



Australian Government

Department of Education, Employment and Workplace Relations

RIIRAI507A Implement the underground coal mine mechanical plant management plan

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers implementing the mechanical plant management plan in underground coal mine. It includes: planning and preparing for the implementation of the management plan; implementing the hazards and risk control options and measures; and auditing the management plan.

Application of the Unit

This unit is appropriate for those working in a management role or as a technical specialist, within:

- Coal mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for the implementation of the management plan	1.1. Access, interpret and apply compliance documentation relevant to implement the mechanical plant management plan in underground coal mine 1.2. Access, interpret and clarify the underground mine mechanical plant management plan 1.3. Identify and communicate roles and responsibilities, as specified in the underground Mine Mechanical Plant Management Plan to all involved persons 1.4. Identify, forecast, obtain and allocate / schedule resources required for the implementation of the underground Mine Mechanical Plant Management Plan 1.5. Identify training needs. 1.6. Encourage, receive, review and, where appropriate, implement suggestions and recommendations for changes to underground mine mechanical plant management procedures
2. Implement the hazards and risk control options and measures	2.1. Implement procedures for the explosion protection of mechanical equipment 2.2. Implement procedures to control flammable environment 2.3. Implement procedures to control hazards caused by disruption to the mine ventilation system 2.4. Implement fire protection and prevention procedures on mechanical equipment 2.5. Implement procedures to control engine pollutants, initiated from or created by mechanical equipment 2.6. Implement procedures for control of hazardous substances initiated from or used by mechanical equipment 2.7. Implement procedures to maintain the integrity of safety critical functions of mechanical equipment 2.8. Implement procedures to control hazards in lifting and towing systems for mechanical equipment 2.9. Implement procedures to protect people in their interrelationship with mechanical

	equipment in the underground environment 2.10. Implement procedures to control hazards for energy dissipation and isolation systems on mechanical equipment 2.11. Implement procedures to prevent failure of winding and personnel transport equipment
3. Audit the management plan	3.1. Review the effectiveness of the underground mine mechanical plant management systems in accordance with the requirement of the underground Mine Mechanical Plant Management Plan 3.2. Audit the maintenance program and procedures in accordance with the underground Mine Mechanical Plant Management Plan and statutory requirements 3.3. Audit recording and reporting systems in accordance with the underground Mine Mechanical Plant Management Plan 3.4. Audit the mechanical plant management training program for currency, relevance and compliance with the underground Mine Mechanical Plant Management Plan 3.5. Report on non-compliances revealed by audit

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to implement the mechanical plant management plan in underground coal mine:

- apply legislative, organisation and site requirements and procedures
- access, interpret and apply:
 - technical information
 - site / legislative requirements
 - records and reports
 - briefings and handover details
- apply hazard identification and risks management procedures
- apply plant and equipment management requirements and procedures
- apply work planning and coordination procedures
- apply training needs analysis
- interpret and apply manufacturer instructions
- apply effective communication techniques
- apply and monitor data from monitoring systems and equipment

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to implement the mechanical plant management plan in underground coal mine:

- legislative and statutory requirements for mechanical plant and equipment
- the emergency response and disaster processes and techniques
- audit review processes and techniques
- mechanical engineering standards
- safety critical function of mechanical equipment
- mine operating procedures for mechanical plant and equipment
- explosion protection techniques
- hazards associated with diesel engines
- options to control hazards and risks relating to mine mechanical plant and equipment, including fire protection and prevention, lifting and towing systems, storage of
- hazardous substances and the interrelationship between people and mechanical equipment
- energy sources, including protection and reticulation systems for electrical,

hydraulic, compressed air, diesel

- mine fires; the types, sources of ignition and possible impacts on plant and equipment
- a basic knowledge of computer based systems relating to the monitoring, and operation of mine mechanical plant and equipment
- fire fighting systems
- specification for mine plant and equipment

