



**NSW
Resources
Regulator**

COMPETENCY FRAMEWORK

VENTILATION OFFICER

of underground coal mines

Work Health and Safety (Mines and Petroleum Sites Regulation 2014)

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1. Introduction

This document should be read in conjunction with the Framework for competencies of statutory functions requiring practising certificates.

2. Legislation

Extract from the Work Health Safety (Mines and Petroleum Sites) Regulations 2014, Schedule 10, clause 4:

(1) The statutory function of ventilation officer is to control and manage the ventilation activities and standards forming a part of the mining operations at the mine.

3. Competencies for ventilation officer of underground coal mines

The competencies of statutory functions in the framework are generally described below and specific details for this function are found in the following sections.

Situational
Awareness and
Risk Assessment

This competency covers the practitioners' actions to identify and assess risks, hazards or other issues that may affect the safe functioning of the mine. It involves gathering information, analysing emerging issues and seeking objective evidence to draw conclusions, so as to eliminate or minimise undesirable consequences.

The ventilation officer of underground coal mines is to apply a highly specialised theoretical and technical knowledge and skills in the assessment of the effectiveness of the ventilation activities and standards, to support the management of hazards and risks, and demonstrate autonomy, judgement and defined responsibility. This includes:

- developing ventilation standards for ventilation for the mine
- monitoring the performance of the SMS against the specified ventilation standards and control plan
- carrying out testing or ensure tests are completed for ventilation at the mines, as set out in the ventilation control plan
- participating in the audits and reviews of the safety management system, as required for ventilation.

Behavioural tendencies and skills to support the demonstration of Situational Awareness and Risk Assessment:

- Analyse and interpret reports and information available under the SMS to identify how and why a ventilation hazard can be present in the mine, the likelihood and potential consequences of the risk eventuating.
- Identify how to access various sources of information and evaluate its merit.
- Support audit activities on the effectiveness of the ventilation system and ventilation control plan against its performance standards.

A blue circular icon with the text "Effective communication" inside.

This competency refers to the practitioners' responsibility in using appropriate, clear and effective communication to ensure instructions, hazards, risks, safety plans and other technical and non-technical issues are effectively communicated at all levels, taking into account the knowledge, expectations, requirements, interests and terminology of the intended audience. Methods of communication and ensuring the communication has been delivered and understood forms part of this competency.

The ventilation officer of underground coal mines is expected to transfer complex information and communicate standards and implementation activities. This includes:

- communicating the ventilation control plan and the SMS requirements, as appropriate, to people implementing, applying and/or monitoring ventilation
- sharing information, training and instruction on the ventilation control plan
- bringing to the attention of others a high-risk activity.

Behavioural tendencies and skills to support the demonstration of Effective Communication:

- Use appropriate verbal and non-verbal communication to explain highly technical information in an articulate and clear manner, and listen actively to others (i.e. when communicating information to technical and non-technical professionals within the mine).
- Use appropriate communication channels to report outcomes of the audit.
- Present as a credible source of information.
- Manager barriers of communication, supporting others to understand the outcomes of the audit, where required.
- Report information and instructions effectively, maintaining written and verbal reporting requirements.
- Notify the Regulator of a high-risk activity for sealing and where an incident occurs prescribed as a notifiable incident by the WHS (M&PS) Regs 2014 where appropriate and through the appropriate channels.
- Seek to clarify information or reports by asking question and actively listening to others' input.

Collaboration

This competency covers the practitioners' competency to collaborate, provide support and leadership, facilitate the gathering and dissemination of information and knowledge for mine compliance. It includes behaviours and mechanisms that support the supervision, training and support of workers.

The ventilation officer of underground coal mines is expected to support the collaboration with others in the mine and externally and supervise workers and contractors in the implementation of ventilation standards, to ensure a safe and compliant ventilation system and control plan in the mine. This includes:

- identifying key internal stakeholders to support the control and management of ventilation systems and standards
- working collaboratively when participating in mine consultation processes, audits and reviews
- providing supervision, advice and assistance to workers and contractors when appropriate, e.g. implementation of principal hazards management plans, principal control plans and specific control measures in relation to ventilation.

Behavioural tendencies and skills to support the demonstration of Collaboration:

- Understand the scope of other functions and their statutory requirements and manage their interdependencies.
- Support others in the mine to ensure ventilation activities and standards are implemented correctly.
- Supervise workers and contractors to ensure the ventilation standards are applied as per the SMS.

Operational decision making and initiative

This competency covers the practitioners' operational decision-making ability to initiate, plan, lead or manage the resolution of hazards and risks that have been identified to support safe mining operations. It includes the ability to respond to issues in a decisive manner, applying their knowledge and using their experience from previous situations.

