



Australian Government

Assessment Requirements for UEERE0035 Install ELV stand-alone photovoltaic power systems

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 and performance criteria on at least one occasion and include:

- assessing customer energy requirements, efficiency improvements and site limitations
- reading and interpreting drawings related to and apparatus locations and circuit connections
- placing and securing system components accurately
- maintaining fire integrity
- connecting system components to comply with requirements
- testing system operation and verifying compliance with standards and job specifications
- completing necessary documentation, including handing over system operational documents to the customer and informing customer of system operation, routine maintenance and limitations
- 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
- conducting quality checks during installation
- coordinating work with relevant person/s
- determining live electrical testing/measurement requirements
- identifying and accessing materials, tools, equipment and testing devices
- installing and setting up stand-alone extra-low voltage (ELV) photovoltaic (PV) power systems.

Knowledge Evidence

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

- stand-alone ELV PV systems, including:
 - PV array installation requirements encompassing:
 - WHS/OHS requirements and methods for working on roofs

- common methods of roof construction (rafters and tile battens) and methods to ensure integrity of waterproofing
- common types of roof-mounted and free-standing PV array frame construction and methods of tilt angle adjustment
- fixing methods for different roof types
- array mounting methods for north orientation roof sections and non-north facing roof sections
- aesthetic considerations in choosing an appropriate array location and type of mounting
- the mounting and fixing methods for at least one type of domestic available building integrated PV product
- electrical PV array installation requirements encompassing:
 - methods used in wiring and connecting PV arrays in accordance with Australian Standards AS/NZS 4509 Stand-alone power systems and AS 5033 Installation and safety requirements for photovoltaic (PV) arrays
 - considerations involved in wiring of series connected PV modules in order to minimise power losses due to shading
 - PV array wiring diagram, including the placement of blocking and bypass diodes
 - considerations involved in choosing the location of associated system equipment, including regulators and direct current (d.c.) control board
 - cable route from PV array/s to regulators so as to minimise the route length to battery
- system installation and maintenance encompassing:
 - installation work on a PV power system in accordance with relevant standards and WHS/OHS guidelines
 - correct isolation and shutdown procedures prior to carrying out maintenance tasks
 - routine maintenance tasks on PV arrays
 - required vegetation control to remove or reduce shading or soiling on a PV array
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant workplace documentation
- relevant 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 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
- 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>