



Australian Government

Assessment Requirements for UETTD RTP33 Maintain energised transmission lines using bare hand technique on a helicopter platform

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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
- working safely from a helicopter platform including all of the following:
 - usage of a helicopter
 - usage of a platform
- performing at least one (1) of the following:
 - replacing/connecting bridge/bonding connections
 - replacing vibration damper
 - repairing/replacing conductor spacers
 - repairing/replacing conductor joint
 - repairing conductor
 - applying helical splice
- 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:

- working on energised lines at or above 132 kV using live line bare hand techniques from a helicopter platform encompassing:
 - Commonwealth/state/territory legislation, standards, codes, supply and aviation authority regulations and/or enterprise requirements associated with extra high voltage (EHV) live line bare hand work from a helicopter platform
 - safety precautions when working on helicopters - live line minimum approach distances, including safe approach for selected helicopter type(s); WHS/OHS hazards and

precautions; determination of helicopter platform for task and working environment (i.e. network and relevant aircraft authority); identification of WHS/OHS hazards; assessing and controlling risks; types, selection, maintenance, storage and uses of personnel protective equipment (PPE); live line access authority/permit systems; disabling auto-reclosing function; ensuring functioning of fault current protective devices; checking integrity of insulation prior to work commencement; types and function of specialised live working equipment and tools; safe working policies, procedures and practices when using/operating specialised equipment and tools; methods of using specialised equipment and tools; work team communication; use of safety observers; pilot briefing requirements; emergency response and rescue, including first aid; techniques for working bare hand on live line EHV from a helicopter platform; aircraft operations induction, including flight plan clearances, systems, equipment and communication requirements; types and functions of aerial attachment equipment, including appropriate testing, rating and certification

- aircrew familiarisation with live-line systems operations and equipment requirements
- principles of high voltage (HV) encompassing:
 - Commonwealth/state/territory legislation, standards, codes, supply authority regulations and/or enterprise requirements associated with working on or near HV
 - electrical and electrostatic principles related to HV lines - relationship of current, voltage and resistance as related to transmission lines; and relationship of phase voltage and respective line voltages
 - production of an electric field – units, effect of distance, potential of an object within the field and the effect of distances to the potential
 - HV insulators - construction of a disc insulator, construction of a polymeric insulator, effects of an electrical field on disc insulators, identification of the number of disc insulators needed for a single line voltage, performance of a failed disc insulator on the line and the system, determining the minimum allowable number of discs per string for each line voltage in the system before bare hand work is to proceed, techniques in detecting a failed disc in a string, techniques in using appropriate tools and equipment to test a string, and methods of recording data
 - effects of electrostatic induction on the human body - relationship of the resistance of a human body to different levels of current and voltage, relationship of a human body to an electric field, and effects of electrostatic induction on bare hand work
 - application of Faraday's cage - effects of a body, advantages, description of the Faraday's cage used by bare hand live-line workers
 - safety precautions working on or near HV electrical apparatus - safe approach distances (SAD) from live line; identification of WHS/OHS hazards; assessing and controlling risks; types, selection, maintenance, storage and uses of PPE; permit to work systems and isolation procedures; types and function of specialised live working equipment; safe working policies, procedures and practices when using and operating specialised equipment; methods of using specialised equipment; and emergency response and rescue, including first aid
 - effects of lighting and switching surges on performance of string insulators - health effects to workers, and methods used to alleviate surges on transmission lines
 - magnetic field - difference between magnetic fields and electrostatic fields; source of magnetic field; techniques in locating, measuring and analysing known sources of

magnetic fields; reasons for monitoring magnetic field exposure and techniques used to monitor magnetic fields

- powerline safety practices encompassing:
 - protective apparatus and apparel for linework - responsibilities for the selection, use, maintenance and storage of protective apparatus and apparel and the types of protective apparatus and apparel used for the line worker
 - requirements for the use of ladders - carrying, erecting, collapsing and lowering different types of extension ladder against a standing pole; maintenance checks on different types of ladders; renewal of extension ropes and the safety issues relating to clearances from overhead conductors
 - requirements for climbing and working aloft - methods used to identify a pole is safe to climb; methods used to inspect a line worker's body belt; application of knots and hitches appropriate to the requirements of a line worker; height safety principles, including personal fall protection, prevention and related requirements; and the practical procedures of climbing an overhead structure and fitting a pole chair
 - traffic management - purpose of traffic management and a line worker's responsibilities in accordance with relevant statutory requirements and electricity supply industry (ESI) requirements, demonstration of the procedure used to provide an effective traffic management scheme and the use of a two-way radio
 - control of small fires - identification, selection and operation of the appropriate extinguishing mediums for various types of fires; general fire prevention methods and the precautions for personal protection when fighting small fires
 - rescue victims from heights and confined spaces - planning and identifying procedures; establishing responses; developing techniques; involvement of external emergency services; and practical demonstration/rehearsals of rescuing a person from heights and from confined spaces and emergency procedures for the rescue of an electric shock victim, including cardiopulmonary resuscitation (CPR)
 - requirements for aerial linework - planning, establishing and implementing relevant aviation authority clearances; determining system requirements; aircrew familiarisation with network operations and equipment; and requirements for effective communications operations for aerial 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>