The ventilation officer of underground coal mines is to apply highly specialised knowledge of advanced ventilation concepts, systems to support decision-making in relation to ventilation. This includes:

- controlling the ventilation system and activities
- managing the ventilation activities and standards throughout the lifecycle of the mine
- reporting on the effectiveness of the ventilation system and ventilation control plan as appropriate
- monitoring results from ventilation devices at the mine and respond as required

- managing the implementation of the principal hazard management plans, principal control plans and specific control measure in relation to ventilation.

Behavioural tendencies and skills to support the demonstration of Operational Decision Making and Initiative:

- Demonstrate autonomy, judgement and responsibility when undertaking auditing processes and reporting the outcomes of the audits.
- Take control in the management of ventilation standards, systems implementation, and in organising ventilation audits as appropriate.
- Use an objective evidence-based approach to decision-making.
- Integrate and combine different set of information, from different sources, to form general conclusions.
- Take the initiative to identify and bring to others' attention non-compliance and opportunities for improvement in the ventilation system and plan.



Organised and
disciplined

This competency covers the practitioners' abilities in planning and organising their work and the work of others, to support processes being followed, tasks prioritised, and inspections and checks are completed in a systematic manner as per legislation. It includes supporting systems, plans and procedures that are implemented, maintained and updated as required.

The ventilation officer of underground coal mines is to apply highly specialised knowledge of advanced ventilation concepts, systems, to undertake control and implementation of standards in an organised and systematic manner. This includes:

- planning and organising ventilation activities and audits, as prescribed by relevant regulation and the SMS
- assisting in documenting actions to implement the ventilation systems, including the ventilation control plan and procedures
- gathering evidence of implementation and effectiveness of the ventilation system in a systematic and organised manner
- monitoring and reviewing ventilation systems, plan and results from ventilation monitoring devices
- carrying out testing or ensure tests are completed for ventilation
- organising ventilation audits.

Behavioural tendencies to support the demonstration of Organised and Disciplined:

- Work in a systematic manner when monitoring and reviewing the performance of the ventilation system, ventilation monitoring devices and when reviewing reports.
- Implement standards and controls in a systematic manner.

- Plan and schedule audits in compliance with legislation and standards.
- Ensure ventilation systems and control plans are implemented appropriately as per standards.
- Arrange activities or resources as per risks levels and legislation.
- Apply the legislative requirements for gathering, recording, evaluating, monitoring or reviewing data and information.
- Use reporting tools and systems as appropriate.

Driven by
safety and
integrity

This competency refers to the practitioners' capability to act so as to comply with legislation, as well as supporting others to adhere to legislation. It includes their ability to persist with challenging tasks through sustained commitment and effort whilst maintaining standards, and their ability to model high standards of behaviours for others through own behaviour.

The ventilation officer of underground coal mines is to act consistently in accordance to legislation, standards and procedures. This includes:

- acting in a way that do not contravene existing legislation, standards and procedures even in situations of considerable internal or external pressure
- identifying situations where ventilation standards are compromised
- reviewing the performance of the ventilation system, referring to reports from workers and PCBU's.

Behavioural tendencies to support the demonstration of Driven by Safety and Integrity:

- Act in accordance to legislation, processes and standards when undertaking auditing process within a mine.
- Maintain an understanding of WHS hazards and risks in the mining operations, specifically for ventilation systems and control plans, that are required to be controlled or rectified.
- Identify incidents involving ventilation that are required to be reported and/or assist in reporting them.
- Verify compliance requirements and remain objective.
- Fulfil responsibilities to the highest professional and ethical standards.
- Evaluating the effectiveness of the ventilation system and standards for the mine.

Responsiveness
to change

This competency refers to the practitioners' capability to use and apply their relevant knowledge of legislation and standards, previous experience and skills to respond to changing circumstances in the mine they operate in.

The ventilation officer of underground coal mines is to apply highly specialised theoretical and technical knowledge, skills and specific experience to consider and incorporate contingencies plans to accommodate change. This includes:

- reviewing and updating ventilation standards and processes to institute changes in the ventilation system and/or ventilation control plan where necessary
- updating and realigning control plans and measures to changing or emerging circumstances, without compromising compliance
- managing the implementation of changes as required
- integrating the ventilation control plan with other plans in the SMS so they are effective, e.g. emergency plan.

Behavioural tendencies to support the demonstration of Responsiveness to Change:

- Navigate uncertain, novel situations or ill-defined problems to identify when changes in the ventilation system and/or control plans are required under existing conditions.
- Use available evidence, information and expertise to reassess decisions based on new information.
- Consult, advise and support the implementation of the most optimal course of action.

