

## Mechanical engineer in coal mines other than underground mines

### Introduction

Type	Details
Name of the statutory function	Mechanical engineer
Class of mine	Coal mines other than underground mines
Key statutory function?	Yes
Mining supervisor?	No

Statutory functions are certain safety-critical roles in the mining and extractives industry that are regulated by the department. This document has been developed for people who exercise specific statutory functions to help them understand their duties, key relationships, tasks and work practices. Schedule 10 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 (WHS (M&PS) Regs 2014) regulates statutory functions.

This document will:

- inform you of what exercising your function involves
- help mine operators and individuals to develop training and/or mentoring programs to support individuals to practice in the function
- assist mine operators to develop their safety management system, including management arrangements
- guide mine operators and you when identifying maintenance of competence learning to be undertaken.

Please note, a [list of key terms](#) and [legislative provisions](#) can be found at the end of this document.

### Guidance on statutory function

Extract from the WHS (MPS) Reg 2014, Schedule 10, Part 3, clause 21:

- (1) The statutory functions of mechanical engineer are:
  - (a) to develop and review the standards, mechanical engineering practice and procedures for the life cycle of mechanical plant and installations at the mine, and
  - (b) to supervise the installation, commissioning, maintenance and repair of mechanical plant at the mine.

## Exercising the function

An individual exercising the function should:

**Develop and review the standards, mechanical engineering practice and procedures for the lifecycle of mechanical plant and installations at the mine.**

- **Develop:** Establish the standards, mechanical engineering practices and procedures through appropriate consultation, investigation and analysis methods, with reference to any design principles, engineering and technical standards relevant to legislative requirements, WHS and risk management.

The individual must develop the mechanical engineering control plan or supervise a person to do so for the mine operator<sup>1</sup>. The development of the plan should be ongoing as changes are required.

- **Review:** Measuring the effectiveness of standards, mechanical engineering practices and procedures against the performance standards of the safety management system (in particular the mechanical engineering control plan) so they remain current, effective and improved where possible. The individual may rely on other workers and the safety management system processes for review activities to be completed including one or more of the following methods:
    - Reviewing and evaluating audit results, health and safety performance outcomes and remedial actions;
    - Considering relevant external information sources such as original equipment manufacturer, regulator and other WHS type alerts
    - Reviewing risk assessments and controls to ensure they refer to the appropriate standards and control the risks from hazards.
- Specifically, the individual must periodically review the mechanical engineering control plan or supervise a person who is doing so for the mine operator<sup>2</sup>. The plan must be reviewed periodically, the timing of which should be specified in the safety management system by the mine operator, e.g. in response to events.

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<sup>1</sup> Clause 26(5)(a) WHS (Mines and Petroleum Sites) Regulations

<sup>2</sup> Clause 26(5)(b)(i) Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.

## Supervise the installation, commissioning, maintenance and repair of mechanical plant at the mine.

- **Supervise:** provide a combination of direct and general supervision (refer key terms) for workers and their activities associated with mechanical plant for the following prescribed parts of its lifecycle:
- Design – provides fit for purpose plant that includes risk controls that enable the plant to go through the phases of lifecycle without exposing people to unacceptable levels of risk. All risk controls are required to be identified and incorporated into the design in accordance with the hierarchy of risk controls.
  - Manufacture – provides plant that meet the design requirements.
  - Installation – includes transportation and possible assembly at the workplace.
  - Commissioning – verifies conformance to the specified requirements, including risk controls.
  - Operation – requires that plant is operated in a safe manner within the design parameters.
  - Maintenance – ensures that plant continue to operate in the designated manner, which may involve repair and other related activities such as overhaul.
  - Decommissioning – can be conducted in a manner that controls identifiable risks, in accordance with the hierarchy of controls. This phase may involve dismantling, disposal and/or recycling.

The individual may supervise; in conjunction with other individuals exercising a statutory function, or a competent person (see Relationships below), so workers have access to technical advice on mechanical plant at the mine at any time necessary for WHS.

## Scope and relationships

Applies to a coal mine other than underground mines.

### Relationships

An individual will follow the management structure set out in the mine safety management system.

They should be aware of possibly interacting with other individuals exercising statutory functions at the mine.

- **Mining engineering manager** – for the development of mining engineering standards and procedures that are to be applied, and for them to be monitored and reviewed to remain current.
- **Open cut examiner** – assist with applying the safety management system and mechanical engineering control plan.
- **Electrical engineer** – apply the electrical engineering standards and procedures forming part of the mining operations, together with supervision of the lifecycle of electrical plant and installations at the mine.
- **Mining surveyor** – assist with preparing the mine survey plan for prescribed items, if required by the safety management system or necessary for WHS.
- **Qualified electrical and mechanical tradespersons** – as required.

## Statement of minimum tasks

The individual should carry out the following tasks for required elements of the mine's safety management system to develop, supervise and review mechanical plant and installations at the mine.

### Generally

- For the applicable elements of the safety management system:
  - i. Managing risks.
  - ii. Developing mine standards, practices and procedures for contractors and their management plans and applying them through supervision of activities related to mechanical plant and installations.

