



Australian Government

UETDRIS011 Install and maintain low voltage underground services

Release: 1

UETDRIS011 Install and maintain low voltage underground services

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 the electricity supply industry (ESI).

It includes the connection, repair and replacement of service cables and hardware between the customer's connection point and the network point of supply.

It also includes the identification and rectification of faults and testing and commissioning requirements.

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 or network operator requirement 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

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

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

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0021 Solve problems in magnetic and electromagnetic devices

UETDREL001 Apply environmental requirements

UETDREL005 Work safely in the vicinity of live electrical apparatus

Competency Field

Industry Specific Cross Discipline

Unit Sector

Industry Specific Cross Discipline

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 work plan and workplace requirements
- 1.5** Hazards are identified, risks assessed and control measures identified and applied
- 1.6** Plant, tools, equipment and personal protective equipment (PPE) required for work are determined, obtained and confirmed in working order
- 1.7** Worksite is prepared in accordance with the work plan and workplace requirements
- 1.8** Traffic management plan is confirmed as being in place in accordance with workplace requirements
- 1.9** Safety observer role and responsibilities are discussed and confirmed in accordance with workplace requirements
- 1.10** Communication method between the workers and safety observer is determined and confirmed in accordance with workplace requirements

2 Carry out installation and maintenance of LV

- 2.1** Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to

underground services	be performed are applied and monitored
2.2	Lifting, 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	Safety observer is positioned to observe the work in accordance with workplace requirements
2.5	Communication methods between workers and safety observer are used in accordance with workplace requirements
2.6	LV underground service and hardware are installed in accordance with the work plan and workplace requirements
2.7	LV underground service and hardware are maintained in accordance with the work plan and workplace requirements
2.8	Incidents or unplanned events are responded to in accordance with workplace requirements
2.9	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 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 UETTDRIS55 Install and maintain low voltage underground services.

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 UETDRIS011 Install and maintain low voltage underground services

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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)
- determining communication method with safety observer
- confirming safety observer is in position in accordance with workplace requirements
- applying energised/live low voltage (LV) working requirements and procedures in accordance with workplace requirements
- connecting LV underground services to at least two (2) of the following:
 - underground pillar/pit connection (single phase)
 - underground pillar/pit connection (three phase)
 - underground to overhead connection
- using the following specialised energised LV equipment:
 - insulating mats/covers
 - insulating gloves
- testing of LV underground service connections, including at least four (4) of the following tests:
 - polarity*
 - neutral integrity*
 - phase rotation
 - continuity
 - voltage
 - insulation resistance
 - (* must do)
- 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:

- relevant 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
- safety observer:
 - role and responsibilities
 - communication methods
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident
- requirements for the use of workplace construction manuals, system diagrams/plans and drawings, including:
 - types of LV underground services
 - methods of construction and installation
 - minimum depths for underground services to be buried and proximity to other assets and structures
- materials for underground service installation
- methods of laying underground service cables
- characteristics and applications of different types of cables
- diagnosis and repair of faults
- jointing and terminating methods in a:
 - fuse box
 - pillar and pit
 - customer installation
- testing and commissioning underground services, including:
 - pre-energising tests - insulation resistance and continuity test
 - inspection
 - test equipment functionality and interpretation
 - polarity, voltage and phase sequence tests
 - neutral and phase identification tests
 - neutral integrity tests
 - recording results
- connection principles, including:
 - energised/live work requirements and procedures
 - purpose and function of 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
- use of independent earth for testing.

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 LV underground services
- applicable documentation, including workplace requirements, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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