

December 2022

Statutory function description

Electrical engineer of underground mines other than coal mines

Introduction

Type	Details
Name of the statutory function	Electrical engineer
Only required if	Total connected power at mine is greater than 1,000 kilowatts or if high voltage is utilised
Class of mine	Underground mines other than coal mines
Key statutory function?	Yes
Mining supervisor?	No

Table 1 Overview of statutory function

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 2022 regulates statutory functions.

This document will:

- inform you of what exercising your function involves
- help mine operators and you to develop training or programs to support individuals to practise 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 NSW WHS (Mines and Petroleum Sites) Regulation 2022, Schedule 10, part 3 section 28:

The statutory functions of electrical engineer are to develop, supervise, monitor and review the standards and procedures for the installation,

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

Exercising the function

An individual should:

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. It includes developing the electrical engineering control plan or supervise a person to do so for the mine operator¹. The development of the plan is an ongoing process and it may regularly change to include amendments, potentially as outcomes of the review process.

Supervise: provide a combination of direct and general supervision for electrical plant and installations for the following prescribed parts of its lifecycle:

- installation, including transportation and possible assembly at the workplace
- commissioning, by verifying conformance to the specified requirements including risk controls
- maintenance and repair of plant and installations to continue to operate in the designed manner, which may involve repair and other related activities such as overhaul.

Monitor: periodically obtain data and information to verify whether the standards and procedures are being applied and achieving their purpose (i.e. 'fit for purpose') by:

- analysing reports and information provided by other statutory function holders and consultative mechanisms under the safety management system.
- observing mining operations and verifying compliance with legislation to support a safe and healthy workplace for all mine workers.
- ensuring electrical engineering standards and procedures used in any plans, such as trigger action response plans (TARPs), are relevant and timely.
- verifying electrical engineering standards and procedures achieve the required level of control in principal hazard management plans and principal control plans.
- evaluating audit outcomes on the effectiveness of the safety management system against its electrical performance standards and procedures.

Review: measure the effectiveness of electrical engineering standards and procedures against the performance standards of the safety management system (in particular the electrical engineering control plan) to retain their currency and effectiveness and to allow improvement where possible. It should also involve relying on 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
- reviewing risk assessments and controls to ensure they refer to the appropriate standards, where applicable, and control the risks from hazards.
- considering relevant external information sources such as original equipment manufacturer information releases, communications from the Resources Regulator and other work health and safety alerts.

Specifically, the individual must periodically review the electrical engineering control plan or supervise a person to do so for the mine operator². The plan must be reviewed periodically, the

¹ clause 26(5)(a) WHS (Mines and Petroleum Sites) Regulations

² section 30(5)(b)(i) WHS (Mines and Petroleum Sites) Regulations 2022

timing of which should be specified in the safety management system by the mine operator e.g. in response to events.

Scope and relationships

Applies to underground mines only, but not underground coal 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, as they interact with electrical plant and installations
- **Mining surveyor (only required if mine survey plan required)** – assist with preparing and signing the mine survey plan for prescribed items
- **Qualified electrical tradesperson** – cooperate with to ensure mining and electrical engineering standards and procedures for mining operations are compatible and effective
- **Qualified mechanical tradesperson** – cooperate with to ensure mining and mechanical engineering standards and procedures for mining operations are compatible and effective.

Statement of minimum tasks

The individual should carry out the following tasks for electrical plant and installations as required by elements of the safety management system:

Generally

For the applicable elements of the safety management system:

- managing risks
- developing, supervise and monitor the mine standards and procedures for the management of contractors and their management plans and applying them through supervision for electrical plant and installations. This may also involve co-operating with electrical supply authorities and their contractors.

Principal hazards

- Supporting the development of principal hazard management plans for any electrical plant and installations elements and supervising by applying applicable plans.

Principal control plans

- Carrying out and/or supervising the development and review of the electrical engineering control plan
- Assisting in the 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 laws ³)

- Developing and supervising to apply the specific control measures for all mines and underground mines to electrical plant and installations, as applicable

³ As per NSW WHS (Mines and Petroleum Sites) Act 2013, referring to WHS Act 2011 and WHS Regulations 2017, and the Act and NSW WHS (Mines and Petroleum Sites) Regulation 2022

- Assisting in the development of standards and procedures for electrical plant and installations, including as they apply to emergency plans.

Information, training, instruction and consultation

- Supporting information, training and instruction as required in supervising and setting standards
- Participating in mine consultation processes internally and externally, as directed.

Review

- Reviewing 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
- Conducting or assisting 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 schedule 15 of the WHS (Mines and Petroleum Sites) Regulation 2022. 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 of a mine. This is a requirement under section 18(4) of the WHS (Mines & Petroleum sites) Regulation 2022. 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.

Work practices

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

In general, the work practices of a mining engineering manager vary according to the mine and mine operator. In NSW, mines can range from small mining operations operated by an individual or private company and with very few workers to large, complex mines operated by publicly listed companies and with an extensive workforce.

Authority

The WHS (Mines & Petroleum Sites) Regulation enables the function and an individual to practise in it by:

- Clause 132: only an individual who meets the requirements can exercise the function and only if they are nominated by the mine operator.
- Clause 133: the mine operator must ensure the nominated individual continues to meet the requirements and is able to exercise the function.
- Clause 134: an individual must inform the mine operator if they cannot exercise the function.

Key terms

Term	Definition ⁴
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 plant	Plant, all or part of which is powered by electricity. ⁵
Electrical installation	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.⁶
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 Work Health and Safety (Mines and Petroleum Sites) Act 2013. Mining operations includes lifecycle activities (refer above).
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.

⁴ Some meanings have been taken from the Macquarie Dictionary.

⁵ Refer to schedule 15 of the WHS (Mines and Petroleum Sites) Regulations.

⁶ Refer to clause 145 of the WHS Regulations.

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.
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 coal mine	An underground mine that is a coal mine. ⁷
Underground mine	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. ⁸

Table 2 Key terms

© State of New South Wales through Regional NSW 2022. The information contained in this publication is based on knowledge and understanding at the time of writing (December 2022). However, because of advances in knowledge, users are reminded of the need to ensure that the information upon which they rely is up to date and to check the currency of the information with the appropriate officer of the Regional NSW or the user’s independent adviser.

⁷ Schedule 15 NSW WHS (Mines and Petroleum Sites) Regulation 2014

⁸ Schedule 15 NSW WHS (Mines and Petroleum Sites) Regulation 2014