



Australian Government

UETDRRC002 Install and maintain low voltage underground services in a very remote community

Release: 1

UETDRRC002 Install and maintain low voltage underground 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) underground services in very remote communities in the electricity supply industry (ESI).

It includes the installation and maintenance of LV underground services 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 underground 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 underground 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** Work is prioritised and sequenced for completion in accordance with workplace requirements
- 1.5** Hazards are identified, risks assessed and control measures identified and applied
- 1.6** Underground electrical distribution network is verified as isolated and earthed/short circuited in accordance with workplace requirements
- 1.7** Work permits are received and signed in accordance with workplace requirements
- 1.8** Plant, tools, equipment, and personal protective equipment (PPE) required for work are determined, obtained and confirmed in working order
- 1.9** Worksite is prepared in accordance with work plan and workplace requirements
- 1.10** Traffic management plan is confirmed as being applied

- in accordance with workplace requirements
- 2 Carry out installation and maintenance of LV underground 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 LV underground service is completed in accordance with work plan and workplace requirements
- 2.5** Earthing and short circuiting equipment is removed, permit signed off and underground electrical distribution network is re-energised in accordance with workplace requirements
- 2.6** LV underground services 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 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 UETTDRI37 Install and maintain low voltage services in remote communities (underground).

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 UETDRRC002 Install and maintain low voltage underground 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 underground electrical distribution network has been isolated and earthed/short circuited in accordance with workplace requirements
- connecting low voltage (LV) underground services cables, including at least two (2) of the following:
 - underground pillar/pit connection (three phase)*
 - underground pillar/pit connection (single phase)
 - underground to overhead connection
 - (* must do)
- installing LV underground service protection devices, including at least one (1) of the following:
 - fuse units
 - circuit breakers
 - service links
- testing LV underground service cable connections, including all of the following:
 - polarity test
 - phase rotation test
 - continuity test
 - voltage test
 - insulation resistance
 - neutral loop impedance
- re-energising underground electrical distribution network in accordance with workplace

requirements

- 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, sizes and characteristics of LV underground service cables, including
 - two, three and four-core cable
 - cable cross-sectional area of conductors
 - current ratings
 - fuse types and ratings
 - cable insulation materials
- types and characteristics of LV service associated equipment, including:
 - conduit
 - heat/cold-shrink materials
 - cable labelling
 - pillars and pits
- construction manuals, system diagrams/plans and drawings
- types of installation plant, tools and equipment
- installation techniques, including:
 - methods of laying cable
 - sand and slabbing
 - minimum depths to assets in ground
- jointing and terminating methods, including:
 - polymeric heat/cold-shrink materials
 - polymeric tape materials
 - insulation piercing connectors (IPCs)
 - energised and de-energised cables
 - connections to point of entry, fuse boxes, pillars and pits
- connection principles, including:
 - 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
- relevant electrical access permit
- testing and commissioning procedures, including:
 - pre-energisation tests, including continuity and insulation resistance
 - inspection
 - equipment functionality
 - use of independent earth for testing
 - polarity, voltage and phase sequence
 - neutral and phase identification
 - neutral integrity
 - commissioning test forms and documentation
 - meter function
- completing workplace documentation
- techniques for the maintenance of underground services, including:
 - inspection
 - types of faults
 - diagnosis and repair of faults
- 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 for installing and maintaining LV underground 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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