



Australian Government

UEERS0018 Test and commission rail power equipment

Release: 1

UEERS0018 Test and commission rail power equipment

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to test and commission rail signalling power equipment into service on rail networks.

It includes preparing, inspecting, testing and commissioning rail power signalling circuits, equipment and components. It also includes completing connection of wiring circuitry, equipment and components; testing of wiring circuitry, equipment and components; finding and repairing faults; testing of control and indicating equipment; and reporting requirements.

Persons achieving competence in this unit will need to fulfil the applicable state/territory legislated rail safety requirements and comply with relevant codes of practice, rules and/or guidelines.

No other licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEERS0007 Install and maintain non-vital screen-based rail control systems

UEERS0008 Install and maintain non-vital telemetry systems

UEERS0004 Find and repair rail signalling system faults

Competency Field

Rail Signalling

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

1 Prepare to inspect, test and commission power signalling circuits, equipment and components

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) procedures for a given work area are identified, obtained and clarified
- 1.2** Hazards are identified, WHS/OHS risks assessed, and control measures and workplace procedures implemented in preparation for work
- 1.3** Scope of inspection, testing and commissioning is determined from job specifications, design drawings and regulatory requirements
- 1.4** Appropriate safe working person/s is consulted to ensure work activity is coordinated effectively with others involved on the worksite
- 1.5** Materials needed for testing and commissioning of power signalling circuits, equipment and components are obtained in accordance with workplace procedures and checked against job specifications
- 1.6** Tools, equipment and testing devices needed to inspect, test and commission power signalling circuits, equipment and components are obtained in accordance with workplace procedures and checked for correct operation and safety

2 Inspect, test and commission power signalling circuits, equipment and components

- 2.1** WHS/OHS risk control measures and procedures for carrying out work are followed
- 2.2** On-track safe working requirements are identified and applied in accordance with workplace procedures and safety management system
- 2.3** Inspection is carried out and circuits, equipment and components are checked to ensure they are in accordance with manufacturer and system specifications
- 2.4** Inspecting, testing and commissioning work includes installation, termination and operation of the signalling equipment; and checking indicators and signal system operation is completed in accordance with network

- requirements and relevant industry standards
- 2.5 Methods for dealing with unplanned situations are selected on the basis of safety and specified work outcomes
 - 2.6 Inspection, testing, commissioning and repairs are performed efficiently, without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices
 - 2.7 System and design faults are verified using relevant industry technical standards information, fault-finding and diagnostic techniques to identify faulty wiring equipment and components
 - 2.8 Identified irregularities and non-conforming wiring, equipment or components are documented and immediate follow-up action is initiated to ensure faults are rectified
 - 2.9 Faulty signalling equipment is replaced, adjusted and secured in accordance with manufacturer specifications and workplace procedures
- 3 Complete testing and commissioning work and reports**
- 3.1 WHS/OHS work completion risk control measures and workplace procedures are followed
 - 3.2 Inspection and test results are documented in accordance with workplace procedures and faulty or replaced equipment is tagged and despatched to maintain equipment spares
 - 3.3 Operational equipment is handed over to approved person/s in accordance with handover workplace procedures and final documentation is completed

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 UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEN128A Test and commission rail power equipment.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEERS0018 Test and commission rail power equipment

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology 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:

- reading and interpreting specifications correctly
- testing and commissioning signalling circuits, equipment and components to meet operational and technical standards
- using effective fault diagnosis and repair/replacement techniques to specified model level
- confirming circuits, equipment and components operated within specified technical parameters
- testing equipment and instruments
- using tools correctly
- following relevant codes of practice, environmental protection procedures and requirements
- completing relevant technical reports, records and documentation
- dealing with unplanned events
- applying rail safe working practices and relevant industry standards, codes and rail safety regulations
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - implementing workplace procedures and practices
 - using risk control measures
- applying sustainable energy principles and practices.

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:

- power signalling testing and commissioning, safe working practices and relevant standards, codes and regulations, including power signalling system design, encompassing:
 - characteristics
 - diagrams

- specifications
- power signalling components encompassing:
 - types
 - testing
 - adjustments
- power signalling system commissioning encompassing:
 - requirements
 - hazards
 - procedures
 - records and reporting
- rail safe working and safety management systems
- relevant industry standards, codes of practice, regulations and WHS/OHS legislated requirements
- relevant workplace documentation.

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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable simulated workplace operational situations that replicate 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
- resources that reflect current industry practices in relation to testing and commissioning power signalling equipment
- applicable documentation, including workplace procedures, 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=b8a8f136-5421-4ce1-92e0-2b50341431b6>