



Australian Government

UETTDRCJ27 Install and maintain de-energised high voltage underground polymeric cables

Release: 1

UETTDRCJ27 Install and maintain de-energised high voltage underground polymeric cables

Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package.

Application

This unit involves the skills and knowledge required to install and maintain de-energised high voltage (HV) underground polymeric cables in the electricity supply industry (ESI).

It includes jointing, terminating, repairing and replacing cables; isolating systems and circuits and following procedures of for accepting electrical access permits. It also includes using equipment, tools and materials; undertaking pre-commissioning and/or re-commissioning tests and updating system data/maintenance records.

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

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

Pre-requisite Unit

Common Unit Group

UEENEEE101 Apply Occupational Health and Safety regulations, codes and practices in the workplace

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE105A Fix and secure electrotechnology equipment

UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

UETTDRCJ21 Lay ESI electrical cables

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDREL16 Working safely near live electrical apparatus

Competency Field

Cable Jointing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to install and maintain de-energised HV underground polymeric cables

PERFORMANCE CRITERIA

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

- 1.1** Work plan, construction plans, drawings, workplace procedures and material lists are received, confirmed and communicated with relevant personnel
- 1.2** Job requirements and workplace procedures are identified and communicated with relevant personnel
- 1.3** Work health and safety (WHS)/occupational health and safety (OHS), environmental and workplace procedures for the installation and maintenance of de-energised HV underground polymeric cables are obtained and confirmed for the purposes of the work to be performed
- 1.4** Work is prioritised and sequenced for completion within acceptable timeframes following consultation with relevant personnel and in accordance with workplace procedures
- 1.5** WHS/OHS and environmental hazards are identified, WHS/OHS risks are assessed and control measures identified in accordance with workplace procedures
- 1.6** Relevant work permits are confirmed and signed in accordance with workplace procedures
- 1.7** Plant, equipment, tools and personal protective equipment (PPE) required for work are identified, obtained and confirmed in working order
- 1.8** Worksite is prepared to minimise risk, damage to property, commerce and individuals in accordance with workplace procedures
- 1.9** Traffic management plan is confirmed as being applied in accordance with workplace procedures

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| 2 Carry out the installation and maintenance of de-energised HV underground polymeric cables | 2.1 | WHS/OHS, sustainable energy and environmental principles and practices are monitored and followed to reduce incidents in accordance with workplace procedures |
| | 2.2 | Requirements for lifting and/or climbing and/or working at heights and the use of power tools/equipment are followed in accordance with workplace procedures |
| | 2.3 | Systems and circuits are isolated as required, proved safe to work on in accordance with workplace procedures |
| | 2.4 | De-energised HV underground polymeric cables are installed in accordance with the work schedule and workplace procedures |
| | 2.5 | Maintenance, including repair and/or replacement of de-energised HV underground polymeric cables is carried out in accordance with the work schedule and workplace procedures |
| | 2.6 | Unplanned events are responded to in accordance with workplace procedures |
| | 2.7 | Quality checks of work are undertaken in accordance with workplace procedures |
| 3 Complete installation and maintenance of de-energised HV underground polymeric cables | 3.1 | Completed work is checked against work plan, construction plans and drawings for compliance and anomalies are reported in accordance with workplace procedures |
| | 3.2 | WHS/OHS and environmental incidents are reported in accordance with workplace procedures, as required |
| | 3.3 | Worksite is rehabilitated, cleaned up and made safe in accordance with workplace procedures |
| | 3.4 | Tools, equipment and surplus resources are, where appropriate, cleaned, checked and returned to storage in accordance with workplace procedures |
| | 3.5 | Relevant work permits are signed off and HV underground polymeric cables are returned to service in accordance with workplace procedures |

- 3.6** Work records, reports and/or documentation are completed in accordance with workplace procedures

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 Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UETTDRCJ27A Install and maintain de-energised high voltage underground polymeric cables.

Links

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

Assessment Requirements for UETTDRCJ27 Install and maintain de-energised high voltage underground polymeric cables

Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package.

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 work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- applying sustainable energy principles and practices
- installing and maintaining the following:
 - high voltage (HV) polymeric cables
- performing at least two (2) of the following cable joints:
 - tee-off joints
 - straight through joint
 - parallel branch joint
 - parallel joint
- completing cable terminations on distribution network equipment on at least one (1) of the following:
 - transformers
 - ring main units
 - chamber substations
- using at least one (1) of the following terminating substation equipment:
 - busbar/termination boxes
 - links/fuses
 - termination boxes
 - control gear
 - circuit breakers
- using at least two (2) of the following:
 - resin filled boxes
 - compound filled boxes
 - polymeric tape
 - heat shrink
 - 'slip-on' moulds

- pre-stretched polymeric
- using all of the following:
 - insulation resistance testers
 - voltage detectors
- using all of the following:
 - cable identification devices
 - cable spiking devices
- using at least two (2) of the following:
 - mechanical connectors
 - compression connectors
 - lugs
- dealing with unplanned events on at least one (1) occasion.

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:

- standards, codes, legislation, supply authority regulations and/or enterprise requirements pertaining to the jointing of HV underground polymeric cables
- requirements for the use of enterprise construction manuals, system diagrams/plans and drawings encompassing:
 - characteristics of different types of cables and components
 - purpose of stress control
- applications of various tools and equipment for HV jointing
- procedures for isolating HV underground cables encompassing:
 - method for proving safe to work
- earthing procedures
- techniques in jointing HV underground polymeric cable, encompassing:
 - short circuit cores and seal cable
 - straight through
 - trifurcating
- techniques in HV terminations encompassing:
 - pole top termination
 - substation/switchgear termination
 - ABC termination
 - telcon termination
- procedures for repairing HV underground cables encompassing:
 - location of faults
 - types of damage
 - techniques to repairs to sheath

- techniques to repairs to core.

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:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry for installing and maintaining de-energised HV underground polymeric cables
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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