



Australian Government

Department of Education, Employment and Workplace Relations

RIIRAI510A Implement, monitor, rectify and report on interfaces between electrical and mechanical componentry

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers implement, monitor, rectify and report on interfaces between electrical and mechanical componentry in the coal mining industry. It includes: determining the requirements; planning rectification work; and rectifying the electrical and mechanical interface componentry.

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. Determine requirements of electrical and mechanical interface	1.1. Access, interpret and apply compliance documentation relevant to implement, monitor, rectify and report on the interfaces between electrical and mechanical componentry 1.2. Examine components defect reports 1.3. Inspect components according to site, legislative and manufacturer procedures 1.4. Prepare reports detailing the equipment modifications requirements
2. Plan rectification work on electrical and mechanical interface componentry	2.1. Use available information from maintenance and test results to ensure accurate problem identification 2.2. Identify componentry faults and causes 2.3. Report fault rectification requirements 2.4. Obtain specialist advice / assistance where required 2.5. Isolate/tag componentry for rectification work
3. Rectify electrical and mechanical interface componentry	3.1. Dismantle componentry parts in accordance with manufacturer requirements and safe working procedures 3.2. Assess componentry parts for serviceability 3.3. Undertake modifications according to manufacturer specifications/specialist advice 3.4. Replace componentry parts according to manufacturer specifications/safe working procedures 3.5. Test componentry for safe working with proscribed specifications 3.6. Record repaired / modified componentry details 3.7. Notify appropriate personnel of repairs / modifications

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, monitor, rectify and report on interfaces between electrical and mechanical componentry:

- 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 the principles of mine design
- assess the risks and consequences attached to mechanical systems
- apply work planning and coordinating procedures
- apply procedures for managing confined spaces
- apply training needs analysis
- interpret and apply manufacturers' instructions
- apply maintenance survey procedures
- liaise with other parties
- coordinate others
- use information management
- apply problem solving techniques
- apply analysis techniques
- use measuring equipment
- apply report writing techniques
- facilitate meetings
- apply operational and safety requirements
- read, interpret and apply technical instrument information
- apply diagnostic techniques
- apply environmental constraints in rectification operations
- apply equipment records maintenance requirements
- apply procedures for the disposal of environmentally sensitive fluids and materials

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, monitor, rectify and report on interfaces between electrical and mechanical componentry:

- legislative, statutory, Australian standards and site specific requirements for maintenance of mechanical systems, including communications, emergency procedures, risk management, recording and reporting, mines rescue, OHS, manufacturer instructions, standard work procedures, training, fire fighting, handling and storage of dangerous goods, local government and power authority requirements
- mine operating systems and procedures, including transport systems, conveyor systems, systems of mining, ventilation systems, gas management systems and mine water management systems
- stores systems
- underground roadway and drilling
- protection systems
- reticulation systems
- specification for mechanical systems
- audit procedures
- mine design principles and procedures relating to mechanical systems
- company organisation
- computer based systems
- training programs
- safety design features for maintenance of mechanical systems
- maintenance surveys
- work role definitions
- reporting methods and alternatives
- community expectations
- consultative strategies
- alternative documentation systems for procedures

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 to implement, monitor, rectify and report on the interfaces between electrical and mechanical componentry • implementation of procedures and techniques to safely, effectively and efficiently implement, monitor, rectify and report on the interfaces between electrical and mechanical componentry • 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, monitor, rectify and report on the interfaces between electrical and mechanical componentry • consistent successful implementing, monitoring, rectifying and reporting on the interfaces between electrical and mechanical componentry
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.
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, monitor, rectify and report on the interfaces between electrical and mechanical componentry • provision of clear and timely required support and advice on the implementing, monitoring, rectifying and reporting on the interfaces between electrical and mechanical componentry
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
Electrical componentry may include componentry in:	• power systems • electrical protection systems • mine cabling • remote control systems • communication systems
Mechanical componentry may include:	• hydraulic components • air system components • rope system components • transmission systems components

Unit Sector(s)

Resources and Infrastructure

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.