



Australian Government

UETTDRCJ30 Maintain gas and oil filled specialised underground cables

Release: 1

UETTDRCJ30 Maintain gas and oil filled specialised underground 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 covers the maintenance and repair of oil and gas filled specialised underground cables 33 kV and above. It includes testing, diagnosing faults, repairing and replacing the specialised cables. It also encompasses the processes for preliminary pressure control and leak repair, as well as working under induced voltages, cable identification and cable freezing.

The application of the skills and knowledge described in this unit may require a licence/registration to practice in the workplace subject to regulations for undertaking of electrical work.

Other conditions may apply under state and territory legislative and regulatory licencing 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

UETTDRCJ23 Install and maintain de-energised high voltage underground paper insulated cables

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

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

UETTDRCJ29 Install gas and oil filled specialised underground cables

UETTDRCJ99 Test and verify distribution cable jointing installations

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/plan to maintain oil and gas filled specialised underground cables

PERFORMANCE CRITERIA

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

- 1.1** Work schedules, including drawings, plans, requirements, established procedures and material lists, are obtained and analysed, as necessary, by site inspection and the extent of the preparation of the work determined for planning and coordination
- 1.2** Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes, to a quality standard and in accordance with established procedures
- 1.3** Risk control measures are identified, prioritised and evaluated against the work schedule
- 1.4** Relevant requirements and established procedures for the work are communicated to all personnel and identified for all worksites
- 1.5** Hazards are identified, work health and safety (WHS)/occupational health and safety (OHS) risks assessed and control measures prioritised, implemented

and monitored, including emergency exits kept clear, to ensure safe systems of work are followed and according to established procedures

- 1.6** Relevant work permits are secured to coordinate the performance of work according to requirements and/or established procedures
- 1.7** Resources, including personnel, equipment, tools and personal protective equipment (PPE), required for the job are identified, scheduled and coordinated and confirmed safe and in technical working order
- 1.8** Clients/customers are provided with possible solutions and/or options within the scope, acceptable cost and requirements
- 1.9** Liaison and communication issues with others/authorised personnel, authorities, clients and land owners are resolved and activities coordinated to carry out work
- 1.10** Personnel participating in the work, including plant operators and contractors, are fully briefed and respective responsibilities coordinated and authorised, where applicable, in accordance with established procedures
- 1.11** Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
- 1.12** Positioning of road signs, barriers and warning devices is planned in accordance with requirements

2 Carry out the maintenance of oil and gas filled specialised underground cables

- 2.1** WHS/OHS and sustainable energy principles and practices to reduce the incidents of accidents and minimise waste are monitored and actioned in accordance with requirements and/or established procedures
- 2.2** First aid, rescue and other related work procedures are performed according to requirements and/or established procedures
- 2.3** Lifting, climbing, working in confined spaces and aloft, and use of power tools/equipment, techniques and practices are safely exercised according to requirements

- 2.4 Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks are reported to immediate authorised personnel for directions according to established procedures
 - 2.5 Remedial actions are taken to overcome any shortfalls encountered in the work schedule according to requirements and/or established procedures
 - 2.6 Maintenance of oil and gas filled specialised underground cables is carried out in accordance with the work schedule and requirements and/or established procedures
 - 2.7 Essential knowledge and associated skills are applied in the safe maintenance of oil and gas filled specialised underground cables to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
 - 2.8 Solutions to non-routine problems are identified and actioned using acquired essential knowledge and associated skills according to requirements
 - 2.9 Ongoing checks of quality of the work are undertaken in accordance with requirements and established procedures to ensure a quality outcome is achieved for the client/customer and to a community/industry standard
- 3 Complete the maintenance of oil and gas filled specialised underground cables**
- 3.1 Work undertaken is checked against work schedule for conformance with requirements, anomalies reported and solutions identified in accordance with established procedures
 - 3.2 Accidents and/or injuries are reported and followed up in accordance with requirements/established procedures
 - 3.3 Worksite is rehabilitated, cleaned up and confirmed safe in accordance with established procedures
 - 3.4 Tools, equipment and any surplus resources and materials are, where appropriate, cleaned, checked and returned to storage in accordance with established procedures
 - 3.5 Relevant work permits are signed off and underground cables are returned to service and advised to client/customer in accordance with requirements

- 3.6** Works completion records, reports, as installed/modified drawings and/or documentation and information are confirmed, processed and appropriate personnel notified

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 UETTDRCJ30A Maintain gas and oil filled specialised underground 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 UETTDRCJ30 Maintain gas and oil filled specialised underground cables

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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 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 all of the following pressurised 33 kV and above cable types:
 - oil filled cables
 - gas filled cables
- performing at least two (2) of the following jointing methods:
 - straight through joint
 - straight stop joint
 - trifurcating joint
 - splitter joint
 - trifurcating/transition/stop joint
- performing at least one (1) of the following termination methods:
 - air box terminator
 - gas filled terminator
 - compound filled terminator
- connecting cable conductors using at least two (2) of the following:
 - welded connectors
 - mechanical connectors
 - compression connectors
- using specialist testing devices including all of the following:
 - voltage detectors
 - cable identification equipment and spiking
 - insulation resistance testers
- using/applying all of the following equipment and materials:
 - leak repair and pressure control cable freezing equipment
 - pressure control tapes

- fittings and seals
- undertaking preparation for cable freezing, preliminary pressure control and leak repair activities
- using cable terminating materials including at least two of the following:
 - paper tape
 - polymeric tape
 - heat shrink
 - slip-on moulds
- 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:

- legislation, standards, codes, supply authority regulations and/or enterprise requirements pertaining to the maintenance of oil or gas filled specialised underground cables
- safety precautions of working with oil or gas filled specialised underground cables encompassing:
 - safe operation procedures
 - WHS/OHS hazards and precautions
 - dangers of working in confined spaces
 - identification of WHS/OHS hazards, and assessing and controlling risks
 - types, selection, maintenance, storage and uses of personnel protective equipment (PPE), including intrinsically safe equipment for use in confined and hazardous environments
 - permit/authorisation to work systems and isolation procedures
 - safe working policies, procedures and practices when using/operating specialised equipment
 - emergency response and rescue, including first aid
- safe storage and disposal of oil or gas filled specialised underground cables and associated equipment and components; types, function and serviceability of tools and equipment used for the maintenance of oil or gas filled specialised underground cables; and techniques in the safe maintenance of oil or gas filled specialised underground cables
- techniques in the safe testing/inspection of the oil or gas filled specialised underground cables to ensure successful maintenance has occurred.

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 PPE currently used in industry
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

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