



Australian Government

RIIMCU406E Apply and monitor the inrush management plan

Release: 1

RIIMCU406E Apply and monitor the inrush management plan

Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to apply and monitor the inrush management plan in coal mining, including applying hazard controls and monitoring systems.

It applies to those working in supervisory or technical specialist roles. They generally perform a broad range of operational activities in their area of responsibility and are responsible for monitoring a safe work environment.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Coal mining (underground)

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to apply and monitor the inrush management plan	1.1 Obtain, interpret, clarify and confirm work requirements 1.2 Access, interpret and apply inrush management plan documentation and confirm work activity is compliant 1.3 Communicate and explain responsibilities and tasks to personnel involved according to inrush management plan 1.4 Identify, obtain and allocate resources according to inrush management plan 1.5 Identify training needs for personnel involved according to inrush management plan and within scope of own role
2. Apply and monitor inrush activities	2.1 Identify, interpret and apply inrush monitoring, recording and reporting procedures according to inrush management plan

ELEMENT	PERFORMANCE CRITERIA
	2.2 Interpret, apply and monitor control measures according to inrush management plan 2.3 Interpret, apply and monitor actions and procedures in response to potential inrush according to inrush management plan 2.4 Confirm, apply, communicate and post permit-to-mine procedures according to inrush management plan and site requirements 2.5 Apply and monitor procedures addressing inrush personnel safety according to inrush management plan 2.6 Inspect equipment protection/defensive requirements and measures according to inrush management plan and site requirements 2.7 Participate in systems audit and review requirements according to inrush management plan
3. Apply inrush prevention system maintenance procedures	3.1 Carry out inspections, repair and maintenance activities according to site requirements 3.2 Record, report and review maintenance activities according to site requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Calculates resourcing requirements and performs mathematical calculations
Oral communication	Conveys information and requirements clearly and listens actively
Reading	Identifies and interprets relevant information from workplace procedures, documentation and legislation

Unit Mapping Information

Supersedes and is equivalent to RIIMCU406D Apply and monitor the inrush management plan.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIMCU406E Apply and monitor the inrush management plan

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- apply and monitor inrush management plans on at least two occasions, including:
 - applying inrush hazard controls, including:
 - pumping
 - ventilation
 - seals
 - inrush control zones
 - protective drilling
 - action levels
 - applying inrush monitoring systems, including:
 - continuous and/or periodic monitoring
 - portable (hand held) monitoring
 - core samples
 - visual observation
 - geological mapping
 - borehole pressure readings
 - identifying and controlling inrush hazards in a simulated environment.

During the above, the candidate must:

- locate and apply relevant legislation, documentation, policies and procedures and confirm work activity is compliant
- implement the requirements, procedures and techniques for applying and monitoring inrush management plans, including:
 - interpreting, communicating and applying technical information
 - operating hand held monitoring equipment
 - accessing and interpreting data from monitoring systems and equipment

- accessing and interpreting design criteria for inrush prevention/management systems and devices
- interpreting computer spreadsheets and inrush modelling/simulations
- accessing and interpreting archival and historical inrush information related to the mine
- conducting enquiries/investigations and preparing audit reports
- work effectively with others to apply and monitor inrush management plans that meet the required outcomes, including:
 - organising work activities to meet task requirements
 - communicating clearly and concisely with others to receive and clarify work instructions
 - complying with reporting requirements and procedures
 - determining coordination requirements throughout work activities.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key legislation required to apply and monitor inrush management plan
- key procedures and documentation required to apply and monitor inrush management plan, including those for:
 - planning and design of mines and mining structures, including:
 - mine plans
 - ventilation
 - gas monitoring
 - strata support
 - safety management plans
 - developing the requirements and processes of the inrush management plan
 - applying risk assessment and management processes
 - identifying and managing environmental issues, hazards and risks
- principles, applications and limitations of inrush hazards controls, including:
 - pumping
 - ventilation
 - seals
 - inrush control zones
 - protective drilling
 - action levels
- principles, applications and limitations of inrush monitoring systems, including:
 - continuous and/or periodic monitoring
 - portable (hand held) monitoring
 - core samples

- visual observation
- geological mapping
- borehole pressure readings
- principles and techniques for identifying and applying mine site historical information, including:
 - sedimentology aspects of mine sites relating to subsidence
 - previous inrush
 - gas content and composition
 - roof and floor technical data
 - over and underlying strata
 - water bearing strata
 - permeability of seam and strata
 - hydrology
 - physical property testing results
 - caving characteristics
 - ground stress behaviour
- systems of mining and their impact on inrush management, including:
 - tunnels
 - drifts
 - stone drivage
 - shaft sinking
 - pillar extraction
 - partial extraction
 - punch mining
 - fault drivage
- systems of work and their impact on inrush management, including:
 - drilling operations
 - bord and pillar
 - place change
 - longwall
 - highwall
 - auger mining
 - pillar extraction
 - partial extraction
 - punch mining
- factors affecting stability of mining structures, including:
 - stress analysis, including mining induced stress and topography
 - sedimentology, including:
 - subsidence
 - water bearing strata

- permeability of seam and strata
 - hydrology
 - hydrogeology
 - physical property testing
 - caving characteristics
 - over and underlying strata
- mining structure failure modes
- mining and general engineering principles relevant to the behaviour of excavations in rock, including:
 - ground support systems
 - geotechnical engineering
 - excavation engineering
 - tunnel engineering and shaft sinking
 - rock mechanics
 - mine surveying
 - mining of coal deposits
 - thermodynamics
- impacts of differing geological features and conditions of potential inrush, including:
 - the effects of coal seam characteristics on inrush
 - faults, dykes, intrusions and strata deformities
- techniques for using monitoring systems, including:
 - fixed monitoring systems types, uses, limitations, design criteria, specifications and design processes
 - portable monitoring equipment types, uses and limitations
 - processes and techniques for determining alarms and trigger points/levels
 - methods of control of inrush
 - inrush control zones
- techniques for identifying individual training needs
- principles, processes and techniques for emergency responses, evacuations and disaster planning
- techniques for coordinating and communicating job activities with others.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - inrush management plan
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,

- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 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.	

*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guide located on VETNet.

**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 a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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