



Australian Government

Department of Education, Employment and Workplace Relations

RIIMPG301A Control and monitor automated plant/machinery

Release: 1

RIIMPG301A Control and monitor automated plant/machinery

Modification History

Not applicable.

Unit Descriptor

This unit covers the control and monitoring of automated plant/machinery in the metalliferous mining industry. It includes applying control and data acquisition systems, controlling and monitoring plant/equipment with control and data acquisition systems, fault finding and correcting routine and non routine mine control and data acquisition system operation and maintenance problems, and maintaining mine control and data acquisition systems and associated accessories. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

Application of the Unit

This unit is appropriate for those working in an operational role at worksites 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

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
--	---

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p>1. Apply control and data acquisition systems</p>	<p>1.1. Access, interpret and apply compliance documentation relevant to the work activity</p> <p>1.2. Maintain safe work practices</p> <p>1.3. Identify, manage and report potential risks, hazards, accidents and injury according to site reporting procedures, safety guidelines and SOPs</p> <p>1.4. Communicate/report safety issues and work area hazards and end of shift report to the incoming shift</p> <p>1.5. Identify and log safety issues and hazards as they occur according to site SOPs</p> <p>1.6. Report safety issues and hazards as they occur and are reported to the Team Leader and/or appropriate personnel according to SOPs</p> <p>1.7. Select and use appropriate PPE according to procedures and manufacturers' guidelines</p> <p>1.8. Respond appropriately to emergency procedures</p> <p>1.9. Perform cleaning/housekeeping of plant and area and report associated hazards</p> <p>1.10. Operate and communicate via UHF radio control methods in the underground and surface areas according to SOPs</p> <p>1.11. Report and rectify/isolate defective equipment according to site isolation and tagging procedure</p> <p>1.12. Raise barricades and signs around hazardous areas and report to control and data acquisition system and/or relevant personnel</p> <p>1.13. Maintain environmental requirements according to Company/site environmental policy</p>
<p>2. Control and monitor plant/equipment with control and data acquisition system</p>	<p>2.1. Plan and prepare for control and data acquisition system and closed circuit television operation according to SOPs</p> <p>2.2. Perform control and data acquisition system control and control room pre operation and visual checks according to</p>

	<p>SOPs</p> <p>2.3. Start-up and log onto control and data acquisition system to operate ore handling system and equipment according to manufacturer's specifications and SOPs</p> <p>2.4. Monitor the ore handling system, equipment operation and personnel safety through control and data acquisition system and closed circuit television</p> <p>2.5. Communicate to technicians, team leaders and/or supervisors when starting or shutting down ore handling systems and equipment according to standard communication practice and site SOPs</p>
<p>3. Fault find and correct routine and non routine mine control and data acquisition system operational and maintenance problems</p>	<p>3.1. Identify and correct minor deviations of equipment systems normal operating parameters according to manufacturers' specifications and SOPs</p> <p>3.2. Follow emergency shutdown procedures according to SOPs</p> <p>3.3. Report abnormal conditions to control room/system and/or supervisory staff</p> <p>3.4. Isolate and tag mine control and data acquisition system equipment and associated accessories before conducting maintenance according to site isolation and tagging procedure</p>
<p>4. Maintain mine control and data acquisition system and associated accessories</p>	<p>4.1. Conduct routine planned inspections, preventative maintenance as per maintenance schedules, SOPs and safe working practices</p> <p>4.2. Perform cleaning/housekeeping of plant and area and report associated hazards</p> <p>4.3. Complete all necessary documentation according to site reporting procedures</p> <p>4.4. Notify technicians, team leader and/or supervisors of any abnormal operational conditions within mine as per site SOPs</p>

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 of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following, as required to control and monitor plant/machinery

- apply legislative, organisation and site requirements and procedures for controlling and monitoring automated plant/machinery
- initiate work clearance
- use PPE and safeguards
- work to industry, community and environmental standards
- apply knowledge of mine emergency procedures and alarms
- apply standards to work operations
- plan work sequence for a given job
- employ prescribed safe work practices
- monitor ore transfer systems
- participate in team activities
- undertake hygiene/house keeping tasks
- solve problems in electrical circuits
- solve problems and adjust controls
- access and use engineering drawings
- operate automatic ore handling equipment
- operate manual ore handling equipment
- prepare documentation
- work in a team
- write technical reports
- maintain equipment records
- diagnose problems
- apply environmental constraints and procedures

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to control and monitor automated plant/machinery

- OHS
- hazardous standards
- plant/machinery operating principles and practices
- site agreements

- legislative regulations
- DC circuit principles
- storage
- equipment protection (mechanical, electrical)
- power supplies
- electrical circuit control principles
- material handling control principles
- programmable controllers
- electrical distribution
- electrical accessories
- measurement concepts
- detection sensors
- cables and wiring systems
- circuit protection
- final control elements
- transmitters and converters
- distributive control
- solving problems associated with material
- interpretation of engineering drawings
- material handling control networks and associated accessories

Evidence Guide

<p>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.</p>	
<p>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>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:</p> <ul style="list-style-type: none"> • knowledge of the requirements, procedures and instructions for controlling and monitoring automated plant/machinery • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of automated plant/machinery control and monitoring • working with others to undertake and complete the control and monitoring of automated plant/machinery that meets all of the required outcomes • consistent timely completion of automated plant/machinery control and monitoring that safely, effectively and efficiently meets the required outcomes
<p>Context of and specific resources for assessment</p>	<ul style="list-style-type: none"> • 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. • 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. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of

	<p>assessment should not be greater than those required on the job.</p> <ul style="list-style-type: none"> • 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. • 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	<p>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:</p> <ul style="list-style-type: none"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • working with others to undertake and complete the control and monitoring of automated plant/machinery
Guidance information for assessment	<p>Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.</p>

Range Statement

<p>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.</p>	
<p>Relevant compliance documentation may include:</p>	<ul style="list-style-type: none"> • legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
<p>Control room control and data acquisition system and associated equipment may include:</p>	<ul style="list-style-type: none"> • conveyor controls (motor control centre) • over head magnet • winder control • electrical distribution switch gear control • crusher control • loading station feeders • air conditioning control • ventilation system control • mine dewatering control • lighting control • fire/dust suppression control • sirens and alarms • ore car dumping
<p>Control and data acquisition system hardware may include:</p>	<ul style="list-style-type: none"> • monitors • reports • bay boards • mouse • 2-way radio • battery charging racks • telephone • First Aid kit • fire extinguisher
<p>Closed circuit television equipment may include</p>	<ul style="list-style-type: none"> • video monitors • CCTV control panel • video cameras

Environmental requirements may include:	<ul style="list-style-type: none"> • drainage • dust • emissions • flora and fauna • hazardous chemicals • noise • recycling e.g. water • run off • spills • waste management and disposal • water quality
Documentation may include:	<ul style="list-style-type: none"> • work orders • end of shift reports • logs • registers • team leader's daily report • information sheet • computers and computer software
Legislation may include:	<ul style="list-style-type: none"> • Australian standards • environmental agencies regulations • Environmental Protection Act • isolation procedures • manufacturer's specifications/recommendations • Mine Regulations Act • OHS legislation • site regulations and procedures

Unit Sector(s)

Processing

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.