



Australian Government

UETDRIS010 Install and maintain low voltage overhead services

Release: 1

UETDRIS010 Install and maintain low voltage overhead 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) overhead services in the electricity supply industry (ESI).

It includes the installation, 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, rectification of faults, 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 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

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

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

UETDREL005 Work safely in the vicinity of live electrical apparatus

Competency Field

Industry Specific Cross Discipline

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

- 1.12** Safe approach distances for the work to be performed are determined and confirmed 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 used 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** Safe approach distances are maintained when the work is being performed
- 2.7** Specialised energised LV equipment to work on energised LV overhead services is used in accordance with workplace requirements
- 2.8** LV overhead service and hardware are installed in accordance with the work plan and workplace requirements
- 2.9** LV overhead service and hardware are maintained in accordance with the work plan and workplace requirements
- 2.10** LV overhead service is tested and commissioned in accordance with the work plan and workplace requirements
- 2.11** Incidents or unplanned events are responded to in accordance with workplace requirements
- 2.12** Quality checks of work are undertaken in accordance with work plan, network standards and workplace requirements
- 3 Complete work and**
- 3.1** Completed work is checked for compliance against the

documentation

work plan, network standards in accordance with workplace requirements

- 3.2 Incidents or unplanned events are reported in accordance with workplace requirements
- 3.3 Worksite is rehabilitated, cleaned up 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 network standards and 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 UETTDRI56 Install and maintain low voltage overhead 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 UETDRIS010 Install and maintain low voltage overhead services

Modification History

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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 and workplace requirements, including:
 - work health and safety (WHS)/occupational health and safety (OHS)
 - network standards
- identifying hazards, assessing risks, identifying, applying and monitoring control measures
- obtaining, inspecting and using relevant personal protective equipment (PPE)
- preparing worksite, including:
 - identifying common pole markings i.e., condemned poles
 - conducting safe to approach tests as required
 - assessing network assets for pre-climbing (poles)
 - identifying potential secondary points of contact
- 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
- stringing and connecting low voltage (LV) overhead service cables, including at least two (2) of the following:
 - three phase
 - single phase
 - two phase
- installing LV overhead service protection devices, including at least one (1) of the following:
 - service fuse
 - circuit breakers (pole)
 - service link
- using at least three (3) of the following specialised energised LV equipment:
 - insulating gloves*
 - insulating mats/sleeves/tubes*

- tensioning devices
- insulated tools
- pole shrouds
- (*must do)
- performing at least five (5) of the following LV overhead service tests:
 - neutral integrity*
 - polarity*
 - voltage
 - current
 - phase rotation
 - insulation resistance
 - neutral identification
 - loop impedance
 - earth resistance
 - (*must do)
- recording test results 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:

- relevant legislation, regulations, standards, codes of practice and organisational workplace requirements, including:
 - WHS/OHS
 - safe approach distances
- hazard, risk assessment and risk control requirements, including potential hazards
- types and application of PPE
- safe use of plant, tools and specialised equipment
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident
- identification and control methods of secondary points of contact
- types and application of specialised energised LV equipment, including:
 - insulating gloves
 - insulating mats/sleeves/tubes
 - tensioning devices
 - insulated tools
 - pole shrouds
- safety observer:

- role and responsibilities
- communication methods
- construction manuals, system diagrams/plans and drawings, including:
 - minimum clearances for overhead services to assets and structures
 - ground clearances for overhead services
 - customer poles
 - network standards
- types, characteristics and applications of service cables, including:
 - cable cross-sectional area of conductors
 - current rating and fuse types and ratings
 - maximum span lengths and tensions for overhead services
- stringing and terminating methods
- connection of overhead services, including:
 - types of overhead service connections
 - live LV work principles and procedures
 - LV distribution mains protection systems
 - purpose and function of the multiple earth neutral (MEN) system
 - causes and effects of connection faults
 - standard phase sequencing
 - purpose and operation of service fusing
- procedures for maintenance of overhead service installations, including:
 - diagnosis and rectification of faults
 - removing, repairing and replacing damaged overhead services
 - removing and replacing service protection devices
- testing and commissioning overhead services, including:
 - pre-energising tests - insulation resistance and continuity test
 - inspection
 - test equipment functionality and interpretation
 - principles of loop impedance
 - polarity, voltage and phase sequence tests
 - neutral and phase identification tests
 - neutral integrity tests
 - use of independent earth
 - recording results.

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

Links

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