



**Australian Government**

# **Assessment Requirements for UETDRRT004 Install traction overhead wiring systems**

**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.

## **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 legislation, regulations, standards, codes of practice and organisational workplace requirements, including:
  - work health and safety (WHS)/occupational health and safety (OHS)
- identifying hazards, assessing risks, identifying, applying and monitoring control measures
- obtaining, inspecting and using relevant personal protective equipment (PPE)
- installing at least four (4) of the following types of system equipment and fittings:
  - support structure
  - span
  - section insulator
  - neutral section
  - droppers
  - support equipment
  - tension regulators
  - stay/guy wire
  - tramway support network
- installing at least two (2) of the following traction conductors and cables:
  - contact/trolley\*
  - catenary
  - feeder
  - midpoint anchor
  - earth conductor
  - return conductor
  - drape/potential jumper
  - (\*must do)
- operating from at least one (1) of the following types of mobile plant and height equipment:
  - elevated work platform (EWP)

- ladder
- mobile platform
- using at least two (2) of the following equipment and tools required for overhead rail traction wiring systems:
  - tensioning equipment\*
  - specialised tools
  - electrical testing equipment
  - geometry profiling equipment
  - (\*must do)
- dealing with an unplanned event on at least one (1) occasion
- completing relevant work records, reports and documentation.

## 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:

- relevant legislation, regulations standards, codes of practice and organisational workplace requirements, including:
  - WHS/OHS
- hazard, risk assessment and risk control requirements, including potential hazards
- types and application of PPE
- safe use of plant, tools and equipment
- application, purpose and types of permits
- methods for running wire systems or conductors
- electrical wiring system components, including:
  - earth wires
  - feeder wire
  - catenary wire
  - contact/trolley wire
  - return conductor
  - insulators
  - surge arresters
  - cantilevers
  - droppers
  - tensioning equipment
  - current collectors
  - tram support network
  - tram fittings
  - low clearance components
- types of electrical traction systems, including:

- auto-tensioning
- spring loaded tension
- balance weight anchor (BWA)
- fixed tension
- relationship of the components, apparatus and the conductors to the operation of the traction system
- effective current collection and wire interface
- effective registration in the traction power system
- methods of profiling overhead traction wire, including:
  - factors that impact on current collectors to achieve smooth current collector transitions and interfaces
- dynamic and static forces, including:
  - types that effect traction systems
  - techniques to minimise the adverse effects
- standards, codes, legislation, supply authority regulations and workplace requirements applicable to electrical traction
- electrical traction voltage and current circuit paths, including:
  - transmission and distribution voltages
  - traction supply system and voltages
  - return and stray current paths, including electrolysis
- relationship of sectioning, section insulator and overlaps/air gaps in a traction power system
- traction power system components, including:
  - function of transformer/rectifiers
  - configuration and purpose of traction overhead wiring systems
  - function of isolators/switches
  - function of the circuit breaker
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident.

## 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:

- relevant and appropriate materials, tools, facilities, equipment, plant and PPE currently used in industry for installing traction overhead wiring systems
- applicable documentation, including workplace requirements, relevant design standards, equipment specifications, regulations, codes of practice and operation manuals.

## Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7>