Queensland

Mining and Quarrying Safety and Health Act 1999

MINING AND QUARRYING SAFETY AND HEALTH REGULATION 2001

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Information about this reprint

This regulation is reprinted as at 1 July 2004. The reprint shows the law as amended by all amendments that commenced on or before that day (Reprints Act 1992 s 5(c)).

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Queensland

MINING AND QUARRYING SAFETY AND HEALTH REGULATION 2001

TABLE OF PROVISIONS

PART 6—FACILITIES AND PROCESSES

PART 7—HAZARDOUS SUBSTANCES AND DANGEROUS GOODS

Division 1—Provisions applying to all hazardous substances and dangerous goods

Subdivision 1—Preliminary

Subdivision 2—Information about hazardous substances and dangerous goods

Subdivision 3—Dealing with hazardous substances and dangerous goods

Subdivision 4—Major hazard facilities

PART 9—PERSONS ON SITE

Division 1—Fitness

Division 2—Training and assessment

Division 3—Carrying out tasks

Division 4—Miscellaneous

PART 10—PLANT GENERALLY

Division 1—Selection and design

Division 2—Other provisions about plant

MINING AND QUARRYING SAFETY AND HEALTH REGULATION 2001

[as amended by all amendments that commenced on or before 1 July 2004]

CHAPTER 1—PRELIMINARY

1 Short title

This regulation may be cited as the *Mining and Quarrying Safety and Health Regulation 2001*.

2 Commencement

This regulation commences on 16 March 2001.

3 Definitions

The dictionary in schedule 6 defines particular words used in this regulation.

CHAPTER 2—WAYS OF ACHIEVING AN ACCEPTABLE LEVEL OF RISK

PART 1—PRELIMINARY

4 Ways of achieving an acceptable level of risk

(1) This chapter, other than sections 87(5), 120(1) and (2), 131(6) and 138(3),[1] prescribes ways of achieving an acceptable level of risk at a mine in the circumstances mentioned in the chapter.

(2) However, this chapter does not deal with all circumstances that expose someone to risk at a mine.

(3) A person may discharge the person's safety and health obligation in the circumstances mentioned in this chapter only by following the prescribed ways.[2]

PART 2—SAFETY AND HEALTH RISK MANAGEMENT

Division 1—Risk management practices and procedures

5 Risk management practices and procedures

The site senior executive must ensure the mine's risk management practices and procedures are—

(a) established in consultation with the mine workers; and

(b) compatible with, and coordinated throughout the mine for, all operations at the mine.

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1 Sections 87 (Assessing workers to decide fitness level), 120 (Confidentiality of worker's medical record), 131 (Health assessment of workers) and 138 (Health surveillance)

2 See section 31 (Discharge of obligations) of the Act for the penalty for failing to discharge the obligation.

Division 2—Risk management process

6 Hazard identification

(1) A person who has an obligation under the Act to manage risk at a mine must identify hazards in the person's own work and activities at the mine.

(2) The operator must ensure hazard identification for the mine's operations is done during the operations' planning and design.

(3) The site senior executive must ensure hazard identification is done—

(a) when operations start at the mine; and

(b) during the operations; and

(c) when the operations change in size, nature, complexity or another way; and

(d) for a hazard caused by a hazardous substance or dangerous good—periodically, at intervals not exceeding 5 years.

(4) For hazards caused by hazardous substances or dangerous goods, the site senior executive must ensure the identification includes the following—

(a) hazardous substances or dangerous goods being processed or used for processing;

(b) hazardous substances or dangerous goods that are a product, by-product or waste product of operations;

(c) hazardous substances or dangerous goods occurring in—

(i) the natural environment; or

(ii) plant or facilities; or

(iii) energy sources.

7 Risk analysis

(1) A person who has an obligation under the Act to manage risk at a mine must analyse risk in the person's own work and activities to decide whether the risk is at an acceptable level.

(2) The person must have regard to the following in analysing the risk—

(a) the results of hazard identification, risk monitoring and incident investigations carried out for the mine;

(b) the work environment and work methods for the mine's operations;

(c) the interaction of hazards present at the mine;

(d) the effectiveness and reliability of hazard controls in use at the mine;

(e) other reasonably available relevant information and data from, and practices in, other industries and mining operations.

8 Risk reduction

(1) A person who has an obligation under the Act to manage risk at a mine must, as far as reasonably practicable, apply hazard controls in the following order—

(a) elimination of the hazard;

(b) substitution with a lesser hazard;

(c) separation of persons from the hazard;

(d) engineering controls;

Examples of engineering controls—

1. Using fans and ducting to remove dust.
2. Using guards on conveyors.

(e) administrative controls;

Examples of administrative controls—

1. A restriction on the time a worker is exposed to a hazard.
2. A procedure or standard work instruction.

(f) personal protective equipment.

(2) The site senior executive must ensure hazard controls used to reduce risk in the mine's work and local environments are appropriate having regard to the following—

(a) the interaction of hazards present in the environments;

(b) the effectiveness and reliability of the controls;

(c) other reasonably available relevant information and data from, and practices in, other industries and mining operations.

9 Risk monitoring

(1) A person who has an obligation under the Act to manage risk at a mine must monitor risk in the person's own work and activities at the mine.

(2) The site senior executive must ensure risk in the mine's work and local environments caused by the mine's operations is monitored—

(a) when the operations start; and

(b) at appropriate intervals or stages during operations at the mine; and

(c) when the mine's risk management practices or procedures change significantly.

(3) Monitoring must include—

(a) the occurrence of incidents, injuries and ill health; and

(b) the level of hazards present in the mine's work environment; and

(c) for monitoring under subsection (2)—the level of hazards from the mine's operations present in the mine's local environment.

(4) If it is appropriate, having regard to the nature and level of a hazard present in the work environment, the monitoring must include 1 or more of the following—

(a) personal monitoring to decide a worker's level of exposure to the hazard;

Example of personal monitoring—

Monitoring a worker using a dosimeter or other instrument to measure the worker's level of exposure to noise.

(b) self-monitoring to detect effects of the hazard;

Example of self-monitoring—

Self-recognition of physical symptoms of heat stress or fatigue.

(c) biological monitoring to decide a worker's level of exposure to the hazard;

Example of biological monitoring—

Testing a blood sample for lead.

(d) health surveillance under section 138.

Division 3—Records about risk management

10 Risk management record

(1) This section applies to a risk management process carried out at a mine—

(a) because the process is essential for managing risk from a hazard that is present, or is likely to be present in proposed operations, at the mine; or

Example for paragraph (a)—

A risk management process carried out under section 32.[3]

(b) under a—

(i) guideline; or

(ii) directive given by an inspector or inspection officer under part 9 of the Act.[4]

(2) The site senior executive must ensure a record of the process is made containing the following details—

(a) the names of the persons involved in the risk assessment and their respective positions in the mine's management structure;

(b) a description of the hazard to which the process relates;

(c) the method used for assessing the likelihood and consequences of the risk;

(d) the controls proposed to reduce the risk.

(3) The site senior executive must ensure the record is kept at the mine until the hazard to which the process relates is no longer present at the mine.

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3 Section 32 (Risk management for emergencies)

4 Part 9 (Inspectors and inspection officers and directives) of the Act

11 Risk monitoring record

(1) The site senior executive must ensure a record of monitoring carried out under section 9 is made and kept for the following period—

(a) for a hazard with a cumulative or delayed effect—30 years;

Example for paragraph (a)—

Silica, noise or vibration.

(b) for another hazard—7 years.

(2) If the mine ceases operations in the period the record is required to be kept under subsection (1), the site senior executive must ask for, and comply with, the chief executive's directions about the record's storage.

PART 3—ACCIDENTS, INCIDENTS AND INJURIES

12 First aid and medical treatment

The site senior executive must ensure a person who is injured, or whose health is affected at the mine is given appropriate first aid or medical treatment.

13 Prescribed types of serious accidents and high potential incidents

(1) A type of serious accident or high potential incident mentioned in schedule 1, part 1 is prescribed for section 197(1)[5] of the Act.

(2) A type of serious accident or high potential incident mentioned in schedule 1, part 2 is prescribed for section 198(1)(c)[6] of the Act.

14 Reporting accidents and high potential incidents

A mine's safety and health management system must include procedures for workers reporting accidents and high potential incidents to the site senior executive.

