



Australian Government

UETTD RTP27 Maintain transmission structures and associated hardware

Release: 1

UETTD RTP27 Maintain transmission structures and associated hardware

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 of non-energised, pyramid, delta, Pi or enterprise-specific transmission towers and associated hardware. It includes the repair and/or replacement of components in accordance with construction plans, specifications, work orders and standing enterprise requirements. Maintenance also involves cleaning and welding. The updating of system data, records and/or completion of relevant documentation in accordance with enterprise requirements also forms part of this competency.

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

UEENEEE105A Fix and secure electrotechnology equipment

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

UETTDREL11 Apply sustainable energy and environmental procedures

UETTDREL16 Working safely near live electrical apparatus

UETTD RTP26 Install transmission structures and associated hardware

Competency Field

Transmission

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to maintain transmission towers and associated hardware

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 received, analysed and confirmed, as necessary, by site inspection
- 1.2** Relevant requirements and established procedures for the work are communicated to all personnel and identified for all worksites
- 1.3** Work health and safety (WHS)/occupational health and safety (OHS) policies and procedures related to requirements and established procedures for the maintenance of towers and associated hardware are obtained and confirmed for the purposes of the work to be performed and communicated to relevant personnel
- 1.4** Work is prioritised and sequenced following consultation with others for completion within acceptable timeframes and in accordance with established procedures
- 1.5** Hazards are identified, WHS/OHS risks assessed and control measures prioritised, implemented and monitored, including emergency exits kept clear, according to established procedures
- 1.6** Resources, including personnel, equipment, tools and personal protective equipment (PPE), required for the job are obtained and confirmed in working order
- 1.7** Relevant work permits are obtained to access and perform work according to requirements and/or established procedures
- 1.8** Relevant personnel at worksite are confirmed current in first aid, pole tower/top rescue and other related work procedures according to requirements

- 1.9 Liaison and communication issues with others/authorised personnel, authorities, clients and land owners are resolved to carry out work where necessary
 - 1.10 Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures
 - 1.11 Personnel participating in the work, including plant operators and contractors, are fully briefed and respective responsibilities confirmed, where applicable, in accordance with established procedures
 - 1.12 Traffic management plan is identified and implemented
- 2 **Carry out the maintenance of transmission towers and associated hardware**
 - 2.1 WHS/OHS, sustainable energy and environmental principles and practices to reduce the incidents of accidents and minimise waste are monitored and followed in accordance with requirements and/or established procedures
 - 2.2 Towers and associated hardware to be maintained are stabilised according to requirements
 - 2.3 Lifting, climbing, working aloft, and use of power tools/equipment, techniques and practices are safely followed and currency according to requirements confirmed
 - 2.4 Essential knowledge and associated skills are applied in the safe maintenance of towers and associated hardware to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements
 - 2.5 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
 - 2.6 Maintenance, including repair and/or replacement of towers, is carried out in accordance with the work schedule and requirements/established procedures
 - 2.7 Unplanned events in the maintenance of towers and associated hardware are undertaken within the scope of established procedures
 - 2.8 Known solutions to a variety of problems are applied

- using acquired essential knowledge and associated skills
- 2.9** Ongoing checks of quality of the work are undertaken in accordance with instructions and established procedures
- 3 Complete the maintenance of transmission towers and associated hardware**
- 3.1** Work undertaken is checked against work schedule for conformance with requirements and anomalies reported in accordance with established procedures
- 3.2** Accidents and/or injuries are reported in accordance with requirements/established procedures, where applicable
- 3.3** Worksite is rehabilitated, cleaned up and made 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 or disposed of in accordance with established procedures
- 3.5** Relevant work permits are signed off and towers and associated hardware are returned to service in accordance with requirements
- 3.6** Work completion records, reports, as installed//modified drawings and/or documentation and information are finalised and 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 UETTD RTP27A Maintain transmission structures and associated hardware.

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 UETTD RTP27 Maintain transmission structures and associated hardware

Modification History

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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
- maintaining transmission structures including any one (1) of the following:
 - pyramid
 - delta pi
 - enterprise-specific type
- removing, repairing or replacing transmission associated hardware including at least two (2) of the following:
 - insulators
 - clamps
 - bolts
 - structural components
- undertaking maintenance of transmission structures and associated hardware including at least one (1) of the following:
 - welding
 - cleaning
- 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:

- procedures for gaining access permits
- reasons for gaining access
- types of maintenance procedures on transmission structures encompassing:
 - procedure to follow for inspection/patrols according to the transmission apply authority

- erecting and removing of transmission equipment and hardware from a tower encompassing:
 - climbing procedures
 - square rigging principles
 - calculation of forces at work within a given square rigging system
 - construction of a square rigging system
 - procedures for changing insulators, such as:
 - vertical angle suspension, strain insulator, post insulator (horizontal or vertical) and bridge insulator, and calculation of conductor forces
- installation of temporary work platforms encompassing:
 - types and function of installation tools and equipment
 - precautions and work methods to follow
 - procedures for installations of temporary work platforms
- installation of conductor protective hardware encompassing:
 - types and selection of common dampers, tools and equipment
 - control of Aeolian vibration
 - procedures for the installation of dampers onto conductors
- dead line insulator washing encompassing:
 - supply authority regulations
 - procedure for washing de-energised transmission lines.

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 maintaining transmission structures and associated hardware
- applicable documentation, including workplace procedures, relevant industry standards, equipment specifications, regulations, codes of practice and operation manuals.

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