



**Australian Government**

# **UETDRRC001 Install and maintain low voltage overhead services in a very remote community**

**Release: 1**

# **UETDRRC001 Install and maintain low voltage overhead services in a very remote community**

## **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.

## **Application**

This unit involves the skills and knowledge required to install and maintain low voltage (LV) overhead services in a very remote community in the electricity supply industry (ESI).

It includes the installation, maintenance and connection of LV overhead service cables and associated equipment between the customer's connection point and the network point of supply.

It also includes testing and commissioning, identifying and rectifying faults, and the repair and replacement of service cables.

All installation and maintenance of LV overhead service cables in very remote communities must be undertaken in an isolated environment other than for testing purposes.

The application of the skills and knowledge described in this unit may require a licence/registration to practice in the workplace.

Other conditions may also apply under state and territory legislative and regulatory licensing requirements which must be confirmed prior to commencing this unit.

## **Pre-requisite Unit**

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0046 Solve problems in single path circuits

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UETDREL001 Apply environmental requirements

UETDREL004 Operate plant and equipment in the vicinity of live electrical apparatus

UETDREL005 Work safely in the vicinity of live electrical apparatus

UETDRRC006 Perform low voltage electricity network switching in a very remote community

UETDRRC007 Solve problems in electrical network apparatus in a very remote community

UETDRRC008 Solve problems in low voltage electrical network circuits in a very remote community

## Competency Field

Remote Community

## Unit Sector

Not applicable.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Prepare to install and maintain LV overhead services**

### PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to be performed are referred to and confirmed
- 1.2** Work plan is obtained and confirmed in accordance with workplace requirements
- 1.3** Materials required for work are determined and obtained in accordance with work plan and workplace requirements
- 1.4** Hazards are identified, risks assessed and control measures identified and applied
- 1.5** Work permits are received and signed in accordance with workplace requirements
- 1.6** Plant, tools, equipment and personal protective equipment (PPE) required for work are determined, obtained and confirmed in working order
- 1.7** Overhead electrical distribution network is verified as isolated and earthed/short circuited in accordance with workplace requirements
- 1.8** Work is prioritised and sequenced for completion in accordance with workplace requirements
- 1.9** Worksite is prepared in accordance with work plan and workplace requirements
- 1.10** Traffic management plan is confirmed as being in place

- in accordance with workplace requirements
- 2 Carry out installation and maintenance of LV overhead services**
- 2.1** Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to be performed are applied and monitored
- 2.2** Lifting, climbing, working at heights and the use of plant, tools, equipment and PPE are carried out in accordance with workplace requirements
- 2.3** Hazard control measures are monitored in accordance with workplace requirements
- 2.4** Installation and maintenance of the LV overhead service is completed in accordance with work plan and workplace requirements
- 2.5** Earthing and short circuiting equipment is removed, permit signed off and overhead electrical distribution network is re-energised in accordance with workplace requirements
- 2.6** LV overhead service connections are tested in accordance with work plan and workplace requirements
- 2.7** Incidents or unplanned events are responded to in accordance with workplace requirements
- 2.8** Quality checks of work are undertaken in accordance with work plan and workplace requirements
- 3 Complete work and documentation**
- 3.1** Completed work is checked for compliance against the work plan and workplace requirements
- 3.2** Incidents or unplanned events are reported in accordance with workplace requirements
- 3.3** Worksite is rehabilitated, cleaned and made safe in accordance with workplace requirements
- 3.4** Plant, tools and equipment are cleaned, checked and returned to storage in accordance with workplace requirements
- 3.5** Surplus materials are returned to storage or disposed of in accordance with workplace requirements
- 3.6** Work records, reports and documentation are completed, and appropriate personnel notified in accordance with workplace requirements

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UET Transmission, Distribution and Rail Sector Training Package Companion Volume Implementation Guide.

## Unit Mapping Information

This unit replaces and is equivalent to UETTTDRIS36 Install and maintain low voltage services in remote communities (overhead).

## Links

Companion Volume Implementation Guides are found in VETNet -  
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>

# **Assessment Requirements for UETDRRC001 Install and maintain low voltage overhead services in a very remote community**

## **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)
- 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
- verifying power systems electrical distribution network has been isolated and earthed and short circuited in accordance with work plan and workplace requirements
- connecting low voltage (LV) overhead service cables, including at least two (2) of the following:
  - three phase \*
  - single phase
  - two phase
  - (\* must do)
- installing LV overhead service protection devices, including at least one (1) of the following:
  - service fuse
  - circuit breakers (pole)
  - service link
- testing LV overhead service cable connections, including all the following:
  - polarity test
  - phase rotation test
  - continuity test
  - voltage test
  - neutral loop impedance
  - insulation resistance
- restoring supply to LV electricity networks in accordance with work plan and workplace requirements

- working from at least one (1) of the following:
  - elevated work platform (EWP)
  - platform
  - ladder
- 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
- hazard, risk assessment and risk control requirements, including potential hazards
- types and application of PPE
- safe use of plant, tools and equipment
- application, purpose and types of permits
- types and characteristics of LV overhead service equipment, including:
  - connectors
  - insulation piercing connectors (IPCs)
  - service termination devices
  - fuse holders
  - fuses
  - service poles
  - point-of-attachment brackets
  - mains connection boxes
- construction manuals, system diagrams, plans and drawings
- types, sizes and characteristics of LV overhead service cables, including:
  - two, three and four-core cable
  - cable cross-sectional area of conductors
  - current ratings
  - cable insulation materials
- types of installation plant, equipment and tools, including:
  - EWPs
  - ladders
  - service cable puller and tension tool
  - stripping tools
  - ABC spanner and spreader
- installation techniques, including:

- consumer poles
- location of attachments
- methods of stringing, tensioning and terminating
- minimum clearances to assets, structures and the ground
- maximum span lengths and service cable tensions
- connection principles, including:
  - relevant electrical access permit
  - purpose and function of the multiple earth neutral (MEN) system
  - types of connection faults
  - causes and effects of incorrect and poor electrical connections
  - principles of loop impedance
  - reasons for and methods used to maintain standard phase sequencing
  - purpose and operation of service fusing
- testing and commissioning procedures, including:
  - inspection
  - equipment functionality
- use of independent earth for testing:
  - continuity
  - insulation testing
  - polarity, voltage and phase sequence
  - neutral integrity
  - meter function
- connection testing forms and documentation
- techniques for maintenance of overhead services, including:
  - inspection
  - types of faults
  - diagnosis and repair of faults
  - removing and replacing services and fuses
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident.

## 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 installing and maintaining overhead LV services in a very remote community
- applicable documentation, including workplace requirements, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

## Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>