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5 Section 197 (Site not to be interfered with without permission) of the Act

6 Section 198 (Action to be taken in relation to site of accident or incident) of the Act

15 Site senior executive's investigation of incidents

(1) In investigating the cause of an incident at a mine, the site senior executive must use techniques that—

(a) are appropriate for—

(i) the nature of the incident; and

(ii) the nature and level of the hazards involved; and

(b) are integrated with the risk management process; and

(c) involve appropriate participation by persons involved in the incident.

(2) A mine's safety and health management system must provide for documenting the techniques that must be used for investigating incidents.

16 Giving inspector details of accidents and high potential incidents

(1) This section applies if an accident or high potential incident happens at a mine.

(2) If requested by an inspector, the site senior executive must give the inspector a plan, of the type and at the scale required by the inspector, or photographs, showing relevant details about the accident or incident.

PART 4—ELECTRICAL[7]

Division 1—Controlling electrical work

17 Appointment of persons to control electrical work

If electrical work is, or is proposed to be, undertaken in operations at a mine, the site senior executive must appoint, in writing, 1 or more persons to control the electrical work.

7 See also part 10 (Plant generally).

18 Acknowledgment of appointment

(1) A person appointed to control electrical work at a mine must acknowledge the appointment by written notice given to the site senior executive.

(2) The notice is prescribed for section 59(1)(e)[8] of the Act as a matter that must be included in the mine record.

Division 2—Notice of introduction or disconnection of electricity

19 Duty to give notice of proposed introduction or disconnection of electricity

Before an electricity supply exceeding 75 kW capacity is introduced to, or permanently disconnected from, a mine, the site senior executive must notify an inspector of the proposed introduction or disconnection.

Division 3—Operating electrical equipment

20 Electrical plans and data

(1) The site senior executive must ensure the following are kept at the mine for the safe operation of each electrical installation at the mine—

(a) up-to-date plans identifying and showing the location of electrical installations at the mine, including buried electrical services;

(b) electrical safety data including equipment ratings and protection settings for circuit protection devices.

(2) In this section—

"protection setting", for a circuit protection device, means the current, voltage or operating time at which the device is set to trip when it detects an electrical fault in the circuit.

8 Section 59 (Mine record) of the Act

21 Working on electrical equipment that has explosion-protection

(1) A person must not carry out work on electrical equipment that has explosion-protection, unless the person has the competencies to carry out the work.

(2) In this section—

"explosion-protection" means explosion-protection as defined under AS/NZS 2381 'Electrical equipment for explosive atmospheres—Selection, installation and maintenance'.[9]

Division 4—Control and protection for electrical equipment

22 General

The operator or site senior executive must ensure—

(a) switchgear used at the mine allows for reliable circuit interruption, under fault conditions, at all points in the mine's electrical distribution system; and

(b) each electrical circuit at the mine is protected against overload, short circuit and earth fault under all operating conditions to effectively—

(i) interrupt the electricity supply; and

(ii) isolate faults.

23 Interrupting electricity supply to particular plant

The operator or site senior executive must ensure the electricity supply to the following plant at the mine is capable of interruption from an accessible position remote from the plant—

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9 AS/NZS 2381 Electrical equipment for explosive atmospheres—Selection, installation and maintenance—

1.4.18 Explosion-protection

Technique of protection which is applied to equipment or part of equipment to prevent the ignition of flammable vapours and gases or combustible dusts in hazardous areas.

(a) a stacker, reclaimer, dredge, floating treatment plant and underground electrical installation;

(b) other plant identified by a risk assessment as needing its electricity supply to be capable of interruption from an accessible position remote from the plant to ensure an acceptable level of risk.

24 Automatic control

The operator or site senior executive must ensure—

(a) each automatic, programmable or computerised electrical control system at the mine operates safely under all operating conditions, including power supply instability or failure; and

(b) the emergency stopping systems and safety alarms at the mine remain effective if there is a fault or failure in a system mentioned in paragraph (a).

25 Earthing

The operator or site senior executive must ensure each earthing system at the mine is installed and maintained at sufficiently low impedance and has sufficient capacity to ensure—

(a) reliable operation of electrical protective systems and devices; and

(b) adequate protection against contact with conductive parts that have become live under fault conditions.

26 Earth leakage protection

(1) The operator or site senior executive must ensure the mine has earth leakage protection for each electrical circuit exceeding extra low voltage that—

(a) is in an underground mine; or

(b) is in a portable, transportable or mobile apparatus; or

(c) has an outlet for, or supplies electricity to, a trailing cable or flexible lead.

(2) Subsection (1) does not apply to the following—

(a) an electrical circuit—

(i) isolated from earth; or

(ii) that uses the earth to carry all or part of the normal current of a circuit; or

(iii) for which continuity of supply is necessary to maintain safety;

(b) a control or lighting circuit of less than 120 V a.c.

27 Isolation facilities

(1) The operator or site senior executive must ensure each item of electrical equipment used at the mine has a full current isolation facility in a location that is easily accessible by a person required to carry out the isolation.

(2) The operator or site senior executive must also ensure the isolator is—

(a) clearly marked or labelled as the isolator for the plant; and

(b) compatible with the mine's isolation and lock-out procedures.

28 Protection for transportable and mobile equipment

(1) This section applies if transportable or mobile equipment used at a mine is supplied with electricity exceeding extra low voltage by a trailing or reeling cable, other than a low voltage cable that has—

(a) no joining plugs or sockets; and

(b) earth leakage protection with a rated tripping current of not more than 30 mA; and

(c) individually screened power conductors.

(2) The site senior executive must ensure the equipment has earth continuity protection to—

(a) isolate the electricity supply to the equipment immediately after the earthing circuit is broken or the cable is disconnected or decoupled; and

(b) prevent a person inadvertently contacting live parts of the equipment.

29 Protection from live parts of electrical equipment

The operator or site senior executive must ensure electrical equipment exceeding extra low voltage used at the mine has a device or feature for preventing a person inadvertently contacting live parts of the equipment.

Example of device or feature—

An enclosure, shield, insulation, interlocking device or automatic disconnection device.

30 Prospective touch voltage

(1) The operator or site senior executive must ensure the prospective touch voltage at the mine is limited to a level necessary to achieve an acceptable level of risk, having regard to the ways stated in a guideline for limiting prospective touch voltage.

(2) In this section—

"prospective touch voltage" means the highest voltage a person is liable to be exposed to if the person contacts simultaneously accessible parts in an electrical installation during an electrical fault.

31 Voltage rise

The operator or site senior executive must ensure voltage rise in an electrical installation at the mine caused by lightning strike, static electricity, voltage surges and other transient voltages is limited to a level necessary to achieve an acceptable level of risk, having regard to the ways stated in a guideline for limiting voltage rise.

PART 5—EMERGENCIES

32 Risk management for emergencies

(1) The site senior executive must ensure the risk management process mentioned in part 2, division 2, is carried out for reasonably foreseeable

emergencies at the mine to decide the resources, facilities and procedures necessary to—

(a) prepare the mine for managing and controlling the hazards causing the emergencies; and

(b) respond appropriately to the emergencies.

(2) The resources, facilities and procedures considered in the risk management process must deal with the following—

(a) coordinating control of emergencies;

(b) giving notice, information and warnings about emergencies;

(c) the immediate availability of trained rescue persons or emergency services;

(d) locating, and accounting for, persons;

(e) controlling or re-establishing control of the hazard causing the emergency;

(f) isolating the area of the incident, including, for example, by cutting off the supply of energy to the area of the incident;

(g) emergency egress and evacuation, including refuges;

(h) first aid and persons trained in giving first aid;

(i) liaising with, and using, local or state emergency services;

(j) backup services and facilities for the emergency.

33 Emergency preparedness—general

The site senior executive must ensure the mine has the resources and facilities decided as necessary under section 32 for the mine's preparedness for reasonably foreseeable emergencies.

34 Emergency preparedness for dangerous goods

The site senior executive for a mine at which dangerous goods are used or produced must ensure the provisions about emergency preparedness in any current national standard for storing and handling workplace dangerous goods are complied with.

35 Emergency response plan

(1) A mine's safety and health management system must include an emergency response plan developed having regard to the risk management process carried out under section 32.

