



Australian Government

UETDRTO002 Erect power systems transmission structures

Release: 1

UETDRTO002 Erect power systems transmission structures

Modification History

Release 1. This is the first release of this unit of competency in the UET Transmission, Distribution and Rail Sector Training Package Release 2.0.

Application

This unit covers the erection of towers, in sections or in parts, in accordance with construction plans and specifications. It includes the correct positioning of road signs, barriers and/or warning devices; the inspection and confirmation that excavation/foundation construction is in accordance with the work order; and the identification of potential hazards and safety risks with recommendations for preventative action being referred to appropriate authorities.

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 licensing requirements which must be confirmed prior to commencing this unit.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UETDREL002 Comply with environmental requirements

Competency Field

Transmission Overhead

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to erect

PERFORMANCE CRITERIA

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

1.1 Work instructions are received and confirmed

transmission towers

- 1.2** Relevant requirements and established procedures to be followed for the work to be performed are discussed with all personnel to establish and confirm the work schedule
- 1.3** Work health and safety (WHS)/occupational health and safety (OHS) policies and procedures to be followed for the work to be performed are received and confirmed
- 1.4** Suggestions to assist in meeting erection of towers outcomes are made to others involved in the work
- 1.5** Hazards are identified, WHS/OHS risks assessed and emergency exits kept clear according to given instructions and established procedures
- 1.6** Scope of responsibility under the relevant work permit are received and confirmed with relevant personnel according to requirements and established procedures
- 1.7** Resources, including equipment, tools and personnel protective equipment (PPE), required for the job are obtained and confirmed safe and in working order according to established procedures
- 1.8** Relevant responsibility associated with first aid, tower/pole top rescue and/or other related work safety procedures at the worksite are confirmed in accordance with requirements and established procedures to ensure safety measures are followed in the instance of an incident
- 1.9** Client issues are referred to appropriate personnel in accordance with industry/community standards
- 1.10** Site is prepared according to given instructions and the work schedule for a quality outcome and to minimise risk and damage to property, commerce and individuals in accordance and established procedures
- 1.11** Road signs, barriers and warning devices are positioned in accordance with given instructions and requirements

2 Carry out the erection of transmission towers

- 2.1** WHS/OHS and sustainable energy principles and practices to reduce the incidents of accidents and minimise waste are followed in accordance with given instructions, requirements and/or established procedures

- 2.2 Lifting, climbing, working aloft, and use of power tools/equipment, techniques and practices are safely followed in accordance with given instructions and according to requirements confirmed to eliminate the prospects of incidents
 - 2.3 Operational knowledge for the operation of support plant and equipment used for the erection of towers to be applied to the work is confirmed to ensure completion in an agreed timeframe and to quality standards with a minimum of waste according to requirements and established procedures
 - 2.4 Operation of support plant and equipment used for the erection of towers is carried out in accordance with given instructions and established routines/procedures
 - 2.5 Hazard warnings and safety signs are recognised and hazards and assessed WHS/OHS risks reported to immediate authorised personnel for directions according to established procedures
 - 2.6 Non-routine events are referred to immediate authorised personnel for directions according to established procedures
 - 2.7 Problems associated with operation of support plant and equipment used for the erection of towers are dealt with using acquired known solutions and skills related to routine procedures to ensure work instructions and established procedures are met
 - 2.8 Ongoing checks of quality of the work are undertaken in accordance with given instructions and established procedures
- 3 Complete the erection of transmission towers**
- 3.1 Work undertaken is checked against work schedule and anomalies reported to authorised personnel in accordance with established procedures
 - 3.2 Accidents and/or incidents are actioned and reported to authorised personnel in accordance with established procedures
 - 3.3 Worksite is rehabilitated, cleaned up and made safe in accordance with given instructions and 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 Appropriate personnel are notified of work completion according to established procedures
- 3.6 Work completion records and report forms/data sheets are completed accurately in accordance with given instructions and established 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 UET Transmission, Distribution and Rail Sector Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UETTDRT23 Erect power systems transmission structures.

Links

Companion Volume Implementation Guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>

Assessment Requirements for UETDRT0002 Erect power systems transmission structures

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
- erecting at least one (1) of the following transmission structure types:
 - pyramid
 - delta
 - pi
 - enterprise-specific types
- installing at least one (1) of the following foundation types:
 - mass concrete
 - caisson or pile-based
 - screw-anchor
 - bored
- using at least one (1) of the following methods of erecting a transmission structure:
 - crane
 - gin pole
- 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:

- hand tools and their use encompassing:
 - hand tools for cutting, shaping, drilling, threading, tapping and finishing metallic and non-metallic components - types of tools and their purpose, techniques for the correct and safe use of these tools, hazards associated with their use, and care and maintenance of hand tools
 - tools for measuring and marking out - types of tools and their purpose, techniques for the

- correct and safe use of these tools, hazards associated with their use, and care and maintenance of hand tools
- tools for dismantling and assembling electrical and electronic components - types of tools and their purpose, techniques for the correct and safe use of these tools, hazards associated with their use, and care and maintenance of hand tools
- fixed and portable tools and their use encompassing:
 - fixed power tools for cutting, shaping, drilling and finishing metallic and non-metallic components - types of tools and their purpose, techniques for the correct and safe use of these tools, hazards associated with their use, and care and maintenance of fixed power tools
 - portable power tools for cutting, shaping, drilling and structural components - types of tools and their purpose, techniques for the correct and safe use of these tools, hazards associated with their use, care and maintenance of fixed power tools, and requirements for use on construction sites
- materials properties encompassing:
 - identification and classification of engineering materials material properties
 - types and applications - properties of tensile strength; effects of temperature on the expansion of metals; ductility, malleability, work hardening and annealing; and the conditions that lead to corrosion and the properties of timbers
- transmission structures and hardware encompassing:
 - requirements for the use of enterprise construction manuals, system diagrams/plans and drawings
 - types of structures
 - types and function of associated hardware/equipment and insulators
 - types of conductors
 - location of transmissions structures
 - other equipment used on transmission structures, e.g., aircraft warning devices
 - voltages on transmission structures
- enterprise-specific technical drawings and documents encompassing:
 - types and application of enterprise-specific drawings and documents - electrical and electronic drawings, mechanical drawings, project charts, schedules, graphs, technical manuals and catalogues
 - instructions/worksheets - types and application of enterprise-specific symbols and diagrams
 - title box - description of parts and version control.

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 personal protective equipment currently (PPE) used in industry to erect power systems transmission structures
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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