



Australian Government

UETTDRCJ99 Test and verify distribution cable jointing installations

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.

Application

This unit involves the skills and knowledge required to test and verify distribution cable jointing installations in the electricity supply industry (ESI).

It includes the installation and maintenance of de-energised high voltage (HV) and low voltage (LV) underground polymeric cables including underground services, network infrastructure and jointing, terminating and repairing cables. It also includes working safely, conducting visual inspections and mandatory and functional test procedures, identifying non-compliance defects and completing mandatory reporting 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 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

UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE104A Solve problems in d.c. circuits

UEENEEE105A Fix and secure electrotechnology equipment

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

UEENEEG101A Solve problems in electromagnetic devices and related circuits

UEENEEG102A Solve problems in low voltage a.c. circuits

UETTDRCJ21 Lay ESI electrical cables

UETTDRCJ26 Install and maintain de-energised low voltage underground polymeric cables

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

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDREL12 Operate plant and equipment near live electrical conductors and apparatus

UETTDREL16 Working safely near live electrical apparatus

UETTDRI41 Install network infrastructure electrical equipment

UETTDRI42 Maintain network infrastructure electrical equipment

UETTDRI55 Install and maintain low voltage underground services

Competency Field

Cable Jointing

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to test and verify underground distribution cable installation

PERFORMANCE CRITERIA

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

- 1.1** Work schedules, plans, drawings, workplace procedures and material lists are received and confirmed
- 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 of electrical equipment (network infrastructure) 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 following consultation with relevant personnel
- 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
- 2 **Carry out jointing LV and HV underground polymeric cables and LV services**
 - 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 Inspection, testing and verification of LV and HV underground polymeric cables is completed safely, in agreed timeframes, to quality standards and with a minimum of waste in accordance with workplace procedures
 - 2.5 LV and HV underground polymeric cables and associated equipment are installed and terminated/connected in accordance with work schedule, requirements and workplace procedures
 - 2.6 Maintenance, including repair and/or replacement of LV and HV underground polymeric cables is carried out in accordance with work schedule, requirements and workplace procedures
 - 2.7 Underground cable installations and associated hardware are visually inspected and confirmed as positioned, secured and terminated/connected in accordance with requirements and workplace procedures
 - 2.8 Tests and/or measurements to verify cable jointing installations are determined and conducted in accordance with WHS/OHS requirements and workplace safety procedures

	2.9	Unplanned events are responded to in accordance with workplace procedures
	2.10	Quality checks of work are undertaken in accordance with instructions and workplace procedures
3 Complete jointing LV and HV underground polymeric cables and LV services	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, are cleaned, checked and returned to storage in accordance with workplace procedures
	3.5	Relevant work permits are signed off and 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 UETTDRCJ99A Test and verify distribution cable jointing installations.

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 UETTDRCJ99 Test and verify distribution cable jointing installations

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
- testing and verifying all of the following:
 - low voltage (LV) polymeric cables
 - high voltage (HV) polymeric cables
- using at least two (2) of the following:
 - tee-off joints
 - straight through joints
 - parallel branch joints
 - parallel joints
 - trifurcating joint
- using at least two (2) of the following:
 - pillars (single phase)
 - pillars (three phase)
 - lighting pillar standards
 - LV switchboards
 - substations
 - underground/overhead terminations
- using at least one (1) of the following:
 - transformers
 - switchgear
 - ring main units
- using at least one (1) of the following cable sealing methods:
 - resin filled boxes
 - compound filled boxes
 - polymeric tape

- heat shrink
- 'slip-on' moulds
- using at least one (1) of the following cable conductor connection methods:
 - compression lugs
 - mechanical connectors
 - insulation piercing connectors
 - lugs
- performing at least four (4) of the following cable tests:
 - polarity test*
 - phase rotation test
 - continuity test
 - voltage test
 - insulation resistance test
 - (*must do)
- using all of the following:
 - cable ID devices
 - cable spiking devices.

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:

- legislated regulations encompassing:
 - legislation and regulations that require distribution cable jointing installations and equipment to be tested to ensure they are safe
 - the person/bodies responsible for the various aspects of ensuring distribution cable jointing installations are safe
 - results of tests that show a distribution cable jointing installation is safe for connection to the supply
 - results of periodic inspection and tests that show wiring and equipment is safe to use
 - results of periodic inspection and tests that show the distribution cable jointing installations electrical equipment is safe to use
- testing installations encompassing:
 - distribution cable jointing system phasing, phase rotation and polarity is correct and conforms to network construction standards
 - installation resistance is adequate
 - cable identification
- documentation encompassing:
 - results of tests conducted on a distribution cable jointing installation in accordance with work package requirements and to ensure the distribution cable jointing installation is safe

- documents of periodic inspection and testing of distribution cable jointing installation and equipment in accordance with requirements
- techniques in the installation and maintenance of network infrastructure
- techniques in jointing, terminating and maintenance encompassing:
 - HV polymeric cables
 - LV polymeric cables
 - underground services.

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 testing and verifying distribution cable jointing installations
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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