(2) The site senior executive for a mine that is not required to have a safety and health management system under the Act must ensure the mine has an emergency response plan developed having regard to the risk management process carried out under section 32.

(3) The operator of a mine mentioned in subsection (2) must provide adequate resources at the mine to ensure the effectiveness and implementation of the plan.[10]

36 Evacuation

(1) This section applies to a mine if resources, facilities or procedures for evacuating persons are decided as necessary for the mine under section 32.

(2) The site senior executive must ensure the mine has the following as are appropriate, having regard to the nature and complexity of the mine's operations—

(a) a normal way of access;

(b) signed escape ways independent of the normal way of access;

(c) assembly areas;

(d) equipment and training for self-rescue;

(e) resources, facilities and procedures for tracing persons involved in an incident at the mine.

(3) If an emergency happens at the mine and creates, or is likely to create, an unacceptable level of risk, the site senior executive must ensure—

(a) persons who are, or may be, harmed or affected as a result of the emergency are evacuated from the area of unacceptable risk; and

10 See section 38(1)(f) (Obligations of operators) of the Act for the operator's obligation about resources for a mine that is required to have a safety and health management system.

(b) persons, other than those required to handle the situation, are prevented from entering the area.

37 Refuges

(1) This section applies to a mine if refuges for emergencies are decided as necessary for the mine under section 32.

(2) The site senior executive must ensure the mine has the following as are appropriate, having regard to the nature and complexity of the mine's operations—

(a) fresh air bases;

(b) self-contained refuge chambers;

(c) secure areas where persons can be protected against the hazard causing the incident.

(3) A person must seek refuge until rescued if—

(a) an emergency happens at a mine and creates, or is likely to create, an unacceptable level of risk for the person; and

(b) the person can not be evacuated promptly from the area of unacceptable risk.

38 Rescue

(1) This section applies to a mine if facilities or procedures for rescuing persons in emergencies are decided as necessary for the mine under section 32.

(2) The site senior executive must ensure the mine has the following as are appropriate, having regard to the nature and complexity of the mine's operations—

(a) facilities or procedures for—

(i) persons, and using equipment, on site; and

(ii) liaising with, and using, local or state emergency services;

(b) if the nature or remoteness of the mine's operations limit the effectiveness of local or state emergency services—

(i) the availability of suitably trained site-based persons and suitable rescue equipment; and

(ii) facilities and procedures for liaising with, and using, persons and equipment from other operations and agencies for carrying out a rescue.

(3) The site senior executive must ensure reasonable action is taken to rescue persons from an area of unacceptable risk, or a refuge, at the mine.

(4) In deciding what action is reasonable for subsection (3), the site senior executive must have regard to the risk to persons in carrying out the rescue.

39 Resources for first aid and medical treatment

(1) This section applies to a mine if facilities or procedures for first aid or medical treatment for emergencies are decided to be necessary for the mine under a risk management process carried out under section 32.

(2) The site senior executive must, if it is appropriate having regard to the nature and complexity of the mine's operations, ensure the mine has the following—

(a) adequate supplies of first aid and trauma kits;

(b) basic life support training for workers;

(c) equipment appropriate for controlling the hazards on site identified by the risk management process;

(d) facilities and procedures for liaising with, and using, local and state emergency services;

(e) if the nature or remoteness of the mine's operations limit the effectiveness of local or state emergency services—

(i) the availability of suitably trained site-based personnel and suitable first aid and medical equipment; and

(ii) facilities and procedures for evacuating persons from the site for medical treatment.

40 Maintaining and improving emergency response capability

(1) The site senior executive must ensure the mine's emergency response facilities and equipment are inspected regularly and maintained in a fully operational condition.

(2) The site senior executive must also ensure the mine's emergency response plan is—

(a) tested and reviewed at least once a year, having regard to the nature and complexity of the mine's operations; and

(b) amended, if necessary, to achieve an acceptable level of risk.

41 Mine rescue plan

(1) The site senior executive must ensure the mine has a current rescue plan showing the mine's emergency facilities, including relevant services reticulation and communication arrangements.

(2) For an underground mine, the plan must also show the following—

(a) the direction and quantity of the ventilating airflow;

(b) the location of ventilation controls.

(3) In an emergency, the site senior executive must make available to the persons carrying out the rescue a sufficient number of copies of the plan at a scale suitable for use by the persons in the emergency.

PART 6—FACILITIES AND PROCESSES

42 Dredging

If a dredge is used at a mine, the site senior executive must ensure the mine has a written procedure for the following—

(a) ways of preventing—

(i) the dredge capsizing or sinking; and

(ii) persons falling overboard;

(b) emergency rescue procedures for an event mentioned in paragraph (a).

43 Excavations

(1) If an excavation exists on a mine site, the site senior executive must ensure appropriate facilities are provided to minimise the risk to persons from falling into the excavation.

Example of 'appropriate facilities'—

A fence, barricade, bund wall or signage.

(2) In this section—

"excavation" includes a shaft, stope, pass, winze, mine or quarry face, trench, costean and pit.

44 Ground control

(1) A person who has an obligation under the Act to manage risk in relation to ground control at a mine during the mine's design, operation or abandonment must ensure appropriate measures are taken to prevent local and area failures in ground integrity.

(2) The person must have regard to the following in deciding the appropriate measures—

(a) local geological structure and rock properties and their influence on rock stability;

(b) the size and geometry of the mine's openings;

(c) the presence of previously excavated or abandoned underground workings;

(d) water inflow, drainage patterns, groundwater regimes and mine dewatering procedures and their influence on rock stability over time;

(e) the analysis and interpretation of relevant geotechnical data, including the monitoring of openings and excavations.

(3) The measures must include the following—

(a) the minimisation of rock damage, from blasting, at the excavation perimeter;

(b) the use of appropriate equipment and procedures for scaling;

(c) the proper design, installation and quality control of rock support;

(d) the timing of ground support to take account of rock conditions and behaviour.

45 Mine layout, design and construction

A person who has an obligation under the Act to manage risk at a mine in relation to the mine layout, design and construction must ensure the layout, design and construction is carried out having regard to the following—

(a) relevant geological, geotechnical, meteorological and topographical data;

(b) other relevant information, including information about the following—

- access and travel-ways
- accommodation
- extraction processes and facilities
- fixed emergency facilities
- ground control
- hazardous substances at the mine
- noise and dust
- stockpiles, dumps, tailings dams
- treatment processes and facilities
- underground and surface water
- vehicle interaction
- ventilation.

46 Mine roads

(1) A person who has an obligation under the Act to manage risk at a mine in relation to the design and construction of the mine's roads must ensure the specification for the design and construction enables the safe movement of vehicles about the mine.

(2) The specification must have regard to the particular conditions at the mine, including the following—

(a) the characteristics of the mine vehicles;

(b) the types of materials used for road construction;

(c) the mine's operations.

47 Rail haulage

If rail mounted locomotive haulage is used at a mine, the site senior executive must ensure the mine has a written procedure for its safe operation.

48 Ventilation

A person who has an obligation under the Act to manage risk in relation to ventilation at a mine must ensure appropriate measures are taken to ensure the ventilating air in a place where a person may be present at the mine is of a sufficient volume, velocity and quality to achieve a healthy atmosphere.

49 Working at heights

The site senior executive must ensure that when a person works at a height of more than 2.4 m, appropriate facilities are provided to minimise the risk to persons from falling.

Example of 'appropriate facilities'—

A fence, barricade, scaffold, hand rail, bund wall, safety harness, safety restraint or fall arrest equipment.

PART 7—HAZARDOUS SUBSTANCES AND DANGEROUS GOODS

Division 1—Provisions applying to all hazardous substances and dangerous goods

Subdivision 1—Preliminary

50 Meaning of "hazardous substance"

A **"hazardous substance"** is a substance—

(a) listed as a designated hazardous substance in NOHSC's document entitled 'List of Designated Hazardous Substances [NOHSC:10005]'; or

(b) meeting the criteria stated in NOHSC's document entitled 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008]'.

51 Meaning of "dangerous goods"

Goods are **"dangerous goods"** if they are defined under the ADG Code as—

(a) dangerous goods; or

(b) goods too dangerous to be transported.

