



Australian Government

UETDRTO001 Erect power systems transmission structure hardware

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 Release 2.0.

Application

This unit covers the erection of hardware and/or associated equipment used on transmission towers. It includes the correct positioning of hardware on the towers in accordance with construction plans and specifications. It also encompasses the inspection and confirmation that the hardware and associated equipment are in accordance with the works 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

UETDRTO002 Erect power systems transmission structures

Competency Field

Transmission Overhead

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 erect transmission tower hardware

- 1.1** Work instructions are received and confirmed
- 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 the erection of transmission tower hardware 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, 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 tower hardware**
- 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 in confined spaces and/or aloft, and use of power tools/equipment, techniques and practices are safely followed in accordance with given instructions and according to requirements to eliminate the prospects of incidents
- 2.3** Operational knowledge for the erection of transmission tower hardware 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** The erection of transmission tower hardware 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 the erection of transmission tower hardware 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 tower hardware**
- 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 UETTDRT24 Erect power systems transmission structure hardware.

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 UETDRT0001 Erect power systems transmission structure hardware

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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 hardware on at least one (1) of the following structures:
 - pyramid
 - delta
 - pi
 - enterprise-specific types
- erecting at least one (1) of the following pieces of hardware:
 - insulators
 - bolts
 - clamps
- erecting transmission hardware using at least one (1) of the following methods:
 - 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:

- requirements for the use of enterprise vehicles, such as trucks and four-wheel drives, encompassing:
 - standards, codes, legislation, supply authority regulations and/or enterprise requirements associated with safe use of enterprise vehicles, including relevant certification and licensing, such as motor cars, light and heavy commercial trucks, heavy truck/trailer combination and four-wheel drive vehicles
 - compliance with regulations associated with the securing of loads prior to transportation

- generation systems encompassing:
 - methods of generating electricity - types of power stations and reasons for their location, and layout of thermal and hydroelectric power stations
 - relationship between power control and load requirements - operating speeds for thermal and hydroelectric generating sets, typical generator voltage levels and output ratings
 - the purpose and features of typical types of co-generation systems
- transmission, distribution and rail systems encompassing:
 - relationship between the transmission, distribution and rail/tram system within an overall power system - different organisations responsible for generation, transmission, distribution and rail/tram; how they correlate and their functions
 - characteristics of a transmission, distribution and rail system - principal components; typical voltage levels and methods of transmission and distribution, including grid type transmission systems; and radial, parallel and ring main feeders
 - relationship between an overhead and underground supply systems within an overall power system - advantages/disadvantages, applications and the basic steps for planning and installing an overhead and underground distribution system
 - single line drawings and layouts - drawings and layouts of transmission and distribution systems, including, radial, parallel and ring main feeders; and the high voltage (HV) equipment associated with substations.

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

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