



Australian Government

UETTDRCJ25 Perform straight through high voltage paper insulated to polymeric transition joint

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 perform straight through high voltage (HV) paper insulated cable to polymeric transition joint cable in the electricity supply industry (ESI).

It includes the formation of a HV/low voltage (LV) transition joint(s) from paper insulated to polymeric cable on belted and screened cables, the determination of electrical values of belt papers and core insulation, protection of core and belt papers prior to setting, core setting, termination of belt papers, construction of bell mouth and moisture testing.

It also includes isolation of systems and circuits, the procedures of issuing/accepting electrical access permits, 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

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

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE104 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

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Prepare to joint HV paper insulated cables to HV polymeric cables

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|------------|--|
| 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 formation of a paper insulated to polymeric transition joint 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, risks are assessed and control measures identified in |

- accordance with workplace procedures
- 1.6** Relevant work permits are obtained, understood 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 of HV paper insulated cable to HV polymeric cable**
- 2.1** WHS/OHS, sustainable energy and environmental principles and practices are monitored and followed to reduce incidents of accidents 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** Cables are prepared for jointing, terminating or maintaining in accordance with construction drawings, manufacturer instructions and workplace procedures
- 2.5** Cables are jointed, terminated or maintained in accordance with construction drawings, manufacturer instructions 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 jointing of HV paper insulated cable to HV polymeric cable**
- 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/LV underground paper insulated/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 UETTDRCJ25A Perform straight through high voltage paper insulated to polymeric transition joint.

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 UETTDRCJ25 Perform straight through high voltage paper insulated to polymeric transition joint

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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
- performing at least two (2) of the following:
 - high voltage (HV) polymeric to PL Y
 - HV polymeric to paper/Al sheathed
 - low voltage (LV) transition
- completing at least two (2) of the following:
 - straight through joint
 - straight through trifurcating joint
 - parallel branch joint
 - parallel trifurcating transition
 - parallel transition
- using at least two (2) of the following:
 - polymeric tape
 - heat shrink
 - ‘slip-on’ moulds
 - pre-stretched polymeric resin
- using at least two (2) of the following cable conductor connection methods:
 - compression joints
 - soldered joints
 - mechanical connectors
 - welding conductors
 - insulating piercing connectors
- 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:

- safety precautions specific to handling and jointing underground aluminium and lead cables, including provision of WHS/OHS information, such as material safety data sheets (MSDS)
- requirements for the use of enterprise manuals, system diagrams/plans and drawings
- types of tools and equipment
- techniques for the jointing of transition joint between cross-linked polyethylene (XLPE) and lead sheathed, paper insulated cables
- methods of testing cable after jointing.

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 performing straight through jointing of HV paper insulated to polymeric transition joints
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

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