



Australian Government

Assessment Requirements for UETTD RIS67 Solve problems in energy supply network equipment

Release: 1

Assessment Requirements for UETTDRIS67 Solve problems in energy supply network equipment

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
- solving problems in energy supply network equipment, including:
 - determining the operating parameters of existing energy supply equipment
 - envisaging the likely extent of work from reports and discussions with appropriate personnel
 - using methodical problem-solving techniques
 - solving problems efficiently
 - altering an existing energy supply equipment to comply with specified operating parameters
 - developing energy supply equipment to comply with a specified function and operating parameters
 - determining conditions causing an existing energy supply equipment to be unsafe
 - completing documentation correctly
- solving problems in energy supply network equipment on at least one (1) of the following energy supply network systems:
 - distribution overhead system
 - distribution underground system
 - transmission overhead system
 - transmission underground system
- using at least three (3) of the following distribution/transmission equipment:
 - voltage regulation equipment
 - on load tap changers
 - energy metering
 - demand meters
 - load control

- current transformers
- potential transformers
- dealing with unplanned events on at least one (1) occasion.

Note:

Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases, the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified

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:

- generation, including:
 - primary energy sources
 - power stations
 - power station output
 - acts and legislation relating to generation
 - renewable energy sources and techniques
- transmission, including:
 - system requirements
 - principal components of a power system
 - voltage levels
 - grid systems
 - acts/legislation relating to transmission
 - future trends
- distribution, including:
 - high voltage (HV) distribution systems
 - medium/low voltage (LV) distribution systems
 - radial feeders
 - parallel feeders
 - ring main feeders
 - acts/legislation relating to distribution
- substations, including:
 - purpose
 - location
 - layout
- overhead and underground systems, including:
 - relative merits
 - applications

- planning
- installation
- power distribution system electrical characteristics, including:
 - transmission and distribution systems
 - inductance, capacitance and resistance
- voltage problems in a power distribution system, including:
 - LV
 - unbalanced voltages
 - voltage rises
- voltage regulation, including:
 - autotransformers with on-load tap changer (OLTC)
 - transformers with OLTC
 - static capacitors
 - load control
- control of OLTC, including:
 - regulation relays
 - control circuits
 - line drop compensation
- power distribution system faults, including:
 - type/classification of fault
 - typical causes/effects of faults
 - three phase symmetrical fault levels
 - fault level limitation
- voltage surges in a power distribution system, including:
 - lightning surges
 - switching surges
 - typical surge levels
 - surge impedance, typical values
 - significance of the system surge impedance
- metering and metered quantities, including:
 - purpose
 - energy
 - maximum demand
 - accuracy classes for metering systems
- energy and demand meters, including:
 - construction
 - operation
 - adjustments
 - testing
- metering circuits, including:

- direct metering
- instrument transformer metering
- electronic metering systems and recording meters, including:
 - types
 - applications
 - connections
- load control, including:
 - purpose
 - methods.

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
- 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>