Technical
knowledge
and skills

This refers to the practitioners' capability to demonstrate technical skills and specific knowledge to be able to act or apply the requirements of legislation, standards, systems, procedures and processes.

The ventilation officer of underground coal mines is expected to demonstrate highly specialised theoretical and technical knowledge and skills, in a range of contexts, to demonstrate autonomy, judgement and defined responsibility within the underground coal mine and the scope of their statutory function. The technical skills and knowledge include:

- mining and WHS systems
- legislation
- emergency management
- general WHS topics
- general knowledge to support the demonstration of technical skills incorporating associated non-technical skills.

Technical knowledge and skills required

Mining and WHS systems

Safety management system (SMS)

- Understand their obligations in reviewing and monitoring relevant ventilation activities and standards within the SMS and standards.
- Theoretical and technical knowledge and skills in ventilation standards, including:
 - fire protection and ventilation
 - maintenance.
- Operational planning
 - Operational planning, including the scope, boundaries and performance objectives of ventilation standards, as well as monitoring and reviewing ventilation system and the ventilation control plan for the mine.
 - Ability to identify gaps relevant for the ventilation system and ventilation control plan for the mine.
 - Identify non-compliance to the legislation.
 - Monitor and review the performance of the ventilation system and ventilation control plan against standards and procedures.
 - Mine specific risks.

Principal hazards (catastrophic fatal hazards) as listed in schedule 1 - Work Health and Safety (Mines) Regulation 2014 under the *Work Health and Safety (Mines) Act 2013*

- Support the development and implementation of the principal hazard management plans for all applicable prescribed principal hazards in WHS (M&P) Regs 2014, clause 5 and any other that impact upon ventilation.
- Nature of harm that could be caused by a hazard in the underground coal mine, how serious the harm could be and the likelihood of it happening.
- Mine ventilation principles, atmospheric gases and contaminants relevant to coal.

Principal control plans as listed in schedule 2 - Work Health and Safety (Mines) Regulation 2014 under the *Work Health and Safety (Mines) Act 2013*

- Set the standards for the development, implementation and review of the ventilation control plan.

- Support others to implement the ventilation control plan as instructed.
- Verification that the ventilation standards have been met.
- Support the development and implementation of other control plans (e.g. electrical, mechanical and emergency) relating to ventilation standards.

Specific control measures

- Verify that each control measure in relation to ventilation is adequately supported by relevant systems within the SMS and standards.
- Support the implementation of specific ventilation control measures.
- Establish system for monitoring the performance of control measures.
- Establish performance indicators to identify effectiveness and failure of control measures.

Legislation

Apply a broad theoretical and technical knowledge of acts, regulations, approved codes of practice, standards, and guidelines relevant to the execution of their function, such as:

- *Work Health and Safety Act 2011* and Work Health and Safety Regulations 2011
- *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Work Health and Safety (Mines and Petroleum Sites) Regulations 2014
- *Explosives Act 2003* and Explosives Regulation 2013
- approved codes of practice under the *Work Health and Safety Act 2011*:
 - International and Australian/New Zealand Standards
 - guidance on the Interpretation of Workplace Exposure Standards for Airborne Contaminants published by Safe Work Australia.

Emergency management

- Emergency plans, and emergency preparedness and response systems, including evacuation, notification and response that are relevant to ventilation standards and activities.
- Health and safety issues in underground coal mines for emergencies.
- Procedures and conditions under which individuals at the mine or a part of the mine are to be withdrawn to a place of safety.
- Causes and prevention of mine incidents for the underground coal mine.
- Pre-incident plans.

General WHS topics

- Demonstrate an ability to apply knowledge of relevant topics included in the guide of maintenance of competence scheme for statutory functions requiring practicing certificate.

General knowledge to support the demonstration of technical skills incorporating associated non-technical skills

- Ventilation standards and controls.
- Types of adverse environmental conditions and how it affects the ventilation system in an underground coal mining operation.
- Analytical techniques and processes relevant for monitoring ventilation activities and standards.
- Communication channels and systems to communicate and report performance and compliance.
- Document control and procedures for documenting relevant communications within the SMS or standards.
- Recommended resources required to control and manage the ventilation activities and standards throughout the lifecycle of the mine.
- Ventilation monitoring devices.
- Reporting tools and resources.
- Contingency planning.
- Changes in the ventilation system and control plans and measures that may impact the underground coal mine.
- Change management strategies to implement new or revised standards or procedures.
- Implication of new information for both current and future problem-solving and decision-making, within their area of statutory responsibility.