Subdivision 2—Information about hazardous substances and dangerous goods

52 MSDS and NICNAS summary report

(1) The site senior executive must ensure—

(a) an MSDS or NICNAS summary report is—

(i) obtained or prepared for each hazardous substance and dangerous good at the mine; and

(ii) kept at the mine; and

(b) copies of the MSDS or summary report are made available to persons dealing with the substance or good at the mine.

(2) The site senior executive must ensure an MSDS prepared for a hazardous substance or dangerous good produced at the mine complies with NOHSC's document entitled 'National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2011]'.

53 Marking, labelling and giving information about hazardous substances and dangerous goods

(1) The site senior executive must ensure hazardous substances and dangerous goods and anything containing or being used to transport the substances or goods at the mine are marked or labelled to—

(a) warn persons of the presence of the substances or goods; and

(b) identify the substances or goods; and

(c) if it is necessary for managing risk, provide basic information about storing and handling the substances or goods.

Example of a thing containing or being used to transport hazardous substances or dangerous goods for subsection (1)—

A package, storage or process vessel, conveyor belt, pipe, duct, storage area, dump, spill or vehicle.

Example of basic information for paragraph (c)—

'Keep dry'.

(2) If it is not practicable to mark or label a hazardous substance or dangerous good or thing, the site senior executive must ensure a notice that gives the warning, identification or information mentioned in subsection (1) is placed in a conspicuous place as near as practicable to the substance, good or thing.

(3) The site senior executive must ensure the mark, label or notice complies with the following—

(a) NOHSC's document entitled 'National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012]';

(b) NOHSC's document entitled 'Guidance Note for Placarding Stores for Dangerous Goods and Specified Hazardous Substances [NOHSC:3009]';

(c) the ADG Code;

(d) AS 1345 ‘Identification of the contents of piping, conduits and ducts’.

Subdivision 3—Dealing with hazardous substances and dangerous goods

54 Selecting hazardous substances and dangerous goods

The site senior executive must ensure hazardous substances and dangerous goods selected for use at the mine do not create an unacceptable level of risk to a person when stored, handled or used under relevant standard work instructions.

55 Standard work instructions for storing, handling and using hazardous substances and dangerous goods

(1) The site senior executive must ensure the mine has standard work instructions for storing, handling and using hazardous substances and dangerous goods at the mine.

(2) In developing a standard work instruction, the site senior executive must ensure regard is had to the MSDS or NICNAS summary report or other relevant information for the substance or good.

56 Storing and handling hazardous substances and dangerous goods

(1) A person who has an obligation under the Act to manage risk at a mine in relation to storing and handling hazardous substances must ensure a hazardous substance is stored and handled at the mine in a way that is appropriate to the nature of the substance, so that it is—

(a) protected against damage and deterioration; and

(b) secured to prevent loss, misuse and theft; and

(c) for a liquid—bunded to contain spillage.

(2) A person who has an obligation under the Act to manage risk at a mine in relation to storing and handling dangerous goods must ensure the goods are stored and handled under any current national standard, or national code of practice, for storing and handling workplace dangerous goods.

57 Monitoring, and taking action about, hazardous substances and dangerous goods

(1) The site senior executive must ensure appropriate monitoring is carried out at the mine to—

(a) check the location and amount of hazardous substances and dangerous goods on site; and

(b) check for deterioration of the substances and goods or their packaging; and

(c) ensure the substances and goods are fit for their intended use; and

(d) detect leaks, spills and unintended emissions of the substances and goods; and

(e) detect misuse, theft or other loss of the substances and goods.

(2) The monitoring must be carried out under relevant procedures or standard work instructions.

(3) If the monitoring shows hazardous substances or dangerous goods have deteriorated or are not fit for their intended use, the site senior executive must ensure the substances or goods are disposed of under section 59.

58 Dealing with leaks and spills

(1) The site senior executive must ensure the mine has a standard work instruction for dealing with leaks and spills of hazardous substances and dangerous goods at the mine.

(2) In developing the standard work instruction, the site senior executive must ensure regard is had to the MSDS or NICNAS summary report or other relevant information about the safe use of the substance or good, including for example, any current national code of practice for storing and handling workplace dangerous goods.

59 Disposal

(1) This section applies to the following at a mine—

(a) hazardous substances or dangerous goods that have deteriorated or are past their use by date;

(b) hazardous substances or dangerous goods, or anything contaminated by the substances or goods, that are no longer required for use at the mine, including, for example, because the mine is to be abandoned.

(2) Subject to section 73,[11] the site senior executive must ensure the substances, goods or things are disposed of—

(a) in accordance with the relevant MSDS or information provided by the manufacturer, importer or supplier under section 43(2)(a) of the Act; and

(b) in a way that does not create an unacceptable level of risk during operations at the mine, after the mine's operations stop or after the mine is abandoned.

(3) The site senior executive must ensure the site of each permanent disposal facility, or other disposal area for hazardous substances or dangerous goods at the mine, is shown on the plans of the mine workings under section 58 of the Act.

Subdivision 4—Major hazard facilities

60 Possible major hazard facilities

(1) This section applies to a mine that meets the criteria for a major hazard facility under NOHSC's document entitled 'National Standard for the Control of Major Hazard Facilities [NOHSC:1014]'.

(2) The mine's safety and health management system must provide for the mine's operations to be carried out under—

(a) this regulation; and

(b) the national standard safety and health provisions—

(i) to the extent the provisions are consistent with the Act and this regulation; and

(ii) as if a reference in the provisions to the relevant public authority were a reference to the chief inspector of mines.

11 Section 73 (Disposing of explosives)

(3) In this section—

"national standard safety and health provisions" means parts 6 to 10 of the document mentioned in subsection (1).

Subdivision 5—Miscellaneous

61 Register of hazardous substances and dangerous goods

(1) The site senior executive must ensure the mine has a register containing—

(a) a list of all hazardous substances, and a list of all dangerous goods, used or produced at the mine; and

(b) the current MSDS for each substance or good.

(2) The site senior executive must ensure the register is readily accessible by each worker required to use the substances or goods at the mine.

62 Resources for complying with MSDS

The site senior executive must ensure the mine has the first aid supplies and facilities and personal protective equipment recommended in the relevant MSDS for each hazardous substance and dangerous good used at the mine.

63 Records

(1) The site senior executive must ensure a record of the following is kept at the mine for each hazardous substance and dangerous good at the mine—

(a) its quantity and location on site;

(b) when it was received, or produced, on site;

(c) its use, sale or disposal;

(d) any deterioration or product failure;

(e) any leak, spill, unintended emission, misuse, theft or other loss.

(2) The site senior executive must ensure the record about the disposal of hazardous substances and dangerous goods on site—

(a) is kept at the mine until the mine's operations stop; and

(b) after operations stop, is given to the chief executive.

(3) The site senior executive must ensure a record about another matter mentioned in subsection (1) is kept at the mine until the substance or good to which the record relates has been used, disposed of, or removed from site.

Division 2—Explosives[12]

Subdivision 1—General

64 Persons who may handle or use explosives

(1) A person must not handle or use an explosive at a mine unless the person—

(a) is authorised in writing by a person who is the mine's site senior executive or underground mine manager to handle and use the explosive; or

(b) handles or uses the explosive under the direct supervision of a person mentioned in paragraph (a).

(2) A person may be authorised under subsection (1)(a) only if the person—

(a) is the holder of a current shotfirer's licence, authorising the person to handle and use explosives for the mine's operations, under the *Explosives Act 1999*; or

(b) proves the person has—

(i) the competency accepted by the council as qualifying the person to handle and use explosives; or

12 See also division 1 (Provisions applying to all hazardous substances and dangerous goods).

(ii) satisfactorily completed a competency based training program for handling and using the explosives.

(3) A copy of each authority given under subsection (1) is prescribed for section 59(1)(e)[13] of the Act as a matter that must be included in the mine record.

65 Selecting explosives

A person who has an obligation under the Act to manage risk at a mine in relation to selecting explosives for use at the mine must ensure the explosives are—

(a) stable; and

(b) fit for their intended use; and

(c) as insensitive as reasonably practicable to shock, sparks, friction and the environment in which they will be stored, transported and used; and

(d) as far as reasonably practicable, simple to store, use, transport and control.

66 Warning about explosives

(1) If explosives are used at a mine, the site senior executive must ensure—

(a) suitable signs are in place to warn of the explosives' presence; and

(b) vehicles carrying explosives at the mine are easily identified other than by signs.