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for the implementing of mechanical plant management plans in underground coal mine • implementation of procedures and techniques for the safe, effective and efficient implementing of mechanical plant management plans in underground coal mine • the identification of the relevant information and scope of the work required to meet the required outcomes • the identification of viable options and the selection of options that best meet the required outcomes • working with others to implement mechanical plant management plans in underground coal mine • consistent successful implementing of mechanical plant management plans in underground coal mine
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of

	assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Assessment of this competency requires typical resources normally used in a civil works environment. Selection and use of resources for particular worksites may differ due to site circumstances. • Where applicable, physical resources should include equipment modified for people with disabilities. • Access must be provided to appropriate learning and/or assessment support when required.
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Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate procedures and techniques for the safe, effective and efficient achievement of the required outcomes • identification of the relevant information and scope of the work required to meet the required outcomes • identification of viable options and the selection of options that best meet the required outcomes • consistently achieving the required outcomes • first hand testimonial and documentary evidence of the candidate's: • working with others to implement mechanical plant management plans in underground coal mine • provision of clear and timely required support and advice on the implementing of mechanical plant management plans in underground coal mine
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Interpret is defined as:	the understanding needed by the person within their job role
Relevant compliance documentation may include:	- legislative, organisation and site requirements and procedures - manufacturer's guidelines and specifications - Australian standards - code of practice - Employment and workplace relations legislation - Equal Employment Opportunity and Disability Discrimination legislation
Training applies to:	- mine workers - tradespeople - permanent employees - contractors - mine officials - other special requirements
Mine mechanical plant management plan establishes the procedures for maintaining a safe environment and may include:	- hazard identification and quantification - risk assessment - authority and responsibility - controls established to manage identified risks - reporting and communication - document control - audit and review <i>And may include procedures for:</i> - explosion protection of mechanical equipment - control of flammable environments - fire protection and prevention - control of hazardous substances initiated from or created by mechanical equipment mine plan - disruption to the mine ventilation system, - lifting and towing systems - inter relationship between people and mechanical equipment

	• control of hazards for energy dissipation and isolation • control of hazardous substances • failure of winding and personnel transport equipment • training and education
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Safe work procedure may include:	• cutting and welding in coal mines • energy isolation and dissipation • confined spaces
Hazard is defined as:	• a source of potential harm or a situation with a potential to cause loss
Hazards and risk control measures identified in the underground mine mechanical plant management plan may include:	• explosion protection of mechanical equipment • fire initiate and/or supported by mechanical equipment • hazardous substances used for mechanical equipment • toxic substances generated by mechanical equipment • the release of uncontrolled kinetic energy (unplanned movements) on mechanical equipment • the interaction and/or failure of transport and production equipment • the use and storage of high pressure fluids • moving and rotating parts on mechanical equipment • fluid injection incidents • dangerous goods, e.g. LPG, flammable liquids
Hazardous environment may include but is not limited to:	• coal storage bins • reclaim tunnels • confined spaces • gases • restricted work area • flammable environments are those related to heat sources, fuel sources and ignition sources for e.g. engine wiring, hydraulics in engine bays
Interrelationship with mechanical equipment in the underground environment may include:	• access systems • guarding • remote and/or automatic control • restricted working areas • safe standings/operating zones • ergonomics and vibrations • vision • manual handling • working at heights • emergency egress systems
Hazards associated with transport	• tyre and rim failure

equipment and other plant may include:	• interaction between light and heavy vehicles • overhead power lines • restricted vision • equipment working around draglines
Mechanical plant management system establishes procedures for maintaining safe equipment, including:	• hazard identification and quantification • risk management • consultation • authority and responsibility • controls established to manage identified risks • reporting and communication • document control • audit and review
Audit is defined as:	• a systematic examination against defined criteria to determine whether activities and related results conform to planned arrangement, and whether these arrangements are implemented effectively and are suitable to achieve the organisation's policy and objectives
Maintenance is to restore or keep at the level to which it was originally designed, by:	• inspection and testing of plant and equipment • monitoring of plant and equipment • servicing of equipment • repairing of equipment • overhauling of equipment

Unit Sector(s)

Resources and Infrastructure

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.