



Australian Government

**Assessment Requirements for
UETTDRDP14 Maintain energised HV
distribution overhead electrical apparatus
(glove)**

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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.

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 all of the following:
 - installing/replacing structures
 - installing/replacing hardware (e.g. cross-arm and insulator)
 - repairing conductors
 - installing/replacing/connecting bridge/bonding connections
- performing at least two (2) of the following:
 - installing/replacing pole mounted reclosers
 - installing/repairing/replacing air brake switches
 - installing/repairing/replacing high voltage (HV) links/disconnects
 - installing/removing temporary HV links/HV fuses
 - installing/repairing/replacing expulsion drop-out fuses
 - installing/replacing lightning arrestors
 - installing/replacing vibration dampers or aircraft warning markers
- performing work from at least two (2) of the following:
 - elevated work platform (EWP)
 - ladder
 - pole platform
 - insulated structured
- using at least one (1) of the following:
 - voltage detector
 - leakage detector
 - insulation test equipment
- 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 and regulations, including:
 - legislation, standards and codes
 - supply authority regulations
 - industry guidelines and enterprise requirements
- safety precautions for HV live work associated to glove and barrier, including:
 - minimum approach distances
 - WHS/OHS hazard and precautions
 - assessing and controlling risks
 - personnel protective equipment (PPE)
 - HV live work access
 - auto-reclose function
 - fault current protective devices
 - integrity of insulation
 - specialised equipment and tools
 - inspection of equipment and tools
 - use of specialised equipment and tools
 - work team communication
 - use of safety observers
 - emergency response, first aid and rescue
- policies and procedures for glove and barrier work up to and including 33 kV, including:
 - policies, procedures and practices
 - definition of terms
 - responsibilities of personnel
 - types of structures
 - types of equipment and compliance
- glove and barrier techniques up to and including 33 kV, including:
 - HV insulators
 - HV cross-arms
 - HV bridge connections
 - installation and maintenance of equipment
 - temporary midspan switching devices
 - erection and replacement of poles
 - replacement of conductors and cables
 - HV armour rods and line guards
 - conversion intermediate to strain construction
 - switching devices

- safety precautions for plant, equipment and tools, including:
 - safe working clearances
 - identification of WHS/OHS hazards
 - assessing and controlling risks and hazards
 - PPE
- identification and serviceability of plant, equipment and tools, including:
 - identification of plant, equipment and tools
 - serviceability of plant equipment and tools
- operational use of plant, equipment and tools, including:
 - conductor supports
 - selecting conductor support method
 - calculation of loads
 - effects of secondary loading
 - effects of resultant forces
 - conductor support rigging procedures
 - displacement of conductors utilising rigging equipment
- electrical and electrostatic principles, including:
 - relationship with current, voltage and resistance as related to distribution lines
 - phase voltage and respective line voltages
 - production of an electric field
- HV insulation including:
 - construction of disc insulators
 - construction of a polymeric insulator
 - checking integrity of insulation prior to work commencement
 - effects of electrical fields on disc insulators
 - number of disc insulators needed
 - performance of a failed disc insulator on the line and system
 - minimum number of discs per string
 - detecting failed disc insulators
- effects of electrostatic induction on the human body, including:
 - electrostatic induction and the human body
 - application of a Faraday cage
- switching surges and magnetic fields, including:
 - lightning and switching surges
 - magnetic fields
- HV switching fundamentals including:
 - standards, codes, legislation, supply authority regulations, industry guidelines and enterprise requirements
 - manuals system diagrams/plans and drawings
 - HV live work access authority/permit system - operational forms - HV switching or

- outage requests
- fault current protection devices - main and backup devices, components, types, categories, applications, functions, principle of operation, coordination, zoning, auto-reclosing suppression, paralleling and separating, and ring versus radial feeders
- disabling auto-reclose function
- network interconnectors
- test instruments
- types and categories of switchgear - application, function and operating capabilities; and restrictions
- operating switching apparatus - identifying hazards, assessing risks, systematic and defensive techniques, mobile radio and double insulation
- HV electrical faults - types, causes and effects
- HV single wire earth return (SWER) system, including:
 - components
 - circuit arrangement
 - operation principles
 - faulty SWER earth system
 - SWER substations
- safety observer principles, including:
 - duties
 - techniques
 - minimum approach distances (MAD)
 - minimum safe working distance from vegetation
- feeder automation system, including:
 - function
 - main components
 - field devices
 - supervisory control and data acquisition (SCADA) systems, interlocks and operation
- SCADA systems, including:
 - function and main components
 - security interlocks and access restrictions
 - switching apparatus and retrieving data operation
 - field devices operation
- teamwork HV live work.

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

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>