### Principal hazards

- Supporting the development of principal hazard management plans for any aspects related to mechanical plant and installations and by supervision of the applicable plans.

### Principal control plans

- Carrying out and/or supervising the development and review of the mechanical engineering control plan.
- Assisting in the development and implementation of other principal control plans that apply to the legislated elements of lifecycle for mechanical plant and installations (refer to Scope and Relationships for implementation with other statutory function holders).

**Specific control measures (application as prescribed in the WHS laws<sup>3</sup>)**

- Developing and supervising to apply the specific control measures for all mines and coal mines to mechanical plant and installations, as applicable.
- Assisting in the development of standards, practices and procedures for mechanical plant and installations, including as they apply to emergency plans.

**Information, training, instruction and consultation**

- Providing information, training and instruction as required in supervising and setting mechanical engineering standards, practices and procedures.
- Participating in mine consultation processes internally and externally as required.

**Review**

- Reviewing the performance of the standards, practices and procedures for mechanical plant and installations against the specified standards of the safety management system as part of supervising.
- Conducting or assisting in the audits and reviews of the safety management system, as required, including the prescribed review of the mechanical engineering control plan.

## Key statutory function

The mechanical engineer is a key statutory function under clause 135 of the WHS (MPS) Reg 2014. Only one person is nominated by the mine operator in the safety management system to exercise the key statutory function.

**Note**

The safety management system forms part of the overall management system that is in place at the mine<sup>4</sup>. The mine management system may follow a management approach such as:

- plan, do, check, act
- identify, assess, control and review.

Regardless of what management approach is used at the mine, the individual should exercise the statutory function to meet the safety management system and WHS laws requirements.

<sup>3</sup> Means the *Work Health and Safety Act 2011*, *Work Health and Safety Regulation 2017*, *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

<sup>4</sup> Clause 13(4) *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014*.

## Work practices

There are no typical work practices across all mechanical engineers at mines. The individual should develop their work practices according to the requirements specified by the mine operator and the safety management system.

In general, the work practices of a mechanical engineer vary according to the mine and mine operator.

## Authority

The WHS (M&PS) Regs 2014 enables the function and an individual to practise in it by:

- Clause 136: only an individual who meets the requirements can exercise the function and only if they are nominated by the mine operator.
- Clause 137: the mine operator must ensure the nominated individual continues to meet the requirements and is able to exercise the function.
- Clause 138: an individual must inform the mine operator if they cannot exercise the function.

## Key terms<sup>5</sup>

Term	Definition
Apply	To put into practical operation or to put to use, e.g. an inspection program.
Develop	To bring into being or activity, generate or evolve. The term includes further adding to and amending standards and procedures that form part of the safety management system.
Fit for purpose	Something that is sufficient to do the job it was designed to do. This definition is taken from the <a href="#">NSW code of practice: mechanical engineering control plan</a> .
Implement	To put into effect, either directly or by causing others to carry out actions.
Lifecycle	For mining operations, this means the activities for exploration, construction, commissioning, extraction and those in connection with it, and the decommissioning of a mine.
Mining operations	For a definition of this term, refer to section 7 of the <i>Work Health and Safety (Mines and Petroleum Sites) Act 2013</i> . Mining operations includes lifecycle activities.

<sup>5</sup> Some meanings are derived from the Macquarie Dictionary and added to for context.

Term	Definition
Monitor	To check, observe, supervise and/or record the operation of a mine, part of a mine, workers or related activities so as to assess the suitability of mining engineering standards and procedures to manage potential or actual risks.
Plant <sup>6</sup>	Includes: <ul style="list-style-type: none"> <li>→ any machinery, equipment, appliance, container, implement and tool, and</li> <li>→ any component of any of those things, and</li> <li>→ anything fitted or connected to any of those things.</li> </ul>
Review	A retrospective assessment of something with the intention of instituting change if necessary.
Safety management system	All activities planned and documented by the mine operator to be carried out to manage health and safety risks at the mine in an organised manner.
Standards and procedures	Written internal or external documents that set out or provide guidance on how mining operations should be carried out to achieve a performance level for WHS. This may include mining, electrical, mechanical or other areas. The standards may include: <ul style="list-style-type: none"> <li>→ WHS legislation and codes of practice</li> <li>→ international and Australian standards</li> <li>→ guidance information from various sources that are credible, current and substantive</li> <li>→ industry publications such as WHS reports.</li> </ul>
Supervise	Oversee or direct some part of mining operations. The mechanical engineer should normally provide general supervision, but at times may exercise direct supervision, such as to verify critical controls are working or high-risk activities are being managed. This could include, for example, commissioning a large new piece of plant.
Direct supervision	Verifying through direct observation that mining operations and any contractors involved are applying the requirement of the safety management system.

<sup>6</sup> Section 4 *Work Health and Safety Act 2011*.

Term	Definition
General supervision	Where the individual may not always be present or directly responsible for supervising the activities, but will monitor to ensure that the safety management system is implemented, applied and monitored, and provide advice to supervisors and workers.

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