



Australian Government

Assessment Requirements for UETTDRRT21 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.

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
- using at least four (4) of the following types of system equipment and fittings:
 - support structure
 - span
 - section insulator
 - neutral section
 - midpoint anchor
 - support equipment
 - tension regulators
 - stay/guy wire
 - tramway support network
- using at least two (2) of the following types of traction conductors and cables:
 - catenary
 - dropper
 - contact/trolley*
 - feeder
 - earth 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
- obtaining relevant equipment, tools and personal protective equipment (PPE) required for installing traction overhead wiring systems, including using at least two (2) of the following:

- tensioning equipment*
- specialised tools
- ropes
- geometry profiling equipment
- (*must do)
- 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:

- electrical wiring system components - earth wires, feeder wire, return conductor, insulators, catenary wire, contact/trolley wire, droppers, tensioning equipment, current collectors, tram support networks, tram fittings and bridge/tunnel fittings
- electrical traction circuits, including:
 - types
 - applications
- 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
- profiling overhead traction wire methods, including:
 - factors that impact on current collectors
 - methods to achieving smooth current collector transitions and interfaces
- dynamic and static forces, including:
 - types that effect traction systems
 - effects on effective registration
 - techniques to minimise the adverse effects
- standards, codes, legislation, supply authority regulations and/or enterprise requirements applicable to the electrical traction
- electrical traction voltage and current circuit paths, including:
 - transmission distribution voltages
 - traction supply system and voltages
 - return and stay 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
- reliability and security of traction supply.

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 PPE currently used in industry for installing traction overhead wiring systems
- applicable documentation, including workplace procedures, relevant industry standards, 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>