



**NSW
Resources
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COMPETENCY FRAMEWORK

VENTILATION AUDITOR

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 7:

(1) The statutory function of ventilation auditor is to audit the ventilation system and ventilation control plan for the mine.

3. Competencies for ventilation auditor 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 auditor of underground coal mines is to apply a highly specialised theoretical and technical knowledge and skills in the assessment and auditing of the effectiveness of the ventilation system and control plan for the mine, to support the management of hazards and potential risks, and demonstrate autonomy, judgement and defined responsibility. This includes:

- auditing the performance of elements of principal control plans and of specific control measures that form part for the ventilation system for the mine, including the ventilation control plan, through investigation, analysis and verification of processes
- monitoring and reviewing data, processes and audit outcomes and reports to ensure the effectiveness of the ventilation system and ventilation control plan.

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

- Undertake investigation and analysis process as part of auditing the ventilation systems and ventilation control plan for the mine.

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

Effective communication

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 auditor of underground coal mines is expected to transfer complex information and communicate audit outcomes. This includes:

- supporting the communication and reporting the effectiveness of the ventilation system and ventilation control plan for the mine
- explaining the results of their analysis of data, information, audit outcomes when verifying compliance with ventilation standards
- providing written reports to the mine operator on the conduct and outcomes of the audit.

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 as per established in the SMS to report outcomes of the audit.
- Present as a credible source of information.
- Manage barriers to communication, supporting others to understand the outcomes of the audit, where required.
- Report information and outcomes of an audit effectively, maintaining written and verbal reporting requirements as per the SMS.
- 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 auditor of underground coal mines is expected to support the collaboration with the ventilation officer and others in the mine, and supervise contractors and their management plans, to ensure a safe and compliant ventilation system and control plan in the mine. This includes:

- identifying key internal stakeholders to support the collection of relevant information and the auditing process.

Behavioural tendencies and skills to support the demonstration of Collaboration:

- Understand the scope of other functions and their statutory requirements, such as the ventilation officer, and manage their interdependencies.
- Cooperate with the ventilation officer, and others in the mine, to ensure ventilation process is correctly undertaken for the ventilation system and ventilation control plan for the mine .
- Verify non-conformances to the legislation and provide advice on opportunities for improvement and areas of good practice in relation to the ventilation system and ventilation control plan.

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 auditor of underground coal mines is to apply highly specialised knowledge of advanced ventilation concepts, systems, and auditing processes to support decision-making. This includes:

- carrying out an audit in accordance with the mine safety management system and applicable standards
- referring to evidence and objective information when auditing the performance of elements of principal control plans that form part for the ventilation system for the mine, and specific control measures for underground coal mines
- identifying risks, such as for major changes to the ventilation system
- reporting on the effectiveness of the ventilation system and ventilation control plan.

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 the initiative to identify and bring to others' attention non-compliance and opportunities for improvement in the ventilation system and plan.
- Use an objective evidence-based approach to decision-making during audits.
- Integrate and combine different set of information, from different sources, to form general conclusions.

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 auditor of underground coal mines is to apply highly specialised knowledge of advanced ventilation concepts and systems to undertake auditing processes in an organised and systematic manner. This includes:

- planning and organising audits, as prescribed by relevant regulation and the SMS
- gathering evidence of implementation and effectiveness of the ventilation system in a systematic and timely manner
- audit ventilation systems and plan.

Behavioural tendencies to support the demonstration of Organised and Disciplined:

- Work in a systematic manner when auditing the performance of elements of principal control plans and control measure of the ventilation system.
- Plan and schedule audits in compliance with legislation and standards.
- Ensure ventilation systems and control plans are implemented appropriately as per standards.
- Recommend 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 auditor of underground coal mines is to act consistently in accordance to legislation, standards and procedures. This includes:

- acting in a way that does not contravene existing legislation, standards and procedures even in situations of considerable internal or external pressure
- identifying situations where ventilation standards are compromised.

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

- Act in accordance to legislation, processes and standards when undertaking the 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 and report non-compliance.
- Verify compliance requirements and remain objective.
- Fulfil responsibilities to the highest professional and ethical standards.
- Evaluating the effectiveness of the ventilation system and ventilation control plan 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 auditor of underground coal mines is to apply highly specialised theoretical and technical knowledge, skills and specific experience to understand and audit contingency plans to accommodate change. This includes:

- auditing ventilation standards and processes within the SMS to institute change in the ventilation system and/or ventilation control plan where necessary.
- updating and realigning control plans and control measures to changing or emerging circumstances, without compromising compliance
- supporting others to implement changes as required by bringing to their attention opportunity for improvement and areas of good practice.

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 auditor of underground coal mines is expected to demonstrate and apply highly specialised knowledge of advanced ventilation concepts, systems, and auditing processes. They should also be able to understand where to source additional information where required. 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 auditing relevant to the SMS and standards for ventilation.
- Theoretical and technical knowledge and skills in ventilation standards, including:
 - fire protection and ventilation standards
 - maintenance standards.
- Operational planning:
 - The scope, boundaries and performance objectives of ventilation standards, as well as monitoring and reviewing the ventilation system and ventilation control plan for the mine.
 - Ability to identify gaps relevant to the ventilation system and ventilation control plan for the mine.
 - Identify non-compliance to the legislation.
 - Monitoring and review of the performance of the ventilation system and ventilation control plan against standards and procedures.

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*

- Audit the application of the principal hazard management plans for all applicable prescribed principal hazards in WHS (M&P) Regs 2014, relevant to 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*

- Standards for the development, implementation and review of the ventilation control plan.
- Implementation of the ventilations control plan.
- Verification of ventilation standards and controls.
- Development and implementation of other control plans (e.g. electrical, mechanical and emergency) relating to ventilation engineering standards.

Specific control measures

- Verify that each control measure in relation to ventilation is adequately supported by relevant systems within the SMS and standards.
- Implementation of specific ventilation control measures.
- System for monitoring the performance of control measures.
- Performance indicators to identify effectiveness and failure of control measures and their establishment.

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.

Emergency management

- Emergency preparedness and response systems, evacuation, notification and response.
- Health and safety issues in underground coal mines for ventilation in an emergency.
- Conditions under which persons 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.

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.
- Types of adverse environmental conditions and how it affects the ventilation system in an underground coal mining operation.
- Standards for audit and verification processes.
- Audit processes and techniques.
- Analytical techniques and processes relevant for auditing ventilation systems and control plan.
- Communication channels and systems to report outcomes of an audit.
- Document control and procedures for documenting relevant communications.
- Recommended resources required to undertake auditing processes.
- Ventilation activities and systems relevant to the underground coal mine.

- Ventilation monitoring devices.
- Reporting tools and resources in the underground coal mine.
- 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.