



Australian Government

Assessment Requirements for UETDRSB016 Maintain synchronous condensers

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 4.0.

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 (2) 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) requirements
- identifying hazards, assessing risks, and identifying, applying and monitoring control measures
- obtaining, inspecting and using relevant personal protective equipment (PPE)
- dealing with an unplanned event on at least one (1) occasion
- obtaining and signing relevant work permits in accordance with workplace requirements
- completing relevant work records, reports and documentation
- maintaining at least one (1) of the following windings:
 - stator
 - rotor
- maintaining at least one (1) of the following starter systems:
 - static frequency converter
 - variable speed drive
- maintaining at least one (1) of the following systems:
 - control
 - protection and alarm
 - excitation/automatic voltage regulator (AVR)
- maintaining the following systems:
 - cooling
 - lubrication.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all 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 requirements
- 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 and access authorities
- events constituting an unplanned event or incident
- procedures for responding to an unplanned event or incident
- workplace records, reports and documentation
- evaluation of equipment serviceability
- identification and procurement of materials and apparatus
- operational manuals and system diagrams
- stator and rotor windings, including:
 - types
 - characteristics
 - maintenance requirements
 - insulation measurement
 - common defects and rectification
- starter systems, including:
 - types
 - characteristics
 - maintenance requirements
 - insulation measurement
 - common defects and rectification
- control systems, including:
 - types
 - characteristics
 - maintenance requirements
 - common defects and rectification
 - excitation/AVR
- protection and alarm systems, including:
 - types
 - characteristics
 - maintenance requirements
 - secondary signal injection tests
 - common defects and rectification
- substation fundamentals, including:
 - transformers
 - on-load tap changers (OLTC)
 - balancing reactive plant

- additional components of synchronous condensers, including:
 - prime mover
 - flywheel
 - starter motor
 - clutch
 - hydraulic/pneumatic starter
 - dynamic braking
- system, plant and component diagrams/plans, drawings and manuals
- specialised tools, including:
 - types, construction and function
 - calibration
 - care and maintenance
- fault conditions and symptoms, including:
 - types and typical fault conditions
 - interpretation of mechanical faults
 - interpretation of electrical faults
 - auxiliary systems
 - protection and alarm systems
- synchronous condenser principles, including:
 - ratings
 - control systems
 - synchronising
 - components and ancillary equipment
 - cooling and lubrication systems
 - types, characteristics and capabilities
 - associated control housings
 - serviceability of components
 - operating constraints.

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, equipment and PPE currently used in industry
- applicable documentation, including workplace requirements, 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>