



Australian Government

Assessment Requirements for UEERE0081

Install photovoltaic systems to power conversion equipment

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.

This unit replaces and is not equivalent to UEERE0016 Install, configure and commission LV grid-connected photovoltaic power systems. Modifications include:

- Unit title changed
- Unit application updated
- Prerequisites changed
- Significant amendments made to Elements and Performance Criteria
- Range of conditions updated
- Significant amendments to Performance and Knowledge Evidence.

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 two occasions and include:

- installing photovoltaic (PV) array, including:
 - applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
 - verifying design and resolving any issues with designer
 - coordinating work with relevant person/s
 - determining and applying live testing, measurement and isolation requirements
 - reading and interpreting drawings/diagrams related to apparatus locations and circuit connections
 - applying appropriate array mounting methods for roof sections
 - placing and securing components
 - terminating wiring correctly and safety
 - testing and verification PV systems safely
 - connecting and commissioning in accordance with industry standards and regulations
 - completing documentation according to regulatory and industry standards.

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:

- PV array installation requirements, including:
 - WHS/OHS requirements and methods for working on roofs
 - methods to ensure integrity of building and waterproofing
 - common types of PV array mounting frame construction and fixing methods
 - methods of tilt angle adjustment
- electrical PV array installation requirements, including:
 - methods used in wiring and connecting PV arrays in accordance with relevant industry standards
 - considerations involved in:
 - wiring of PV arrays
 - the location of associated system equipment
 - cable route from PV array/s to power conversion equipment (PCE)
- system installation including:
 - installation of a PV array in accordance with relevant industry standards and WHS/OHS guidelines
 - correct isolation and shutdown procedures
 - required vegetation control to remove or reduce shading or soiling on a PV array
- PCE including:
 - types of PCEs used in renewable energy systems
 - the basic function of a PCE
 - PCE operation
 - PCE characteristics
- PV modules, including:
 - cell, module, array
 - efficiency
 - typical applications
 - mechanical and electrical features necessary for the long life of a PV module
- module characteristics including:
 - I-V curve, operating point, MPP, power and voltage temperature co-efficient, Standard Test Conditions (STC), nominal operating cell temperature (NOCT)
 - major ratings of a PV module from manufacturer's information or nameplate data
 - configuration of a typical PV array
 - the effect of partial shading of a PV module or array
- Industry Standard requirements for the verification of system components selection including:
 - balance of the system components, including cabling and wiring systems, circuit protection and isolation equipment for a grid-connected PV system
 - schematic diagrams of common grid-connected PCE circuit configurations, including metering arrangements, isolation and connection with respect to residual circuit devices

(RCDs)”

- system documentation required by industry standards
- relevant manufacturer specifications
- relevant industry standards
- relevant WHS/OHS legislated requirements
- relevant workplace documentation, policies, procedures and standards
- risk mitigation processes.

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, 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>