



Australian Government

UEERS0015 Maintain electronic and microprocessor-based remote control systems

Release: 1

UEERS0015 Maintain electronic and microprocessor-based remote control systems

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 maintain electronic and microprocessor-based remote control systems for a rail network signalling system.

It includes preparing and maintaining electronic and microprocessor-based remote control system. It also includes completing electronic and microprocessor-based remote control system maintenance 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 maintain electronic and microprocessor-based remote control system

- 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 are implemented in preparation for work
- 1.3** Maintenance program/fault/irregularity reports are reviewed to determine work priorities, resources, logistics and site information
- 1.4** Appropriate person/s is consulted to ensure work is coordinated effectively with others affected by the work and authorisations are obtained in accordance with workplace procedures
- 1.5** Materials needed for the work are obtained in accordance with workplace procedures and checked against job specifications
- 1.6** Tools, equipment and testing devices needed for work are obtained in accordance with workplace procedures and checked for correct operation and safety

2 Maintain electronic and microprocessor-based remote control system

- 2.1** WHS/OHS risk control measures and workplace procedures for carrying out work are followed
- 2.2** Equipment inspection and checks are carried out to ensure performance is in accordance with operational specifications
- 2.3** Security of fittings, terminations and mountings are inspected, checked and adjusted, as required, for compliance in accordance with job specifications
- 2.4** Methods for dealing with unplanned situations are selected on the basis of safety and specified work outcomes
- 2.5** Maintenance work is performed efficiently, without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices

- 2.6 Appropriate operating parameters are ascertained from job specifications and commissioning data to enable performance checks to be completed
 - 2.7 Appropriate fault-finding and diagnostic techniques are used to verify symptoms or irregularities
 - 2.8 Symptoms are reproduced, monitored and documented, as required
 - 2.9 System is adjusted and operationally tested in accordance with industry technical standards and design specifications
 - 2.10 Appropriate conclusions are determined from fault indicators, error codes, maintenance records and print-outs to assist fault finding
 - 2.11 Appropriate technical support is obtained, as required
 - 2.12 Faulty components are replaced or repaired in accordance with workplace procedures
 - 2.13 Components are terminated, connected system levels adjusted and parameters set in accordance with job specifications
- 3 **Complete electronic and microprocessor-based remote control system maintenance and report/s**
 - 3.1 WHS/OHS completion risk control work measures and workplace procedures are followed
 - 3.2 System is functionally inspected and tested in accordance with specified job parameters and industry standards
 - 3.3 Maintenance documentation is completed, as required, and equipment is labelled, packaged and returned to service, as required

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 UEENEEN116A Maintain electronic and microprocessor-based remote control systems.

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 UEERS0015 Maintain electronic and microprocessor-based remote control systems

Modification History

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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 one occasion and include:

- interpreting specifications, circuit diagrams and workplace procedures correctly
- using appropriate diagnosis and fault-finding techniques to sub-module level
- maintaining electronic switched and microprocessor-based remote control systems to operational requirements (to sub-module level)
- working efficiently and effectively
- using tools and test equipment correctly
- following relevant codes of practice, work health and safety (WHS)/occupational health and safety (OHS) and 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 WHS/OHS requirements, including:
 - implementing workplace procedures and practices
 - using risk control measures
- applying sustainable energy principles and practices
- completing maintenance and reporting of electronic and microprocessor-based remote control system.

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:

- rail signalling remote control system maintenance, safe working practices and relevant standards, codes and regulations, including:
 - maintenance principles encompassing:
 - maintenance function
 - role of maintenance department
 - WHS/OHS requirements

- maintenance systems encompassing:
 - maintenance terminology
 - preventative maintenance
 - predictive maintenance
 - corrective maintenance
- data acquisition encompassing:
 - plant history cards/files
 - inspection techniques
 - predictive maintenance
 - remote visual inspection
 - non-destructive testing
 - thermography
 - vibration analysis
 - oil analysis
- rail signalling maintenance plans encompassing:
 - characteristics
 - maintenance windows
 - required resources (labour and materials)
 - procedures and records
 - maintenance of rail signalling electronics and microprocessor-based remote control systems
 - components requiring maintenance
- rail safe working practices encompassing:
 - rail enterprise safety standard and procedures
 - rail safe working requirements
 - possessions protection and management
- WHS/OHS requirements
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- 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 maintaining electronic switched and microprocessor-based remote control systems
- 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>