



Australian Government

UETDRDU014 Joint, terminate and maintain low voltage underground paper insulated cable

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.

Application

This unit involves the skills and knowledge required to joint, terminate and maintain low voltage (LV) underground paper insulated cable in the electricity supply industry (ESI).

It includes jointing, terminating and the testing of cable in new installations. It also includes maintaining cable in existing installations including repairing, replacing, re-jointing or re-terminating and testing of de-energised cable.

It includes using a range of tools, equipment, specialised materials and manufacturer's instructions.

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

UETDREL005 Work safely in the vicinity of live electrical apparatus

Competency Field

Distribution Underground

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Prepare to joint, terminate and maintain LV underground paper insulated cable

- 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** 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** Work is prioritised and sequenced for completion in accordance with work plan and workplace requirements
- 1.7** Worksite is prepared in accordance with workplace requirements

2 Carry out jointing and terminating of LV underground paper insulated cable in new installations

- 2.1** Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to be performed are applied and monitored
- 2.2** Manual handling, working in confined spaces and use of 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 Cable is tested before jointing or terminating in accordance with the work plan and workplace requirements
- 2.5 Cable is prepared for jointing or terminating in accordance with workplace requirements
- 2.6 Cable is jointed or terminated in accordance with workplace requirements
- 2.7 Cable is tested after jointing or terminating 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 **Carry out the maintenance of de-energised LV underground paper insulated cable**
 - 3.1 Legislation, regulations, standards, codes of practice and organisational workplace requirements for the work to be performed are applied and monitored
 - 3.2 Manual handling, working in confined spaces and the use of tools, equipment and PPE are carried out in accordance with workplace requirements
 - 3.3 Hazard control measures are monitored in accordance with workplace requirements
 - 3.4 Cable is identified and spiked or cut in accordance with workplace requirements
 - 3.5 Work permits are received and signed in accordance with workplace requirements
 - 3.6 Cable is tested before the maintenance in accordance with the work plan and workplace procedures
 - 3.7 Cable is prepared for maintenance in accordance with manufacturer's instructions and workplace requirements
 - 3.8 Cable is maintained in accordance with manufacturer's instructions and workplace requirements
 - 3.9 Work permits are signed off in accordance with

workplace requirements

3.10 Cable, cable joint or termination is tested in accordance with the work plan and workplace requirements

3.11 Incidents or unplanned events are responded to in accordance with workplace requirements

3.12 Quality checks of work are undertaken in accordance with work plan and workplace procedures

4 Complete work and documentation

4.1 Completed work is checked for compliance against the work plan and workplace requirements

4.2 Incidents or unplanned events are reported in accordance with workplace requirements

4.3 Worksite is rehabilitated, cleaned and made safe in accordance with workplace requirements

4.4 Surplus materials are returned to storage or disposed of in accordance with workplace requirements

4.5 Tools and equipment are cleaned, checked and returned to storage in accordance with workplace requirements

4.6 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 UETTDRCJ22 Install and maintain de-energised low voltage underground paper insulated cables.

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 UETDRDU014 Joint, terminate and maintain low voltage underground paper insulated cable

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)
 - protecting existing underground services
 - handling underground power cables
 - using liquefied petroleum gas (LPG)
 - applying shoring requirements
- 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
- completing at least one (1) of the following cable joints:
 - tee-off
 - straight
 - breech
- completing at least one (1) of the following cable terminations:
 - pole top
 - transformer
 - low voltage (LV) switchboard
 - pillar/turret
- using at least one (1) of the following cable jointing/terminating products:
 - taped resin
 - heat shrink
 - cold applied
- completing at least one (1) of the following earth bond methods:
 - lead wiping

- mechanical
- completing at least one (1) of the following cable maintenance tasks:
 - outer sheath repair
 - insulation repair
- completing at least one (1) of the following to determine the cable electrical status:
 - spiking
 - guillotine/remote cutting
 - safe/live cut
- completing at least three (3) the following cable tests:
 - moisture content*
 - voltage
 - continuity
 - insulation resistance
 - phase identification
 - (*must do)
- using at least one (2) of the following cable conductor connection methods:
 - compression lug
 - mechanical connector
 - insulation piercing connector
- 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
- 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 permits
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident
- safe work practices, including:
 - working in confined spaces
 - excavation and trench safety
 - LPG equipment and testing

- cable spiking, guillotine/remote cutting or safe/live cut
 - manual handling
- cable alignment and identification
- work plan requirements, including:
 - layout of drawings
 - manufacturer's instructions
 - construction manuals
 - testing plan
 - quality checklist
 - workplace documentation procedures
- LV paper insulated cables, including:
 - types and sizes
 - construction, characteristics and properties
 - minimum bending radius
- cable jointing, terminating and maintenance requirements, including:
 - cable handling techniques
 - jointing principles, techniques and procedures
 - earth bonding methods and procedures
 - cable moisture testing procedures
 - types of cable damage/defects
 - use of test equipment
 - testing 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 jointing, terminating and maintaining LV underground paper insulated cable
- applicable documentation, including workplace requirements, relevant industry standards, equipment specifications, regulations, codes of practice and manufacturer's instructions.

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