Example of identification other than a sign—

A flashing light of a distinctive colour.

(2) The site senior executive must ensure the signs and other methods of identification are suitable for each person at the mine to readily identify that explosives are present or being transported.

13 Section 59 (Mine record) of the Act

67 Storing, transporting, using and disposing of explosives

(1) A mine's safety and health management system must provide for the safe storage, transport, use and disposal of explosives used at the mine.

(2) However, if the mine is not required to have a safety and health management system under the Act, the site senior executive must ensure the mine has a procedure or standard work instruction for the explosives' safe storage, transport, use and disposal.

68 Vehicles and equipment used for handling and transporting explosives

(1) The site senior executive must ensure vehicles used to handle or transport explosives at the mine are equipped, maintained and inspected to manage the risk of fire or explosion.

(2) The site senior executive must ensure equipment used to handle or transport explosives at the mine is—

(a) designed, maintained and used in a way that protects the explosives against friction, heat, incompatible materials, pressure, shock, sparks and extraneous electricity; and

(b) designed and maintained to provide adequate segregation of detonators from other explosives during handling or transport.

(3) The site senior executive must ensure that, before equipment that has been used to handle or transport explosives at the mine is repaired on site or sent off site for repair, it is—

(a) thoroughly cleaned; and

(b) inspected by a person who has the necessary competence; and

(c) certified to be free of explosive residues.

Subdivision 2—Blasting procedures

69 Identifying interaction hazards before explosives are used

(1) The site senior executive must ensure that, before explosives are used at the mine, a risk management process is carried out to identify the hazards that may arise or interact from the use.

(2) Without limiting subsection (1), the process must consider the following—

(a) ground at elevated temperature;

(b) radiation;

(c) reactive ground;

(d) lightning;

(e) extraneous electricity;

(f) sympathetic detonation;

(f) the triggering of secondary dust or gas explosions;

(h) unstable ground;

(i) unusual applications.

Example of unusual application—

Clearing an accretion in a smelter.

(3) Section 10[14] applies to the risk management process if the mine is required to have a safety and health management system under the Act.

70 Blasting procedures

(1) If blasting is carried out at a mine, the site senior executive must ensure the mine has written procedures for the blasting.

(2) The procedures must provide for the following—

(a) ensuring equipment used for charging and firing is maintained in a good operating condition;

(b) cleaning blast holes before charging;

(c) blast times;

(d) warning and guarding persons against entering an unsafe area during a blast;

(e) removing persons who may be injured by a blast to a safe place before firing takes place;

14 Section 10 (Risk management record)

(f) the ability for each person involved in firing the blast to reach a safe position, by walking at normal walking pace, before the blasting happens;

(g) firing a blast from a position that is safe from the effects of the blast;

(h) deciding when it is safe to re-enter the blasted area;

(i) examining the blasted area and blast hole remnants safely;

(j) communicating, from 1 shift to another, information about charging and blasted locations.

(3) The procedures must provide for the following additional matters, as are appropriate, having regard to the nature, size and complexity of the blasting—

(a) keeping air blast, air overpressure, dust generation, flyrock, ground vibration and noise within acceptable limits;

(b) keeping the effect on ground stability to as low as practicable;

(c) keeping blast times within worker and community expectations for blasting;

(d) finalising blast design and firing sequence;

(e) recording the results of blast monitoring at the mine, including the monitoring of ground vibration.

71 Blasting in hot material

(1) This section applies if blasting is carried out at a mine in material that is at least 55ºC or in known, or potential, reactive ground.

Example of reactive ground—

Ground containing sulphides that oxidise easily.

(2) Before the blasting is carried out, the site senior executive must ensure the mine has a written procedure or standard work instruction to ensure—

(a) heat induced initiation does not happen before firing; or

(b) each person involved in loading or firing the blast has time to reach a safe place before heat induced initiation happens.

72 Misfires

The site senior executive must ensure the mine has a written procedure or standard work instruction for the earliest practicable—

(a) detection, recording, dealing with and treatment of misfires at the mine; and

(b) warning of the misfire and presence of explosives.

73 Disposing of explosives

(1) The site senior executive must ensure the disposal of explosives on the surface of the mine complies with AS 2187.2, section 9.[15]

(2) The site senior executive must ensure explosives disposed of underground at the mine are disposed of other than by burning or burying.

(3) Before operations cease at the mine, the site senior executive must ensure all explosives at the mine are either removed from site or disposed of under subsection (1) or (2).

Subdivision 3—Storing explosives underground at underground mines

74 Underground storage

(1) The underground mine manager, or, if there is no underground mine manager, the site senior executive, must ensure explosives stored underground at the mine are stored in an underground magazine or underground temporary storage.

(2) The person must also ensure the following—

(a) the quantity of explosives stored is as low as reasonably practicable for the operations in which they are to be used;

(b) blasting agents and detonator sensitive explosives are stored in areas segregated from each other;

(c) detonators are segregated from other explosives;

(d) only things associated with storing the explosives are stored in the underground storage.

15 AS 2187, part 2, section 9 (Disposal of surplus and defective explosives)

(3) This section does not apply to explosives stored in an adit, drive or similar underground excavation that is separate from, or not integrated with or connected to, an underground mining operation in which explosives are used.

75 Underground storage location

The underground mine manager, or, if there is no underground mine manager, the site senior executive, must ensure an underground magazine at the mine is located away from the following at the mine—

(a) major access routes;

(b) emergency escape routes or emergency refuges;

(c) high occupancy areas;

(d) other hazardous substances;

(e) major service facilities;

(f) known micro-seismic areas.

76 Underground magazine design

The underground mine manager, or, if there is no underground mine manager, the site senior executive, must ensure each underground magazine at the mine is designed and maintained to ensure the following—

(a) explosives stored in the magazine are—

(i) protected against accidental impact; and

(ii) adequately ventilated to keep them cool and dry; and

(iii) secured against theft;

(b) detonators in the magazine are adequately segregated from other explosives;

(c) atmospheric contaminants in the magazine do not exceed the general exposure limits for the contaminants;

(d) explosive handling equipment can be manoeuvred safely in the magazine.

77 Underground temporary storage

(1) The underground mine manager, or, if there is no underground mine manager, the site senior executive, must ensure an underground temporary storage area at the mine is located near where the explosives are to be used.

(2) The person must also ensure the underground temporary storage area is maintained and operated to ensure the following—

(a) explosives in the storage area—

(i) do not exceed the quantity needed for the operations in which they are to be used; and

(ii) are protected against accidental impact;

(b) detonators in the storage area are—

(i) stored in a locked containers; and

(ii) adequately segregated from other explosives;

(c) containers in which explosives are stored are—

(i) constructed to protect the explosives against impact, squeezing and theft; and

(ii) cleaned of residual explosives before being reused;

(d) explosives are removed from the storage area and the storage area closed when the blasting operations for which the explosives were stored cease.

78 Record of underground storages

The underground mine manager, or, if there is no underground mine manager, the site senior executive, must ensure an up-to-date record of the number and location of underground magazines and underground temporary storages is—

(a) kept at the mine; and

(b) made available to an inspector at the inspector’s request.

Subdivision 4—Miscellaneous

79 Theft or other loss of explosives

(1) The site senior executive must ensure the mine has a system or written procedure for—

(a) detecting theft or other loss of an explosive during any part of its life cycle; and

(b) reporting the theft or loss under section 195[16] of the Act.

(2) The site senior executive must ensure the system or procedure provides for recording the following information about the theft or loss—

(a) the type of explosive stolen or lost;

(b) the date and time of the theft or loss;

(c) any identifying characteristic of the explosive.

PART 8—MINE PLANS

80 Survey grid system

The site senior executive must ensure—

(a) a datum station is established near the mine for mine surveys and referenced to GDA and AHD; and

(b) if a local grid system is used for the surveys, the relationship between the grid system and GDA is established and shown on the survey plans.

16 Section 195 (Notice of accidents, incidents or diseases) of the Act

81 Protecting survey data against loss, damage or unauthorised access

The site senior executive must ensure the mine's current survey data is kept in a secure way to protect it against loss, damage or unauthorised access.

82 Plans of mine workings

(1) The site senior executive must ensure survey plans of the mine workings include the following matters if they may affect the safety and health of a person in the workings—

(a) the location of natural and artificial features;

(b) surface drill holes.

