

Electrical engineer in coal mines other than underground mines

Introduction

Type	Details
Name of the statutory function	Electrical 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 (M&PS) Regs 2014, Schedule 10, Part 3, clause 20:

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

Exercising the function

An individual exercising the function should:

Develop and review the standards and procedures for the installation, commissioning, maintenance and repair of electrical plant and installations at the mine.

Develop: establish the electrical engineering standards 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 electrical engineering control plan or supervise a person to do so for the mine operator¹. The development of the plan should be ongoing as changes as required.

Review: measuring the effectiveness of the electrical engineering standards and procedures against the performance standards of the safety management system (in particular, the electrical engineering control plan) so they remain current, effective and improved where possible. They may rely on other workers and the safety management system processes for review activities to be completed, including one or more of the following:

- Review risk assessments and controls to ensure they refer to the appropriate standards, where applicable, and control the risks from hazards.
- Consider relevant external information sources such as original equipment manufacturer, regulator and other safety and health type alerts.
- Review and evaluate audit results, health and safety performance outcomes, and remedial actions.

Specifically, the individual must periodically review the electrical engineering control plan or supervise a person who is doing so for the mine operator². 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.

Supervise the installation, commissioning, maintenance and repair of electrical plant and installations at the mine

Supervise: provide a combination of direct and general supervision (refer [key terms](#)) for workers and their activities associated with electrical plant and installations for the following prescribed parts of its lifecycle:

- Installation – includes transportation and possible assembly at the workplace.
- Commissioning – verifies conformance to the specified requirements, including risk controls.
- Maintenance and repair – plant and installations continue to operate in the designated manner, which may involve repair and other related activities such as overhaul.

¹ Clause 26(5)(a) Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.

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

Note: the function does not include the supervision of decommissioning. Decommissioning is part of the life cycle of electrical plant and installations, which is risk managed under the electrical engineering control plan. Decommissioning includes identification of isolation points for electrical supplies and identification of hazardous materials and disposal of those materials.

The individual may supervise in conjunction with other individuals exercising a statutory function, or a competent person (see [Scope and relationships](#)), so workers have access to technical advice on electrical plant and installations at the mine at any time necessary for WHS.

Scope and relationships

This statutory function applies to a coal mine other than underground mines.

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.
- **Mechanical engineer** – apply the mechanical engineering standards, practice and procedures forming part of the mining operations, together with supervision of the legislated phases of lifecycle of mechanical 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 tradepersons** – 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 electrical plant and installations at the mine.

Generally

For the applicable elements of the safety management system:

- Manage risks.
- Develop mine electrical engineering standards and procedures and apply them through supervision of activities related to electrical plant and installations.
- Review of procedures for contractors and their management plans. This may also involve cooperating with electrical supply authorities and their contractors.

Principal hazards

Support the development of principal hazard management plans for any aspects related to electrical plant and installations and by supervision of the applicable plans.

Principal control plans

- Carry out and/or supervise the development and review of the electrical engineering control plan.
- Assist in the development and implementation of other principal control plans that apply to the legislated elements of lifecycle for electrical plant and installations (refer to [Scope and relationships](#) for implementation with other statutory function holders).

Specific control measures (application as prescribed in the WHS laws³)

- Develop and supervise the application of specific control measures for all mines and coal mines to electrical plant and installations, as applicable.
- Assist in the development of standards and procedures for electrical plant and installations, including as they apply to emergency plans.

Information, training, instruction and consultation

- Provide information, training and instruction as required in supervising and setting electrical engineering standards and procedures.
- Participate in mine consultation processes internally and externally as required.

Review

- Review the performance of the standards and procedures for electrical plant and installations against the specified standards of the safety management system as part of supervising.
- Conduct or assist in the audits and reviews of the safety management system, as required, including the prescribed review of the electrical engineering control plan.

Key statutory function

The electrical engineer is a key statutory function under clause 135 of the WHS (M&PS) Regs 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 mine⁴. The mine management system may follow a management approach such as:

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

³ 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*.

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

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.

Work practices

There are no typical work practices across all electrical 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 an electrical engineering manager 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 terms⁵

Term	Definition
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.
Electrical installation ⁶	A group of items of electrical equipment that: <ul style="list-style-type: none"> → are permanently electrically connected together, and → can be supplied with electricity from the works of an electricity supply authority or from a generating source.
Electrical plant ⁷	Plant, all or part of which is powered by electricity.
Fit for purpose	Something that is sufficient to do the job it was designed to do. This definition is taken from the NSW code of practice: mechanical engineering control plan .

⁵ Some meanings are derived from the Macquarie Dictionary and added to for context

⁶ Clause 145 of the Work Health and Safety Regulation 2017.

⁷ Clause 3 Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.

Term	Definition
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.
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.
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"> → WHS legislation and codes of practice → international and Australian standards → guidance information from various sources that are credible, current and substantive → industry publications such as WHS reports.
Supervise	Oversee or direct some part of mining operations. The electrical 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.

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.
Underground mine ⁸	Means that part of a mine that is beneath the surface of the earth and includes plant and structures that extend continuously from the surface into that part of the mine but does not include a part of the mine in which high wall mining is being carried out.

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⁸ Clause 3 Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.