



Australian Government

Department of Education, Employment and Workplace Relations

RIIERR501A Implement underground coal mine emergency preparedness and response systems

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers implementing and maintaining underground coal mine emergency management systems. It includes: planning and preparing for implementation of and implement the management system; implementing post-incident management procedures; and auditing the management system.

Application of the Unit

This unit is appropriate for those working in management or technical specialist roles, 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 implementation of management system	1.1. Access, interpret and apply compliance documentation relevant to implementing and maintaining underground coal mine emergency management systems 1.2. Identify and interpret the legislative and site requirements related to emergency preparedness and response management 1.3. Access, interpret and clarify the management system 1.4. Identify and communicate to all persons, roles and responsibilities, as specified in the emergency preparedness and response plans 1.5. Identify, forecast, obtain and allocate/schedule resources required for the implementation of the management system 1.6. Identify training needs
2. Implement the management system	2.1. Implement the allocation and installation of resources in accordance with the management system 2.2. Receive and communicate incident information in accordance with the management system 2.3. Assess and communicate the nature and scope of the incident in accordance with the management system 2.4. Identify and implement emergency response and evacuation plans in accordance with the management system 2.5. Implement procedures for monitoring, recording and reporting on emergency incidents according to legislative requirements and those of the management system 2.6. Implement procedures for the collection, analysis and validation of emergency preparedness and response data 2.7. Implement the emergency management system training plan 2.8. Develop and implement action plans to manage the situation / incident in accordance with the emergency plan 2.9. Deploy resources to meet the requirements of the action plan 2.10. Assess and communicate

	effectiveness of action plan to achieve required outcomes in accordance with the management system 2.11. Communicate incident information in accordance with the management system
3. Implement post-incident management procedures	3.1. Contribute to plans to manage post-incident actions in accordance with legislative and site requirements 3.2. Implement post-incident action plans in accordance with the management system 3.3. Contribute to investigations into the nature and cause of the situation / incident and submit relevant reports in accordance with the management system 3.4. Encourage, receive, review and, where appropriate, implement suggestions and recommendations for changes to the management system
4. Audit the management system	4.1. Audit emergency preparedness and response systems and procedures for compliance with legislative requirements and the emergency management system 4.2. Audit emergency preparedness and response communication and recording systems for compliance with legislative and site requirements 4.3. Audit the emergency management system training plan for currency, relevance and compliance with legislative and site requirements

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 and maintain underground coal mine emergency management systems:

- apply legislative, organisation and site requirements and procedures
- access, interpret and apply technical information relevant to emergency preparedness and response
- access and analyse emergency preparedness and response information related to the mine
- interpret and apply design criteria for emergency preparedness and response systems and plans
- collect, collate and interpret incident / emergency data
- apply fault-tree analyses
- conduct investigations and prepare reports
- communicate effectively in the workplace
- conduct incident de-briefs
- access, interpret and apply data from monitoring systems and equipment
- operate hand held monitoring equipment
- implement the emergency preparedness and response training program
- apply risk management processes and techniques

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 and maintain underground coal mine emergency management systems:

- legislative and site requirements for emergency preparedness and response systems
- legislation applicable to mines
- emergency response planning processes and techniques
- audit and review processes and techniques
- site document control requirements
- training and assessment principles
- industry and legislative stakeholders
- mine incidents and risks
- classification of incidents
- structure of emergency procedures guidelines
- legal requirements of incident management teams

- self-escape, aided rescue and respond to incident philosophies , systems and equipment
- risk management principles and techniques
- structure of emergency organisations
- structure, roles, capabilities and limitations of external services and agencies relevant to emergency preparedness and response
- intervention and control techniques for heating, fires, explosions, outburst, extrication or inrushes
- the effects of heat and humidity
- the effects of visibility
- escape strategies and technology
- environmental risks and controls
- equipment requirements for different types of emergency
- ventilation and its influence on incidents
- deployment of personnel underground
- procedure/policy for re-deployment of personnel underground after evacuation
- call-out procedures
- emotional effects of emergencies on rescuers and mine personnel
- titles and roles of members of incident management team
- the requirements and structure for fresh air base
- legal implications of incidents
- the role of stakeholders
- numbers needed to run the mine at planned operational levels
- equipment handling
- economic considerations and decisions
- insurance policies and considerations
- mine closure procedures and the legislative implications
- sealing procedures and the legislative implications
- de-briefing processes
- emergency incident management

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 implementing and maintaining underground coal mine emergency management systems • implementation of procedures and techniques for the safe, effective and efficient implementation and maintenance of underground coal mine emergency management systems • 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 and maintain underground coal mine emergency management systems • consistent successful implementation and maintenance of underground coal mine emergency management systems
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 the work 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 to apply in implementing and maintaining underground coal mine emergency management systems • 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 and maintain underground coal mine emergency management systems • provision of clear and timely required support and advice on the implementation and maintenance of underground coal mine emergency management systems
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.

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
Emergency management system is a documented system for the control of emergencies and the resources put in place as a requirement of this system, including:	• hazard identification and quantification • risk assessment • authority and responsibility • controls established to manage identified risks • reporting and communication • document control • audit and review
Emergency management system may include procedures for:	• mine atmosphere monitoring • ventilation systems and usage • inertisation techniques • mine plans • trigger action response plans • emergency procedures • training and education • liaison with external agencies
Interpret is defined as:	• the understanding needed by the person within their job role
Communications can include:	• radio / PED • telephone / DAC • telemetry • verbal • written • computers • runners
Resources may include:	• mine services

	• mine personnel • emergency equipment • Internet mine services and resources • contractors • insurance companies • suppliers • local community • manufacturers • Inspectorate • Joint Coal Board • police • Mines Rescue Service • fire brigades • ambulance • medical staff • hospital • critical incident stress debriefing organisations • local emergency management organisations • community service organisations • clergy • federal, state and local government • media • coroner's representative • security services • solicitors • district check inspector • mutual response from other mines • engineers • inertisation • down-hole camera • drill rigs • forensic • self escape and first response equipment • fire fighting equipment • rescue equipment • mining equipment • transport • specialised equipment from external sources • monitoring and analysis equipment
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Incidents may include:	• explosion • fire • roof fall • strata failure • inrush • outburst • irrespirable atmosphere • environmental incident • hazard chemicals • explosives • vehicle accidents • wind blast • failure of ventilation control devices/appliances
Types of incident can be identified as:	• fatality • serious accident • high potential incidents • medically treated • accident • underground explosion or fire • ignition • spontaneous combustion • surface fire which disrupts operations • environmental incidents • bomb threat • terrorist attack • biological incidents • sabotage
Emergency preparedness and response data may include:	• gas levels and trends • change in temperature • change in ventilation • visibility • escape route conditions • status of caches, quick fill stations and first response stations • root cause of the emergency incident • status of communication equipment • status of monitoring equipment • location and condition of persons • hazards identified on escape
An Action Plan is:	• A list of activities developed as a prepared response to assist in the control of an incident,

	e.g. fire, where such controls are not covered by the site emergency management system. Action plans may be different for each incident and developed at the time of the incident occurring
Post-incident management is the control of activities arising from an incident and may include:	• legal advice • environmental aspects • critical incident stress de-briefing • de-briefing • interviewing • investigations • witness interview statements • restoration of normal operations • media releases • public relations • employee welfare and family support • security of evidence • liaison with statutory / legal bodies • investigations required by legislation • review of emergency procedures • documentation of ongoing operations • restoration of emergency preparedness
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

Unit Sector(s)

Emergency Response and Rescue

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.