(2) The site senior executive must also ensure the plans are sufficient to correlate separate sets of workings at the mine, including abandoned workings, to allow the safe management of interfacing between the workings.

83 Plans of operations undertaken at abandoned mine

(1) This section applies to a person who is required, under section 58(3)[17] of the Act, to give the chief inspector plans showing the extent of operations at an abandoned mine.

(2) The person must ensure the plans are in the format and of the quality required by the chief inspector.

Example of 'quality' for subsection (2)—

The quality of paper or ink used for the plans.

17 Section 58 (Plans of mine workings) of the Act

PART 9—PERSONS ON SITE

Division 1—Fitness

84 Alcohol and drugs

(1) A person must not carry out operations at a mine, or enter an operating part of a mine, if the person is under the influence of alcohol, or is impaired by a drug, to the extent the alcohol or drug impairs, or could impair, the person's ability to safely carry out the person's duties at the mine.

(2) A person must not consume alcohol at a mine other than in—

(a) an accommodation facility; or

(b) a recreation area designated, in writing, by the site senior executive for the purpose under a written procedure for designating the area.

85 Fitness of workers

The site senior executive must ensure a worker at the mine does not carry out work at the mine unless the worker's fitness level has been decided under section 87 as adequate for the work.

86 Worker's self-assessment of fitness level

Each worker at the mine must periodically conduct a self-assessment of the worker's condition, including, for example, for effects of heat strain or fatigue, to decide if the worker is in a fit condition to carry out the worker's duties at the mine without creating an unacceptable level of risk.

87 Assessing workers to decide fitness level

(1) The site senior executive must ensure—

(a) each worker at the mine is assessed to decide if the worker's fitness level is adequate to enable the worker to carry out work at the mine without creating an unacceptable level of risk; and

(b) a record of the assessment (a **"fitness assessment record"**) is kept.

(2) The assessment must be carried out in an appropriate way, including, for example, by a medical examination, having regard to the nature of the work.

(3) The assessment must be carried out—

(a) before the worker first commences work at the mine; and

(b) whenever the worker's duties change; and

(c) periodically, as necessary, to assess—

(i) changes in the worker's fitness for the work; or

(ii) the adequacy of the worker's fitness level for the work.

(4) If the site senior executive considers the assessment needs to be carried out by a medical examination, the site senior executive must—

(a) arrange for the assessment to be done by, or under, the supervision of an appropriate doctor; and

(b) ask the appropriate doctor to give—

(i) the site senior executive a fitness assessment report; and

(ii) the worker a copy and explanation of the report.

(5) The worker's employer must pay for the fitness assessment and fitness assessment report.

Maximum penalty for subsection (5)—30 penalty units.

(6) Subsection (5) is not a safety and health obligation for the Act.

88 Fitness of visitors

(1) The site senior executive must ensure a visitor does not enter an operating area at the mine unless, having regard to conditions prevailing in the area, the visitor's fitness level is adequate to visit the area.

(2) The site senior executive must ensure—

(a) the visitor's fitness level is assessed in an appropriate way, including, for example, by a questionnaire, to decide if the visitor's fitness level is adequate to visit the area; and

(b) a record of the assessment (also a **"fitness assessment record"**), including, for example, a copy of the questionnaire, is kept.

89 Work hours and rest breaks

A mine's safety and health management system must provide for controlling risk at the mine arising out of personal fatigue caused by excessive work hours or insufficient rest periods.

90 Amenities for workers' fitness and health

(1) The site senior executive must ensure the mine has appropriate amenities for use by workers to maintain their fitness and health.

(2) Without limiting subsection (1), the amenities must include the following, as appropriate, having regard to the nature of the mine's operations—

(a) food storage and consumption facilities;

(b) supplies of cool drinking water;

(c) washing and bathing facilities;

(d) toilet facilities;

(e) refuse disposal.

(3) Also, if a worker remains on site between shifts, the amenities must include the following—

(a) facilities for rest, sleep and recreation;

(b) food;

(c) provision for washing clothes;

(d) an appropriate and effective communication system.

(4) The site senior executive must also ensure the amenities are—

(a) within a reasonable distance of each workplace at the mine; and

(b) kept in a hygienic condition.

Division 2—Training and assessment

91 Induction training and assessment

The site senior executive must ensure each worker at the mine is given appropriate induction training and periodically assessed to ensure the worker has adequate knowledge of the following, having regard to the work to be carried out, or carried out, by the worker at the mine—

(a) the nature and layout of the mine's operations;

(b) the mine's organisational structure and communication procedures;

(c) the mine's site procedures and practices;

(d) the risk management process mentioned in part 2, division 2;

(e) emergency procedures and basic first aid;

(f) the Act and this regulation.

92 Persons who have not completed induction training

The site senior executive must ensure a person who has not completed induction training under section 91 is—

(a) supervised by a worker who has completed the induction training when the person is in a workplace at the mine; and

(b) given sufficient information on, and instruction in, the following matters to enable the person to respond appropriately in an emergency situation—

(i) the mine's work practices and emergency procedures;

(ii) the use of protective and emergency equipment; and

(c) made aware of the person's safety and health obligations under section 36 of the Act.

93 Training

(1) The site senior executive must ensure each worker at the mine is trained, if necessary, and periodically assessed, to ensure the worker has adequate—

(a) knowledge and understanding of the processes to be carried out, and the materials and plant to be used, for the worker's duties at the mine; and

(b) skill to carry out the processes, handle the materials and operate the plant; and

(c) ability to access and understand the procedures and standard work instructions for the worker's duties.

(2) The training must be carried out in an appropriate way, including, for example, by formal training courses or informal on-the-job instruction.

(3) The assessment must be carried out in an appropriate way, including, for example, by examination, test or proof of relevant prior learning.

(4) The site senior executive must ensure a person being trained or assessed does not carry out work at the mine unless the person is adequately supervised to prevent creating an unacceptable level of risk.

(5) Subsection (4) does not apply to work carried out by the person in an emergency.

94 Record of training

The site senior executive must ensure a record is kept of the training given to, and assessment of, each worker under this division.

Division 3—Carrying out tasks

95 Time and resources for carrying out tasks

(1) The site senior executive must ensure time is allocated, and the mine's resources are distributed, to enable each worker at the mine to carry out the worker's tasks without creating an unacceptable level of risk.

(2) Without limiting subsection (1), the site senior executive must ensure the worker is given the supervision, and assistance from other competent persons, necessary to achieve an acceptable level of risk.

Example of assistance—

If the worker is working alone in a bin, or on a busy roadway, the worker may be given assistance by another worker keeping a watch to ensure the level of risk is acceptable.

(3) In this section—

"resources" includes the following—

(a) access and transport;

(b) communication methods;

(c) facilities, materials and plant;

Examples for paragraph (c)—

Consumable items, spare parts and personal protective equipment.

(d) leadership, guidance and training;

(e) procedures, including procedures for coordinating activities, and standard work instructions and other relevant information.

96 Supervising workers

(1) Without limiting section 95(2), the site senior executive must ensure the mine's activities and workers are supervised to the extent necessary to ensure each worker—

(a) is not likely to be exposed to conditions beyond the worker's capabilities; and

(b) is not likely to be affected by the conditions in which the worker is working in a way that adversely affects the worker's fitness to perform critical tasks; and

(c) has the resources necessary to carry out the worker's tasks without being exposed to an unacceptable level of risk; and

(d) is working within the limits of the worker's fitness and competence; and

(e) complies with the worker's safety and health obligations.

(2) The supervision must include communication, including direct contact, at appropriate intervals by the worker's supervisor.

97 Communicating with workers working alone underground

(1) This section applies to a worker who is working alone underground at a mine and is not in frequent communication with, or within easy hearing of, another person at the mine.

(2) The site senior executive must ensure the worker is communicated with at intervals of not more than 2 hours.

(3) This section does not apply at a mine where only 1 person works.

98 Checking work quality

(1) This section applies to work carried out at a mine and for which checking the quality of output from the work is necessary for managing risk at the mine.

(2) The site senior executive must ensure the output is checked by a person other than the person who carried out the work, to confirm the output is suitable for use.

Example of checking the output of work—

X-raying a weld in a pressure vessel or checking design calculations.

