



Australian Government

UEERS0033 Maintain train detection equipment

Release: 1

UEERS0033 Maintain train detection equipment

Modification History

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

This unit replaces and is equivalent to UEERS0013 Install and maintain train detection equipment.

Modifications this release include:

- Title changed.
- Element titles and performance criteria amended to reflect title change.
- Minor amendments made to Performance Criteria text.
- Performance criteria 1.7, 2.2, 3.2 and 3.3 added.
- Performance and Knowledge Evidence updated for clarity.

Application

This unit involves the skills and knowledge required to maintain train detection equipment in a rail network.

It includes preparing and maintaining train detection equipment. It also includes completing the maintenance of train detection equipment and repairing faults, performing operational tests 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

UEERS0024 Install and maintain rail track circuit leads and bonds

UEERS0031 Maintain rail signalling power supplies

Competency Field

Rail Signalling

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Prepare to maintain train detection equipment

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace 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 the maintenance is determined from maintenance schedules, job specifications, drawings and regulatory requirements
- 1.4** Appropriate rail safe working person/s is consulted to ensure work is coordinated effectively with others involved on the worksite
- 1.5** Materials needed for the maintenance work are obtained in accordance with workplace procedures and checked against job specifications
- 1.6** Tools, equipment and testing devices needed for maintenance work are obtained in accordance with workplace procedures and checked for correct operation and safety
- 1.7** Authorisation to take temporarily out of service or disable systems is obtained in accordance with workplace procedures

2 Maintain train detection equipment

- 2.1** WHS/OHS risk control measures and workplace 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 Maintenance work is carried out in accordance with manufacturer specifications and workplace procedures
 - 2.4 Normal function and operating parameters are confirmed in accordance with appropriate manuals, job specifications and commissioning data
 - 2.5 Fault-finding and diagnostic techniques are used to verify system/faults
 - 2.6 Faulty, damaged or insecure components are replaced/repaired or secured in accordance with manufacturer specifications and workplace procedures
 - 2.7 Maintenance, adjusting and testing work is carried out efficiently, without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices
 - 2.8 Appropriate readings are measured and recorded using relevant test instruments
 - 2.9 Equipment is tested and adjusted in accordance with manufacturer specifications, workplace and equipment operating procedures
 - 2.10 Equipment operational inspections and tests are completed in accordance with job specifications and workplace procedures
 - 2.11 Methods for dealing with unplanned situations are determined on the basis of safety and specified work outcomes
- 3 Complete train detection equipment maintenance**
- 3.1 WHS/OHS risk control work completion measures and workplace procedures are followed
 - 3.2 Confirmation that system is functional and that no alarms are present or indicated
 - 3.3 On-track safe working requirements are removed in accordance with workplace procedures and safety management system
 - 3.4 Calibration of equipment is verified and equipment is confirmed by functional tests in accordance with workplace and equipment operating procedures
 - 3.5 Work completion is documented and appropriate rail

safe working person/s notified in accordance with workplace procedures and relevant reports produced

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 UEERS0013 Install and maintain train detection 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 UEERS0033 Maintain train detection equipment

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- Performance and Knowledge Evidence updated for clarity.

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:

- following, work health and safety (WHS)/occupational health and safety (OHS) and requirements, including:
 - implementing risk control measures
 - rail safe working practices
- applying workplace procedures and practices
- applying environmental protection procedures
- applying and relevant industry standards, codes and rail safety regulations
- interpreting plans and specifications correctly
- maintaining, adjusting and testing equipment
- checking that technical operational specifications are met and equipment is in compliance with work orders
- using tools and test equipment safely
- completing relevant technical reports, records and documentation
- dealing with unplanned events

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:

- train detection equipment maintenance, safe working practices and relevant standards, codes

and regulations, including:

- rail signalling, train detection equipment
- train detection equipment and their components encompassing:
 - track circuits, including jointed and jointless
 - other methods of train detection
 - transmitters and receivers
 - relays
 - track shunts and other testing devices
 - overlay train detection systems
 - coded track circuits
 - diagnostics
- operating principles and parameters encompassing:
 - interpreting circuits diagrams and special controls identified on control tables
 - normal mode operation
 - absence of train
 - presence of train
 - failure modes
 - rightside failure failsafe
 - wrongside failure
 - servicing procedures encompassing:
 - coordination/planning sequence
 - operational test procedures
 - scheduled/preventative maintenance
 - unscheduled/corrective maintenance
 - RE certification of train detection equipment using certifying procedures complying with rail operator and/or enterprise standards
- relevant manufacturer specifications and manuals
- relevant WHS/OHS legislated requirements
- relevant standards, codes, regulations and workplace policies, procedures and 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 maintaining train detection 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>