 Solve problems in wind energy conversion systems (WECS) rated up to 10 kW

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- understanding the nature of the problem
- using established routines to solve apparatus problems
- providing viable solutions to apparatus problems
- documenting justification for the solutions used
- dealing with unplanned events
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including the use of risk control measures
- applying sustainable energy principles and practices
- checking isolation of circuits/machines/systems
- coordinating work with relevant person/s
- determining live electrical testing/measurement requirements
- identifying and accessing materials, tools, equipment and testing devices
- solving problems in wind energy conversion systems (WECS).

Knowledge Evidence

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

- types, construction and operating features of small WECS, construction and operating features to the extent indicated by the following aspects:
  - basic operation of lift and drag type WECS
  - characteristics of WECS in terms of power and torque, efficiency (power and output co-efficient), solidity and tip speed ratio
  - major categories and sub-categories of WECS
  - advantages and disadvantages of each type of WECS
  - suitable materials for the construction of WECS taking into consideration fatigue stresses

and environmental conditions such as salt air, humidity and ice
- typical system configurations and components for stand-alone power systems and water pumping
- strategies and/or mechanisms to control mechanical stresses on the WECS in gale force winds and power output for battery charging
- appropriate types of WECS for a particular application
- problem-solving techniques
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures encompassing:
  - power output for battery charging
  - water pumping.

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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable 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
- resources that reflect current industry practices in relation to solving problems in WECS
- applicable documentation, including workplace procedures, 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=b8a8f136-5421-4ce1-92e0-2b50341431b6