



Australian Government

RIIMCU602D Establish and maintain the gas management system

Release: 2

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Modification History

Release	Comment
1	This unit replaces RIIMCU602A Establish and maintain the gas management system
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to establish and maintain the gas management system in Coal mining.

This unit is appropriate for those working in management roles.

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.

Unit Sector

Coal mining (Underground)

Elements and Performance Criteria

1. Plan and prepare to establish and maintain the gas management system	1.1 Access, interpret and apply gas management system, and ensure the work activity is compliant 1.2 Identify, evaluate and clarify coal seam characteristics and mine conditions, which contribute to flammable or irrespirable atmospheres or outbursts 1.3 Identify, analyse and evaluate hazards and risks relating to gas emissions and outbursts 1.4 Identify, analyse and evaluate the requirements for ventilation in relation to the types and amounts of gas emissions 1.5 Identify, analyse and evaluate gas hazards caused by disruption to the ventilation system and the impact on the mine
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	atmosphere 1.6 Identify, analyse and evaluate the impacts of fire, ignition, outburst and explosion on the gas hazards 1.7 Identify, analyse and evaluate the impacts of water accumulations on gas management
2. Identify, analyse and evaluate gas control options and measures	2.1 Identify, analyse and evaluate the types and advantages/disadvantages of gas control options and management methods including gas drainage 2.2 Identify, analyse and evaluate the method, purpose and uses of gas monitoring systems
3. Design and develop gas management systems	3.1 Establish gas management systems 3.2 Establish surface infrastructure, which eliminates the risk of induced hazards in relation to potential gas emissions 3.3 Incorporate gas monitoring systems to minimise the potential hazards of gas 3.4 Incorporate ventilation systems and controls to minimise the risk of gas leakage 3.5 Incorporate contingency systems to mitigate the risks and hazards of gas
4. Establish the gas management system	4.1 Establish gas management system objectives, descriptions and responsibilities and incorporate into the management system 4.2 Identify, develop and establish hazard control procedures associated with gas management 4.3 Establish gas management monitoring system installation, operation and maintenance procedures 4.4 Establish gas control device installation, operation and maintenance procedures 4.5 Establish gas management system information recording and reporting procedures 4.6 Determine and review action levels and responses to minimise the hazards of gas 4.7 Establish gas emergency and evacuation procedures 4.8 Establish a program, including systems and procedures, to satisfy identified gas management training requirements 4.9 Develop and establish, audit, review and update procedures
5. Plan and prepare for the implementation of the	5.1 Identify, clarify and communicate to all personnel roles and responsibilities, as specified in the gas management system 5.2 Identify, forecast, obtain and allocate/schedule resources

gas management system	required for the implementation of the gas management system 5.3 Implement the gas management training program 5.4 Review gas management system implementation procedures, and implement required changes
6. Audit and review the gas management system	6.1 Audit mine gas monitoring systems operations for compliance 6.2 Audit mine gas control devices for compliance 6.3 Audit recording systems for compliance 6.4 Audit the maintenance program and procedures for compliance 6.5 Audit gas management training program for currency, relevance and compliance 6.6 Establish procedures for response to instances of non-compliance or other discrepancies/deficiencies revealed by audit 6.7 Identify and respond promptly to instances of non-compliance or other discrepancies/deficiencies revealed by audit 6.8 Maintain written records, reports and policy documentation 6.9 Identify and evaluate future gas management requirements and incorporate into planning procedures as stipulated by the gas management system

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIMCU602A Establish and maintain the gas management plan

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIMCU602D Establish and maintain the gas management system

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- implements the procedures and techniques for the safe, effective and efficient establishment and maintenance of the gas management system including:
 - applying risk management processes and techniques
 - collecting, collating and evaluating gas data
 - accessing, evaluating and applying data from monitoring systems and equipment
 - performing gas planning mathematical calculations
 - interpreting computer spreadsheets and gas modelling / simulations
 - accessing, evaluating and applying design criteria for gas management
 - interpreting and applying mathematical and scientific theorems / laws related to gas management
 - accessing and analysing archival and historical gas information related to the mine
- works effectively with others to undertake and complete the establishment and maintenance of the gas management system that meets all of the required outcomes including:
 - communicating clearly and concisely with others to receive and clarify work instructions, and convey work progress
 - identifying the relevant information and scope of the work necessary to meet the required outcomes
 - establishing technical procedures relating to gas management

- demonstrates completion of establishing and maintaining the gas management plan that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - establishing gas management system objectives, descriptions and responsibilities
 - identifying viable options and selecting the gas management system elements that best meet the required outcomes
 - establishing gas training requirements, programs, systems and procedures
 - conducting enquiries / investigations and preparing reports

Knowledge Evidence

The candidate must demonstrate knowledge in establishing and maintaining the gas management system through:

- principles of ventilation management including mine and goaf ventilation systems
- methods of mine ventilation and their applications/limitations
- methods of panel gas management and their applications/limitations
- impact of mining techniques and mine and panel design on gas management
- coal characteristics and coal seam gradients on mine gas systems
- components/factors to be considered in the gas management plan
 - effects of re-circulation
 - underground water management principles
 - gas management drilling techniques
 - geological data
- equipment, monitoring systems and techniques
 - computer modeling and simulation techniques for gas management
 - computer-based systems for mine gas analysis
 - the use and calculation of specific gas emissions
 - gas surveys: the types, frequency and methods for conducting
 - processes for determining alarms and trigger points / levels
- emergency response and evacuation/disaster planning processes and techniques

Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,

- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 Years
Other sectors	Where this Unit is being assessed outside of the Resources and Infrastructure Sectors assessor and/or Industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no Industry standard is specified should comply with any relevant regulation.	

*Assessors can demonstrate current work experience through employment within Industry in a role relevant to the outcomes of the Unit; or, for external assessors this can be demonstrated through exposure to Industry by conducting frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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