



Australian Government

**Assessment Requirements for UEEEL0027
Carry out low voltage electrical field testing
and report findings**

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 two separate occasions and include:

- applying relevant industry standards
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- applying sustainable energy practices
- carrying out inspection and testing, including:
 - selecting and setting up relevant testing/measuring instruments
 - using relevant testing techniques
 - using testing and measuring instruments
- completing electrical field inspection, testing and report findings
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- following workplace procedures and instructions
- preparing electrical field testing, including:
 - identifying work from reports and/or discussion with appropriate person/s
 - locating tools, equipment and testing devices.

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:

- advanced electrical testing and measuring devices, including:
 - testing/measuring devices and their application
 - circuit arrangement and safety procedures for connection of testing/measuring devices into a circuit
 - taking readings
 - storage, maintenance and care of testing/measuring devices

- measurement concepts, including:
 - notion of error, accuracy and resolution
 - sources of measurement error and uncertainties
 - instrument specifications and calibration certificates
 - test and measuring instrument safety certification levels and their application
- types of field measuring instruments and their application, including:
 - instrument meter movements and readouts, including moving coil, moving iron and dynamometer meter movements, liquid crystal display (LCD) digital and screen readouts
 - role of a microprocessor/controller in measuring instrument
- measuring low voltages (LV) and direct currents (d.c.) and alternating currents (a.c.), including:
 - LV and current measurement techniques embodied in microprocessor-based instruments
 - causes of inaccuracies and overcoming them
 - test instrument set-up and safety procedures
 - interpreting test readings
- measuring high voltages (HV) and d.c. and a.c. including:
 - HV and current measurement techniques embodied in microprocessor-based instruments
 - causes of inaccuracies and overcoming them
 - test instrument set up and safety procedures
 - interpreting test readings
- measuring fault levels and (earth) fault-loop impedance, including:
 - fault and fault-loop impedance measurement techniques embodied in microprocessor-based instruments
 - causes of inaccuracies and overcoming them
 - test instrument set-up and safety procedures
 - interpreting test readings
- measuring power, energy, reactive power, power factor and maximum demand, including:
 - power measurement techniques embodied in microprocessor-based instruments
 - causes of inaccuracies and overcoming them
 - test instrument set-up and safety procedures
 - interpreting test readings
- measuring power quality, including:
 - power measurement techniques embodied in microprocessor-based instruments
 - causes of inaccuracies and overcoming them
 - test instrument set-up and safety procedures
 - interpreting test readings, including power quality measurement, including waveform distortion, harmonics, power factor and transients
- power cable faults and fault detection techniques, including:
 - poor connection (high resistance)
 - open circuit

- insulation breakdown and arcing
- Varley and Murray loop tests
- pulse test
- echo test
- radio-based tests
- application and limitations of the various cable fault detection techniques, including:
 - cable fault detection techniques embodied in microprocessor-based instruments
 - causes of inaccuracies and overcoming them
 - test instrument set-up and safety procedures
 - interpreting test readings
- problem-solving techniques
- relevant industry standards and codes of practice for electrical inspection and testing
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications and operating instructions for tools and equipment
- relevant quality workplace procedures
- relevant sustainable energy practices
- relevant tools, equipment, resources and materials
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies, procedures and instructions.

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 simulated suitable 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 simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, relevant industry standards, 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>