



Australian Government

Department of Education, Employment and Workplace Relations

RIIERR204A Provide aided rescue to endangered personnel

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers providing aided rescue to endangered personnel in underground mines. It includes assessing the incident scene and planning the rescue strategy; extricating and evacuating to fresh air; and carrying out post-incident requirements.

Application of the Unit

This unit is appropriate for those working in operational, service and maintenance roles, in underground mines, within:

- Coal mining
- Metalliferous 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. Assess incident scene and plan rescue strategy	1.1. Access, interpret and apply compliance documentation relevant to providing aided rescue to endangered personnel in underground mines 1.2. Obtain and interpret incident information and data to determine the hazards involved in the rescue operation, including mine monitoring data and trends 1.3. Determine the locations of endangered mine worker(s) and the best route and method to travel to that location 1.4. Determine the best location for a fresh air base 1.5. Establish communication with emergency control personnel and fresh air base 1.6. Test and check emergency equipment 1.7. Test the mine atmosphere and determine if it is an irrespirable atmosphere 1.8. Obtain the personal protective equipment (PPE) and breathing apparatus as determined by the incident management team 1.9. Assess the situation to select the safest, most effective, extrication method from entrapment 1.10. Assess threats/dangers to mine worker and rescuer 1.11. Communicate effectively with emergency control personnel 1.12. Locate and access emergency breathing apparatus caches 1.13. Identify the need for, and organise additional rescue resources and equipment 1.14. With reference to the mine plan, identify escape route and alternative escape route from the incident scene to fresh air base 1.15. Confirm the rescue strategy as determined by the incident management team
2. Extricate and evacuate to fresh	2.1. Isolate mine services when required, and

air	secure incident site for safe entry 2.2. Assess physical and emotional conditions of mine workers and administer emergency First Aid and provide support where necessary 2.3. Don and test the breathing apparatus to manufacturer's guidelines 2.4. Extricate mine worker from entrapment according to the agreed plan 2.5. Evacuate from incident scene, following escape strategy, by the established or alternative escape route 2.6. Follow determined route of travel at optimum rate of travel 2.7. Continuously monitor the mine atmosphere and mine environmental conditions 2.8. Evaluate the need for, and locate and retreat to a place of safety/build barricade to protect personnel from adverse conditions if necessary 2.9. Maintain communication with emergency control and fresh air base personnel to advise of progress and receive support information/instruction 2.10. Monitor physical and emotional condition of mine worker(s) and other rescue team members and provide support 2.11. Monitor air/oxygen usage and adjust rate of travel where necessary 2.12. Ensure efficient changeover/refill of self rescuer/breathing apparatus within determined operational timeframes
3. Carry out post-incident requirements	3.1. Provide details of rescue to relevant personnel in accordance to legislation and site requirements 3.2. Evaluate the need for, and refer mine worker(s) and self for voluntary counselling

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 provide aided rescue to endangered personnel:

- apply legislative, organisation and site requirements and procedures
- obtain and interpret incident information and data
- apply risk management processes and techniques
- inspect, put on and use breathing apparatus
- interpret and respond to adverse environmental conditions
- read mine plans and orientate and navigate in mine
- use communication systems
- identify alternative escape routes
- access and use self escape equipment
- work as a team member
- communicate effectively
- observe and report mine conditions
- access, interpret and apply data from monitoring systems and equipment
- operate hand held monitoring equipment
- observe hygiene requirements

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 provide aided rescue to endangered personnel:

- legislative and site requirements for rescue operations
- risk management and assessment
- types and causes of incidents in underground mines
- key indicators of mine incidents
- relevant geological and survey data
- effects of hot and humid atmospheres
- location and distribution of caches
- trigger points to initiate emergency response to alarms
- barricades and barricading methods
- location and purpose of a place of safety
- orientation and navigation in mines
- evacuation resources and equipment

- guidance systems and markers
- mine emergency plans
- implications of lack of visibility
- escape routes and alternative escape routes
- types of adverse environmental conditions such as smoke, visibility, dust, water
- basic ventilation systems
- types and effects of mine gases
- emotional conditions experienced by mine workers
- emergency First Aid
- travel speeds
- signs and symptoms of heat-related illnesses
- isolation of mine energy sources
- monitoring systems
- communication systems

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 providing aided rescue to endangered personnel • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of aided rescue of endangered personnel • working with others to undertake and complete the aided rescue of endangered personnel that meets all of the required outcomes • consistent timely completion of procedures for providing aided rescue to endangered personnel that safely, effectively and efficiently meets the required outcomes
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.
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 requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: • working with others to provide aided rescue to endangered personnel
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
Incidents may include:	• major accident or fatality • underground explosion or fire • ignition • rock burst/outburst • spontaneous combustion • environmental incidents
Causes of incidents may include:	• explosion • fire • roof fall • strata • inrush • irrespirable atmosphere • Hazchem • explosives • vehicle accidents • wall collapse • wind blast • rupture to gas drainage lines • disruption to ventilation • hot and humid atmosphere
Communications may include:	• radio • telephone • telemetry • verbal • written

	• computers • runners • DAC • PED • signals
Irrespirable atmosphere is considered:	• an atmosphere which is unsafe for a person to breathe as a result of either oxygen depletion or the presence of: • toxic fumes • gases • contaminants
Rescue resources and equipment may include:	• vehicles/ transport • competent personnel • breathing equipment • safety/emergency equipment • atmosphere monitoring equipment • hydraulic and pneumatic rescue equipment • rope equipment • mining equipment • incident-specific equipment such as body bags • specialised equipment from external sources • monitoring and analysis equipment • refuge/change-over stations • inertisation plant • emergency communication equipment • First Aid/resuscitation equipment
Physical conditions of a mineworker may include:	• heat-related illness • injuries from slips/trips/falls • respiratory problems • physical exhaustion • nausea • gas poisoning • excessive oxygen use
Emotional conditions of a mineworker may include:	• panic • fright • stress • distress • claustrophobia • anxiety • indecision • impaired judgement

Mine environmental conditions may include:	• temperature • humidity • noise • gas levels • dust and air-borne contaminants • condition of roof and sides • water/mud • drive conditions • reduced visibility
Self rescuer/breathing apparatus may include:	• self-contained closed oxygen breathing apparatus, including chemically produced oxygen • self-contained open circuit compressed air breathing apparatus • self-contained oxygen based self rescuer

Unit Sector(s)

Emergency Response and Rescue

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.