



Australian Government

**Assessment Requirements for UEERS0009
Install and maintain power-operated point
actuating devices**

Release: 1

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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:

- interpreting plans and specifications correctly
- maintaining point actuating devices to operational requirements
- using appropriate fault-finding techniques
- documenting perway defects accurately
- using tools correctly
- following relevant codes of practice, work health and safety (WHS)/occupational health and safety (OHS) and environmental protection procedures and requirements, including:
 - implementing workplace procedures and practices
 - using risk control measures
- 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 sustainable energy principles and practices
- completing the installation/maintenance of power-operated point actuating devices.

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-operated point actuating device installation/maintenance, safe working practices and relevant standards, codes and regulations, including:
 - rail signalling principles - electrical
 - overview of electrical rail signalling encompassing:
 - types of rail signalling/safe working systems, including centralised traffic control (CTC), automatic, controlled and interlocked signalling
 - advantages of electrical over mechanical signalling

- advantages of computer-based interlocking (CBI) over electrical signalling systems
- effects of overhead traction systems on electrical signalling systems (where applicable)
- purpose of elements of an electrical rail signalling system, including signals and aspect systems, train protection systems, point actuating systems, mechanical locking, relay interlocking, CBI, train detection systems, control input devices, indicators, diagrams and monitors, and safe working systems
- rail signalling principles - mechanical
- overview of mechanical rail signalling encompassing:
 - types of mechanical rail signalling systems for different rail traffic, including passenger train, freight train, maintenance vehicles and heritage/tourism train
 - deficiencies of mechanical signalling systems, including automatic, controlled and interlocked signalling
 - effects of overhead traction systems on mechanical signalling systems (where applicable)
 - effects of external factors on the mechanical rail signalling system, including rail overhead, gradients/terrain, environmental and civil configuration
 - purpose of elements of a mechanical rail signalling system, including signals, point actuating systems, locking and train detection systems, control input devices, indicators, diagrams and monitors, mechanical interlocking frames, safe working systems and electro-mechanical interfaces
- rail signalling - point actuating devices
- equipment and their components encompassing:
 - point actuating mechanisms, including mechanical, pneumatic, hydraulic and electric powered units
 - blade and operation detection devices
 - on-rail locking devices
 - off-rail locking devices
 - swing nose devices
 - ironwork and fixtures
 - equipment, including point machines, detectors, claw/clamp locks, swing nose mechanisms and in-bearer mechanisms
- operating principles encompassing:
 - point operation, normal and reverse
 - point locking, normal and reverse
 - point detection, normal and reverse
 - detectors
 - off-rail locking operation
 - on-rail locking operation
 - electric operation of contactors, motor control and detection circuits
 - interpreting circuit diagrams to evaluate correct operation and relationship to other signalling circuits

- normal mechanical movement
- failure mode mechanical movement, including wrong side and right-side conditions identifying if movement should be possible
- correct operation in accordance with control and locking tables
- servicing procedures encompassing:
 - maintenance documentation
 - coordination/planning sequence
 - operational test procedures
 - scheduled/preventative maintenance
 - unscheduled/corrective maintenance
 - certifying point equipment (commission and decommission)
 - certifying procedures applicable for compliance with rail operator/enterprise standards
- safe working practices and relevant standards, codes and regulations
- relevant job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace policies and procedures, including rail transport operator safety management system.

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 onsite power-operated point actuating devices
- 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>