Division 4—Miscellaneous

99 Entering a workplace

Each supervisor for a workplace at a mine must ensure a person does not enter the workplace unless the supervisor reasonably believes the person is capable, having regard to the conditions prevailing in the workplace and the person's level of supervision, to respond appropriately to—

(a) the normal activities in the workplace; and

(b) any incident or emergency likely to occur.

PART 10—PLANT GENERALLY[18]

Division 1—Selection and design

100 Selection and design

(1) A person who has an obligation under the Act to manage risk at a mine in relation to the selection and design of plant must ensure—

(a) the plant—

(i) is fit for its intended use and use in its intended work environment, including, for example, a hazardous area; and

(ii) is ergonomically compatible with persons operating or maintaining it; and

(iii) has appropriate provision for safe access, egress and maintenance; and

(b) if it is necessary for managing risk from the plant and it is reasonably practicable, the plant—

(i) fails to safety; and

(ii) does not fail catastrophically or by common mode or cascade failure; and

(iii) incorporates appropriate engineering controls to protect the plant operator and other persons; and

Example of 'engineering controls'—

Guards on moving parts, rollover protection, falling object protection, noise insulation or seatbelts.

(iv) incorporates appropriate backup systems to ensure plant remains under control if its primary system fails; and

Example of 'backup system'—

A vehicle's parking brake to backup its service brake.

(v) is designed so its condition and performance can be monitored and incipient failures detected.

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18 See also parts 4 (Electrical) for provisions about electrical equipment and 13 (Winding operations) for provisions about winding equipment.

(2) In this section—

"hazardous area" means an area in which an explosive atmosphere is present, or is likely to be present, in quantities requiring special precautions for the construction, installation and use of potential ignition sources.

Examples of 'potential ignition sources'—

Electrical equipment, naked flames, sparks from grinding and welding operations, and hot surfaces.

"reliability", for plant, means its ability to perform its intended functions under specified conditions for a specified period.

101 Instrumentation and warning devices

A person who has an obligation under the Act to manage risk at a mine in relation to the selection and design of plant must ensure the plant that is likely to cause a hazard has adequate—

(a) instrumentation to enable monitoring of the plant's operation and condition; and

(b) warning devices to warn persons near the plant of its start-up, operation or failure.

102 Plant controls and control systems

(1) A person who has an obligation under the Act to manage risk at a mine in relation to plant controls and control systems must, as far as reasonably practicable, ensure—

(a) the controls—

(i) have a standard method of operation or are marked or labelled to state their method of operation; and

(ii) are easily identifiable, including, for example, by a label, as the controls for the plant, or part of plant, they control; and

(b) the control systems provide for—

(i) effective communication between persons involved in the plant's operation or maintenance; and

(ii) shutting the plant down or otherwise bringing it to a safe state in an emergency.

(2) The person must also ensure—

(a) a remote control system is capable of being disabled at the plant; and

(b) an automatic control system is capable of being disabled at the plant and overridden manually.

(3) If, having regard to the nature and level of risk from plant used at the mine, it is necessary for managing the risk, the person must also ensure—

(a) a remote control system for the plant shuts it down safely if communication with the system is lost; and

(b) an automatic control system for the plant shuts it down safely if the control system fails; and

(c) the control systems shut the plant down or otherwise bring it to a safe state if—

(i) the plant operates outside its design parameters; or

(ii) an engineering control for the plant fails.

103 Isolation facility

(1) If, having regard to the nature and level of risk from plant used at a mine, it is necessary for managing the risk, the site senior executive must ensure the plant has a facility for—

(a) preventing its operation; or

(b) preventing or controlling the release of its stored energy; or

(c) isolating its energy supply.

(2) The site senior executive must ensure the facility is capable of being locked-out and tagged or otherwise secured.

Division 2—Other provisions about plant

104 Manufacture, construction, storage, transport and installation

(1) The operator or site senior executive must ensure plant used, or intended for use, at the mine is manufactured, constructed, stored,

transported and installed in accordance with any applicable specifications and instructions.

(2) For fixed plant, the operator or site senior executive must also ensure—

(a) the plant is installed in a location and environment that is compatible with the plant and its use; and

(b) the mine layout incorporates appropriate facilities and adequate space for—

(i) access and egress to the plant during emergencies; and

(ii) the plant's operation, monitoring, servicing and maintenance.

105 Commissioning

(1) The operator or site senior executive must ensure plant is commissioned in its operating environment at the mine before it is used to ensure the following—

(a) its integration into the operating environment and associated systems;

(b) it performs to within its specifications, if any, held at the mine under section 112;

(c) hazard controls for the plant are adequate and operating within the specifications mentioned in paragraph (b);

(d) mine workers who are required to operate the plant are competent to operate it safely.

(2) The operator or site senior executive must ensure—

(a) the commissioning is carried out in accordance with the manufacturer's instructions; and

(b) adequate precautions are taken to protect the safety and health of persons if—

(i) the plant fails during commissioning; or

(ii) it is necessary to commission the plant without all hazard controls for the plant operating effectively.

106 Operating plant

A person who has an obligation under the Act to manage risk at a mine in relation to the operation of plant must ensure the plant is not operated—

(a) in a way that creates an unacceptable level of risk; or

(b) if inspections, tests or monitoring show the plant is unfit for use; or

(c) if the plant is locked-out and tagged.

107 Isolating, locking-out and tagging plant

(1) A mine's safety and health management system must provide for the following—

(a) isolating plant, including effectively isolating plant to control the risk from a release of energy;

(b) taking plant out of service;

(c) testing plant or its energy source for zero potential;

(d) returning plant to service.

(2) The site senior executive for a mine that is not required to have a safety and health management system must ensure the mine has a standard work instruction for the activities mentioned in subsection (1)(a) to (d).

(3) If the safety or health of a person is directly affected by the operation or non-operation of plant, the system or standard work instruction must also provide for locking-out and tagging the plant.

108 Monitoring

(1) A person who has an obligation under the Act to manage risk at a mine in relation to monitoring plant must monitor the plant's use, condition and performance to—

(a) detect any deterioration causing an unacceptable level of risk; and

(b) decide if the plant is likely to operate without causing an unacceptable level of risk until it is next monitored; and

(c) provide information for preventive maintenance.

(2) The person must ensure the monitoring is carried out—

(a) during the plant's use at scheduled intervals or continuously, or after scheduled periods of use; and

(b) otherwise as necessary.

109 Service and maintenance

(1) The operator or site senior executive must ensure plant in use at the mine is serviced and maintained so it—

(a) is capable of performing its intended functions; and

(b) is within the condition and performance limits of its specifications.

(2) If a breakdown of the plant is likely to cause an unacceptable level of risk, the operator or site senior executive must ensure the servicing and maintenance is based on a preventive strategy.

(3) If the plant can not be serviced and maintained under subsection (1), the operator or site senior executive must ensure it is taken out of service.

110 Repair and modification

If plant at a mine is repaired or modified in a way that could affect the plant's fitness for use for its intended purpose, the site senior executive must ensure sections 100 to 105 are complied with.

111 Dismantling and demolition

The site senior executive must ensure—

(a) as far as reasonably practicable, sources of energy and hazardous substances are removed from plant before it is dismantled or demolished; and

(b) the dismantling or demolition is carried out in accordance with any relevant instructions for the plant's safe dismantling or demolition.

Division 3—Information and records

112 Specifications, instructions and other information about plant

(1) If, having regard to the nature and level of risk from plant used at a mine, it is necessary for managing the risk, the site senior executive must ensure—

(a) the mine has written specifications for the plant and instructions for its use; and

(b) a copy of the specifications is available to, and readily accessible by, each worker required to use the plant at the mine; and

(c) a copy of the instructions is available to, and readily accessible by, each worker required carry out the activity to which the instructions relate at the mine.

(2) The specifications must include the following, as appropriate, having regard to the nature and level of risk from the plant—

(a) the plant's intended use and environment;

(b) its design envelope, including limits for its normal and abnormal use and life;

(c) its condition and performance limits;

(d) hazards associated with the plant and its materials;

(e) its failure modes;

(f) its safeguards and protective systems;

(g) design drawings and calculations, and specifications for its materials and parts;

(h) the knowledge and competency requirements for persons installing, commissioning, operating, monitoring, servicing, maintaining and disposing of the plant.

