



Australian Government

Department of Education, Employment and Workplace Relations

RIIRAI612A Establish and maintain underground product haulage and transport systems

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers establishing and maintaining underground product haulage and transport systems in the metalliferous mining industry. It includes: developing product haulage and transport systems; selecting equipment for product haulage and transport systems; establishing installation and commissioning procedures; establishing systems for the operation and maintenance of product haulage and transport systems and equipment; and establishing systems for audit and review of product haulage and transport systems and equipment.

Application of the Unit

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

- 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. Develop product haulage and transport systems	1.1. Access, interpret and apply compliance documentation relevant to establishing and maintaining metalliferous mining underground product haulage and transport systems 1.2. Identify the requirements for, and purpose of product haulage and transport systems in accordance with the system of mining 1.3. Identify systems options from an analysis of all relevant technical, operational and financial information 1.4. Develop a specification for the product haulage and transport system from a comprehensive analysis of mine needs 1.5. Select preferred systems options on the basis of performance against criteria
2. Select equipment for product haulage and transport systems	2.1. Identify the requirements for, and purpose of product haulage and transport equipment against systems requirements 2.2. Conduct a detailed scoping of the work requirement and develop key selection criteria, including hazard identification and risk analysis 2.3. Develop a specification for the required product haulage and/or transport equipment 2.4. Select the preferred equipment solutions on the basis of performance against criteria
3. Establish installation and commissioning procedures	3.1. Establish procedures to identify hazards and analyse and evaluate risks associated with the installation of product haulage and transport systems and equipment 3.2. Develop and establish procedures for integrating new and existing mine product haulage and transport systems and processes 3.3. Develop safe operating procedures and rules from a detailed analysis of legislative and worksite requirements 3.4. Develop and establish product haulage and transport systems and equipment installation and commissioning procedures 3.5. Establish a program, including systems and procedures, to satisfy identified product

	haulage and transport systems training requirements 3.6. Establish emergency response and evacuation <i>plans</i> and procedures in accordance with site requirements
4. Establish systems for the operation and maintenance of product haulage and transport systems and equipment	4.1. Develop operational procedures for product haulage and transport systems and equipment and incorporate into site documentation 4.2. Develop maintenance procedures for product haulage and transport systems and equipment from site and legislative requirements, and incorporate into site documentation 4.3. Develop and establish procedures for reviewing and modifying work processes
5. Establish systems for audit and review of product haulage and transport systems and equipment	5.1. Establish procedures to evaluate and confirm system/equipment compliance with statutory and site requirements 5.2. Identify and assess future product haulage and transport systems and equipment requirements and incorporate into planning processes 5.3. Establish procedures to confirm the currency of and compliance with product haulage and transport maintenance and safety standards 5.4. Establish the system of recording and reporting product haulage and transport equipment information 5.5. Establish procedures for incorporating feedback into the audit/review system 5.6. Establish procedures to confirm the currency, relevance and compliance with the training program against identified requirements 5.7. Establish procedures for response to instances of non-compliance or other discrepancies/deficiencies revealed by audit 5.8. Audit emergency response and evacuation plans and procedures for compliance with 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 establish and maintain underground product haulage and transport systems:

- apply legislative, organisation and site requirements and procedures
- access, interpret and apply:
 - technical information
 - briefings and handover details
- apply hazard identification and risk management processes
- apply work planning and coordination procedures
- apply training needs analysis
- interpret and apply manufacturer's instructions
- apply maintenance survey requirements and procedures

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 establish and maintain underground product haulage and transport systems:

- audit review processes and techniques
- computer based systems
- emergency response and evacuation planning processes and techniques
- fire fighting systems and precaution rules
- geological structures
- legislative and statutory requirements and instructions including transport rules, maintenance schemes, standard operating procedures, training, battery charging, positioning of fuel depots, conveyor belts
- maintenance surveys
- mine design relating to product haulage and transport systems and equipment
- mine operation procedures
- mine plans
- mine reporting procedures
- power sources including electrical, hydraulic, pneumatic, diesel
- product haulage and transport systems and equipment statutory inspection requirements
- product haulage and transport systems equipment management requirements
- product haulage and transport equipment and systems; the types, uses,

characteristics and limitations appropriate for safe operation at the mine site

- risk management procedures
- safety design features of product haulage and transport systems
- site environmental monitoring requirements
- specification design criteria including noise, dust, lighting, ergonomics, remote control, physical clearance, confined space, visibility, seating vibration and machine equipment and personal protection
- stores system
- training and assessment 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 the establishing and maintaining of underground product haulage and transport systems • implementation of procedures and techniques for the safe, effective and efficient completion of the establishing and maintenance of underground product haulage and transport systems • the identification of the relevant information and scope of the work required to meet the required outcomes • the identification of viable program options and the selection of programs that best meet the required outcomes • working with others to establish and maintain underground product haulage and transport systems • consistent and timely completion of the establishing and maintenance of underground product haulage and transport 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 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 • 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 establish and maintain underground product haulage and transport systems • consistent and timely gaining of approval of underground product haulage and transport systems • provision of clear, timely required support and advice on the implementation of underground product haulage and transport 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
Transport systems include capacities for personnel, equipment/materials and product and may include:	• wheeled, including: • rubber tyred man transport • multipurpose vehicles • forklifts • front end loader • skid steer loader • railed, including: • locomotives (electric/diesel) • rolling stock • skidded • water borne • pipeline, including: • batching stations • dewatering systems • water reticulation pumping station • conveyor system, including: • conveyor belts • drive heads • tail ends transfer points • surge bins • fabricated bins
Specifications may include:	• performance requirements • costs • dimensions

	• capacity • safety and health requirements • training requirements • key selection criteria
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Hazard is defined as:	• a source of potential harm or a situation with a potential to cause loss
Risk is defined as:	• the chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood
Safe operating procedures are:	• also known as standard operating procedures, safe working procedures and standard working procedures
Site documentation and training policy may include:	• statutory and legislative requirements • management plans and procedures
Maintenance may be divided into:	• predictive • preventive • breakdown
Planning may include:	• interpreting and communicating information • business/performance plans • location • tender specifications • resources • statutory/legal/organisational requirements and control • resource parameters • best practice • technical standards established by industry and/or enterprise • planning approvals • surveying • infrastructure/technology requirements and would typically incorporate the following specifications: • products • production rate • recyclable materials • hours per week of operation • waste and stockpiles • water management • transportation systems • safety and health/environmental • all weather dust and noise levels/controls access/haul roads
Safety standards may be contained in:	• legislation and regulations • relevant international/Australian standards

	• management plans • health and safety policy • code of practice • industry guidelines • approved standards • manufacturer's instructions • standard operational procedures • job instructions (or equivalent)
Audit is:	• 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)

Resources and Infrastructure

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.