



Australian Government

**Assessment Requirements for
UETDRDU017 Locate faults in
underground power cables**

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package Release 2.0.

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 two separate occasions and include:

- applying relevant legislation, regulations, standards, codes of practice and organisational workplace requirements, including:
 - work health and safety (WHS)/occupational health and safety (OHS)
 - safe approach distances
- identifying hazards, assessing risks, identifying, applying and monitoring control measures
- obtaining, inspecting and using relevant personal protective equipment (PPE)
- obtaining and signing on and off relevant work permits in accordance with workplace requirements
- interpreting and using drawings, diagrams and instructions
- using at least one (1) of the following cable fault pre location methods for low resistance faults:
 - time-domain reflectometry (TDR)
 - bridge method (e.g. Murray Loop)
- using at least one (1) of the following cable fault prelocation methods for high resistance faults:
 - arc reflection
 - voltage decay
 - impulse current
 - bridge (Murray loop)
- using at least one (1) of the following cable fault pinpointing methods:
 - acoustic detection using surge generator (thumper)
 - audio frequency pinpointing using twist method
 - fault sniffing
 - step voltage (pool of potential test or earth gradient method)
- locating at least three (3) of the following cable faults:
 - short circuit
 - open circuits

- high resistance
- earth and sheath
- humid and wet
- flashing
- analysing the testing results to determine the type and location of fault
- dealing with an unplanned event on at least one (1) occasion
- completing relevant work records, reports and documentation.

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:

- legislation, regulations, standards, codes of practice and organisational workplace requirements, including:
 - WHS/OHS
 - safe approach distances
 - working in confined spaces
 - trench safety
 - manual handling
- hazard, risk assessment and risk control requirements, including potential hazards
- types and application of PPE
- safe use of tools and equipment
- application, purpose and types of work permits
- events that constitute an incident or unplanned event
- procedures for responding to an unplanned event or incident
- work instruction requirements, including:
 - types of and layout of drawings
 - cable routes
 - manufacturer's instructions
 - workplace documentation procedures
- high voltage (HV) and low voltage (LV) paper insulated and polymeric cables, including:
 - types and sizes
 - construction, characteristics and properties
 - minimum bending radius
- cable fault location, including:
 - types of and causes of cable defects
 - types of and causes of cable faults
 - low resistance cable fault pre-location methods
 - high resistance cable fault pre-location methods
 - cable fault pinpointing methods

- advantages and disadvantages of different testing methods
- types of cable fault locating equipment
- use of cable fault locating equipment
- cable fault locating 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 workplace operational situations, where it is appropriate to do so.

Where this is not appropriate, assessment must occur in simulated conditions involving realistic and authentic activities that replicate operational 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:

- relevant and appropriate materials, tools, facilities, equipment and PPE currently used in industry for locating faults in underground power cables
- applicable documentation, including workplace requirements, relevant industry standards, 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=229bace1-b7bc-4653-9300-dffb13ecfad7>