



Australian Government

RIIRAI605D Establish and maintain an underground mine mechanical plant management system

Release: 3

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Modification History

Release	Comment
1	This unit replaces RIIRA605A Establish and maintain an underground mine mechanical plant management system
2	Plan and Prepare element added; removed Install element on the basis that this is an Establish and Maintain unit
3	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to establish and maintain an underground mine mechanical plant management system in Coal mining.

This unit is appropriate for those working in management or technical specialist roles

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

Unit Sector

Coal mining (underground)

Elements and Performance Criteria

1. Plan and prepare underground mine mechanical plant management system	1.1 Access, interpret and apply underground mine mechanical plant management system documentation and ensure the work activity is compliant 1.2 Obtain, read, interpret, clarify and confirm work requirements 1.3 Identify and address potential risks, hazards and environmental issues and implement control measures 1.4 Identify design/selection specifications and critical aspects of the underground mine mechanical plant management system from a
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	comprehensive analysis of operating requirements 1.5 Identify systems options from an analysis of all relevant technical, operational and financial information 1.6 Select the preferred systems options on the basis of performance against specification requirements 1.7 Develop, in consultation, document and have approved policies and system procedures 1.8 Define, document and have approved, roles and responsibilities of all relevant personnel 1.9 Identify, source and provide the resources for the operation of the system
2. Identify, analyse and evaluate hazards and risks associated with the use of mechanical equipment in an underground coal mine	2.1 Identify, evaluate and clarify mine conditions which contribute to explosive atmospheres 2.2 Identify, evaluate and clarify conditions which contribute to flammable environments 2.3 Identify, evaluate and clarify hazards caused by disruption to the mine ventilation system 2.4 Identify, analyse and evaluate hazards and risks relating to mechanical plant
3. Identify, analyse and evaluate hazards and risk control options and measures	3.1 Identify, analyse and evaluate explosion protection control techniques for mechanical equipment 3.2 Identify, analyse and evaluate fire protection and prevention methods and systems on mechanical equipment 3.3 Identify, analyse and evaluate methods and systems to control engine pollutants from mechanical equipment 3.4 Identify, analyse and evaluate methods and systems to control hazardous substances initiated from or used by mechanical equipment 3.5 Develop systems to maintain the integrity of safety critical functions of mechanical equipment 3.6 Develop systems to control hazards for energy dissipation and isolation systems on mechanical equipment 3.7 Develop systems to control hazards in lifting and towing systems for mechanical equipment 3.8 Develop systems to protect people in their interrelationship with mechanical equipment in the underground environment 3.9 Develop systems to prevent failure of winding and personnel transport equipment 3.10 Evaluate the uses of mine monitoring and information systems

	to control hazards and risks on mechanical equipment
4. Establish the mine mechanical plant management system	4.1 Establish mechanical plant objectives, systems, descriptions and responsibilities and incorporate into the mechanical plant management system 4.2 Consult with relevant stakeholders in the development of the mechanical plant management system 4.3 Design mechanical plant management systems to satisfy the operational systems and conditions of the mine 4.4 Incorporate maintenance and inspections systems to ensure the equipment is safe to operate 4.5 Incorporate systems to monitor and test the performance of safety critical functions on mechanical plant and equipment 4.6 Incorporate systems to control noise, dust, other emissions and other hazardous substances 4.7 Incorporate systems to develop safe work procedures 4.8 Incorporate systems for the management of mechanical contractors 4.9 Develop and establish mechanical engineering standards 4.10 Develop and establish mechanical equipment information recording and reporting procedures, including defect reporting and rectification 4.11 Establish a program, including systems and procedures, to satisfy mechanical equipment training requirements 4.12 Incorporate audit and review requirements and update procedures into the mine mechanical plant management system.
5. Audit and review the mechanical plant management system	5.1 Audit mine mechanical engineering standards for compliance with statutory and mine site requirements 5.2 Audit mine mechanical equipment monitoring systems operations for compliance with statutory and mine site requirements 5.3 Audit the maintenance program and procedures for compliance with the Mechanical Plant Management System and statutory requirements 5.4 Audit recording and reporting systems for compliance with the Mechanical Plant Management System 5.5 Audit mechanical plant management training program for currency, relevance and compliance with the requirements of the Mechanical Plant Management System 5.6 Establish procedures for non-compliances revealed by audit and modify the management plan where appropriate

	5.7 Review the Mechanical Plant Management System
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Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

No equivalent unit

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIRAI605D Establish and maintain an underground mine mechanical plant management system

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- implements procedures and techniques for the safe, effective and efficient completion of establishing and maintenance of an underground mine mechanical plant management system including:
- accessing, interpreting and applying procedures for;
 - managing technical information
 - managing site/legislative requirements
 - establishing recording and reporting systems
 - conducting briefings and handover details
 - applying the principles of mine design
 - hazard identification and risk management
 - work planning and coordination
 - training needs analysis
 - using manufacturers' instructions
 - using effective communication

- works effectively with others to establish and maintain an underground mine mechanical plant management system including:
 - managing people and processes
 - resolving conflict
 - coordinating human, financial and physical resources
 - developing, initiating and administering work plans
 - interpreting and applying operational performance data
 - engaging internal and external stakeholders
- demonstrates completion of the establishment and maintenance of an underground mine mechanical plant management system that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - identifying the relevant information and scope of the work
 - identifying the full range of specification requirements
 - identifying all aspects of the underground mine mechanical plant
- identification and selection of viable options for the establishing and maintenance of an underground mine mechanical plant management system that best meet the required outcomes through:
 - identifying all aspects of flammable environment
 - identifying options to prevent failure of winding and personnel transport equipment
 - identifying options to control hazards and risks relating to mine mechanical plant and equipment, including explosion protection, fire protection and prevention, lifting and towing systems, hazardous substances and the interrelationship between people and mechanical equipment
 - selecting the preferred management system options
 - establishing the audit and review system

Knowledge Evidence

The candidate must demonstrate knowledge in establishing and maintaining an underground mine mechanical plant management system through:

- legislative, organisation and site requirements and procedures for;
 - risk management
 - managing mechanical plant and equipment
 - organisational change and development
 - project management
 - emergency response and disaster planning
 - audit review
 - operating mechanical plant and equipment
 - mine design relating to mine plant, services and infrastructure
 - energy sources, including protection and reticulation systems for electrical, hydraulic, compressed air, diesel
- data from monitoring systems and equipment

- mechanical engineering standards
- safety critical functions of mechanical equipment
- mine design relating to mechanical plant and equipment
- options to prevent failure of winding and personnel transport equipment
- specification for mine plant and equipment
- control hazards and risks relating to mine mechanical plant and equipment, including explosion protection, fire protection and prevention, lifting and towing systems, hazardous substances and the interrelationship between people and mechanical equipment
- mine fires; the types, sources of ignition and possible impacts on plant and equipment
- computer based systems relating to the monitoring, and operation of mine mechanical plant and equipment
- firefighting systems

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal	1	1 Year

Mining, Extractive (Quarrying) and Civil Construction	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.	

*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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