



Australian Government

Department of Education, Employment and Workplace Relations

RIIRAI401A Apply and monitor mine services and infrastructure systems

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers applying and monitoring site services and infrastructure systems in coal and metalliferous mining industries. It includes planning, preparing for, applying and monitoring systems for the operation and maintenance of site services and infrastructure systems and equipment; and applying systems maintenance procedures.

Application of the Unit

This unit is appropriate for those working in a supervisory or technical specialist roles, 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. Plan and prepare for the operation and maintenance of site services and infrastructure systems and equipment	1.1. Access, interpret and apply compliance documentation relevant to applying and monitoring site services and infrastructure systems 1.2. Plan and prepare for the operation and maintenance of site services and infrastructure systems and equipment 1.3. Identify, hazards associated with the installation and operational requirements of site services and infrastructure equipment and evaluate risks and apply controls 1.4. Access and interpret site procedures 1.5. Identify individual training needs
2. Apply and monitor systems for the operation and maintenance of site services and infrastructure systems and equipment	2.1. Assess the impacts of equipment and systems on work processes and record and report processes to meet equipment and site requirements 2.2. Apply and monitor operational and maintenance programs and procedures in accordance with site requirements 2.3. Apply and monitor procedures for reviewing and modifying work processes 2.4. Apply and monitor site procedures throughout the work and report, where appropriate, in accordance with site requirements 2.5. Participate in systems audit and review requirements in accordance with site and legislative requirements 2.6. Apply and monitor emergency response and evacuation plans and procedures in accordance with site requirements
3. Apply systems maintenance procedures	3.1. Schedule and carry out inspections, repair and maintenance activities in accordance with site requirements 3.2. Record, report and monitor maintenance requirements and activities in accordance 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 apply and monitor site services and infrastructure systems:

- apply legislative, organisation and site requirements and procedures
- access, interpret and apply:
 - legislative and site requirements and procedures
 - technical information
 - records and reports/briefings and handover details
 - manufacturer's instructions
- apply hazard and risk management procedures
- apply operations, services, fixed plant and infrastructure systems and equipment management procedures
- apply work planning and coordination procedures
- apply procedures to identify training needs
- apply systems maintenance and modification 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 apply and monitor site services and infrastructure systems:

- legislative, Australian standards and site procedures for site services and infrastructure
- emergency response and evacuation planning processes and techniques
- audit review process and techniques
- isolation and safe control of energy sources including electrical, hydraulic, pneumatic, diesel
- safety design features of site services and infrastructure systems
- computer based systems
- training systems
- fire prevention and fire fighting systems
- safety design features for maintenance of site services and infrastructure systems
- maintenance and modification systems
- stores systems
- roadway maintenance and drilling
- protection systems

- reticulation systems
- specifications for site services and infrastructure
- identifying and clearly communicating key issues

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 applying and monitoring of site services and infrastructure systems • implementation of appropriate procedures and techniques for the safe, effective and efficient applying and monitoring of site services and infrastructure systems • working with others to plan, prepare and applying the site services and infrastructure systems • provision of clear and timely instruction and supervision by the individual of those involved in applying the site services and infrastructure systems • evidence of the consistent successful applying and monitoring of site services and infrastructure 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 resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the 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 procedures and techniques for the safe, effective and efficient achievement of the required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: • working with others to plan, prepare and apply the site services and infrastructure systems • provision of clear and timely instruction and supervision by the individual of those involved in applying the site services and infrastructure 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
Site services may include:	• water • wastewater • compressed air • fire fighting • fuel/oil • electrical • waste disposal • site monitoring systems • sanitation • communication systems
A site service system includes the functions of:	• installation • operations • protection • maintenance • monitoring and recording • reporting process • environmental control (spontaneous combustion, gas, noise, water, heat, dust) • protection systems (guarding, fire protection and suppression, electricity, lightning protection and flame arrestors, ventilation in explosives magazines and earthing)
Infrastructure may include:	• fabrication and construction areas • servicing areas • refuelling points • workshops/garages (underground and surface)

	• cutting and welding stations • dams • explosives magazines • training facility • bathrooms • HV switch rooms • lamp cabin • laboratory • storehouses • equipment storage areas • on-site residential housing • site access (road, rail, air) • battery charging rooms • water treatment plant • sewerage treatment plant • offices • emergency facilities (First Aid, fire and rescue) • coal preparation plant • stockpile • coal load out • control room • site security • "Fixed Plant"
Systems may include:	• Ancillary support systems which may include, but are not limited to: • site plans • signage • stores systems • roadway maintenance • drilling (raise boring, bore hole and in-seam drilling) • Emergency response systems which may include: • refuge chambers and changeover stations • designated escape ways • places of safety • alarm systems • guidance systems • emergency communication systems • escape apparatus and systems • sites rescue capability

	• first response stations • quick fill stations • Protection systems which may include, but are not be limited to: • explosion barriers • electrical protection • compressed air protection • hydraulic protection • environment protection (stone dusting and dust suppression) • mechanical protection • frictional ignition protection • isolation systems • guarding • Reticulation system which may be electrical or mechanical and may include: • water management • pumping of solids • fluid reticulation and storage • material reticulation and storage (hydraulic, electric, water, inert and seam gas, and compressed air) • Communication systems which may include, but are not limited to: • oral • phones/DAC • radios/PED • telemetry • Reporting and recording systems which include site requirements and consist of: • phones • radios • computer systems • oral and written • tagging and access control
Hazards 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
Site procedures are also known	• Standard Operating Procedures (SOP)

as:	• safe working procedures • safe operating procedures • standard working procedures
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)

Resources and Infrastructure

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.