(3) The instructions for using the plant must deal with the following for the plant, as appropriate, having regard to the nature and level of risk from the plant—

(a) transport, storage and installation;

(b) commissioning;

(c) operation;

(d) monitoring;

(e) servicing and maintenance;

(f) dismantling and demolition.

(4) Also, if, having regard to the nature and level of risk from the plant, it is necessary for managing the risk, the site senior executive must ensure hazard warnings, operating limitations, instructions for use and other critical information are marked on the plant or displayed near it.

113 Records

(1) If, having regard to the nature and level of risk from plant used at a mine, it is necessary for managing the risk, the site senior executive must ensure a record is kept at the mine about—

(a) the plant's—

(i) manufacture, construction, storage, transport, and installation; and

(ii) commissioning; and

(iii) use; and

(iv) servicing and maintenance; and

(v) repair and modification; and

(vi) inspection, testing and monitoring, and any action taken as a result of the inspection, testing and monitoring; and

(b) incidents, damage and operation happening outside the plant's design envelope.

(2) For ropes used in winding operations in which a winder of at least 30 kW capacity is used, the site senior executive must ensure a record is kept of the matters stated in subsection (1) regardless of the nature and level of risk from the ropes.

(3) The site senior executive must ensure the records are—

(a) kept for the life of the plant or until its earlier permanent decommissioning or disposal; and

(b) available to, and readily accessible by, each worker using the plant at the mine.

PART 11—PROCEDURES AND STANDARD WORK INSTRUCTIONS

114 Procedures and standard work instructions for particular operations

(1) This section applies to operations at a mine if, having regard to the nature and level of risk from the operations, it is necessary for managing the risk for the operations to be—

(a) uniform and consistent in their performance or results; or

(b) compatible with other operations at the mine.

(2) The site senior executive must ensure the mine has a written procedure or standard work instruction for carrying out the operations.

115 Accessing current procedures and standard work instructions

The site senior executive must ensure—

(a) the issue and availability of the mine's written procedures and standard work instructions are controlled to ensure only current versions are in use; and

(b) each worker at the mine is aware of the current written procedures and standard work instructions for the part of the mine's operations in which the worker works; and

(c) copies of the current procedures and instructions are available to each worker to whom they apply.

116 Written procedures

The site senior executive must ensure each written procedure for an activity carried out at the mine includes the following—

(a) the procedure's purpose;

(b) the activity to which it applies;

(c) the responsibilities of persons involved in the activity;

(d) a description of how the activity must be carried out;

(e) a reference to relevant standard work instructions and other relevant written procedures;

(f) an appropriate identification, including the procedure's version number and date of issue.

117 Standard work instructions

(1) The site senior executive must ensure each standard work instruction for a task at the mine is—

(a) in a form suitable for use at the site where the task is carried out; and

(b) easily understandable by persons carrying out the task; and

(c) as brief and concise as is reasonable.

(2) The site senior executive must ensure the standard work instruction includes the following—

(a) the purpose of the task;

(b) a description of how the task must be carried out;

(c) a reference to relevant written procedures and other relevant standard work instructions;

(d) an appropriate identification, including the instruction's version number and date of issue.

PART 12—RECORDS GENERALLY

118 Way records must be kept

The site senior executive must ensure records required to be kept at the mine under the Act are kept in an appropriate way, having regard to the nature and extent of the mine's operations.

119 Period for which particular records must be kept

(1) The site senior executive must ensure the following records about a worker are kept at least until the worker ceases to be employed, or carry out work, at the mine[19]—

(a) each health assessment record and health assessment report;

(b) each fitness assessment record and fitness assessment report;

(c) each personal exposure limit set under section 133.[20]

(2) The site senior executive must ensure the following records about a visitor are kept at least until the visitor leaves the mine—

(a) each health assessment record;

(b) each fitness assessment record.

120 Confidentiality of worker's medical record

(1) A site senior executive may only obtain a worker's medical record with the worker's written consent.

Maximum penalty—30 penalty units.

(2) A site senior executive must not disclose to anyone (other than the worker or someone with the worker's written consent) the contents of the worker's medical record.

Example of someone with the worker's written consent—

The worker's representative at the workplace.

Maximum penalty—30 penalty units.

(3) Subsections (1) and (2) are not safety and health obligations for the Act.

19 For keeping a health surveillance report, see section 138 (Health surveillance).

20 Section 133 (Exposure limits for workers)

PART 13—WINDING OPERATIONS

Division 1—Preliminary

121 Application of pt 13

This part applies only to winding operations in which a winder of at least 30 kW capacity is used.

Division 2—Controlling winding operations

122 Appointment of persons to control winding operations

The site senior executive must appoint, in writing, 1 or more persons to control winding operations at the mine.

123 Acknowledgment of appointment

(1) A person appointed to control winding operations at a mine must acknowledge the appointment by written notice given to the site senior executive.

(2) The notice is prescribed for section 59(1)(e)[21] of the Act as a matter that must be included in the mine record.

Division 3—Safety provisions for winding equipment

124 Control measures to protect against persons and things falling into shafts

The site senior executive must ensure control measures are in place at the mine to—

(a) prevent persons, rock, material and other things from falling down a shaft, winze or raise used in winding operations at the mine; and

21 Section 59 (Mine record) of the Act

(b) protect, as far as reasonably practicable, persons in the shaft, winze or raise against falling rock, material and other things.

125 Conveyances

The site senior executive must ensure a conveyance used in winding operations at the mine—

(a) is not unintentionally obstructed in its passage in the shaft during the operations; and

(b) is prevented from colliding with other things in the shaft during the operations; and

(c) has ways of preventing persons, rock, material and other things from unintentionally protruding from, or moving in, the conveyance.

126 Winders

(1) The site senior executive must ensure a winder used at the mine has ways of—

(a) preventing overwind, overspeed and uncontrolled movement of a conveyance; and

(b) stopping the winder if—

(i) for a drum winder—slack rope happens; or

(ii) for a friction winder—excessive rope slip happens.

(2) The site senior executive must ensure the winder has a backup system for preventing overwind and overspeed of a conveyance.

(3) The site senior executive must ensure a winder operating automatically is capable of being stopped from each of the following places—

(a) in the conveyance;

(b) at the brace level;

(c) at each plat;

(d) at each skip loading pocket and skip dump;

(e) at each place where ropes are changed.

127 Other safety provisions for winding equipment

(1) The site senior executive must ensure winding equipment used at the mine includes—

(a) as far as reasonably practicable, arrestors or other devices to mitigate the effects of an overwind; and

(b) ways for persons to escape from a stalled conveyance.

(2) The site senior executive must also ensure each rope used for winding—

(a) has an appropriate safety factor, having regard to the operation for which the rope is used; and

(b) is regularly tested to ensure its safe performance.

Division 4—Miscellaneous

128 Monitoring and maintaining winding equipment

The site senior executive must ensure the mine has written procedures for monitoring and maintaining winding equipment in use at the mine.

129 Testing winding equipment after particular events

(1) This section applies if a following event happens at a mine—

(a) winding equipment is repaired to an extent that may affect the equipment's safe operation;

(b) a rope used in winding operations is recapped;

(c) the winder is stopped for more than 8 consecutive hours;

(d) a seismic event that may affect the safety of winding operations.

(2) The site senior executive must ensure a person is not carried in a conveyance, other than a stage, in the winding operations until—

(a) the conveyance has made 1 trip up and down the shaft through its normal working range at full operating speed; and

(b) the winding equipment has been found to operate safely.

130 Signalling and communication

(1) The site senior executive must ensure the mine has a system for effective communication between persons involved in operating, monitoring or using winding equipment at the mine.

(2) If the communication system involves the use of a signals code, the site senior executive must ensure—

(a) each person involved in winding operations at the mine is familiar with the code; and

(b) a copy of the code is displayed—

(i) in view of the winder driver; and

(ii) at each entrance to the shaft.

PART 14—WORK ENVIRONMENT

Division 1—Managing risk from exposure to hazards generally

Subdivision 1—Health assessments

131 Health assessment of workers

(1) This section applies if a hazard with potential to cause a significant adverse effect on the safety or health of a person is identified at a mine.

(2) The site senior executive must ensure—

(a) the physical and medical condition of each worker at the mine is assessed to check, as far as reasonably practicable, for any condition that may impair the worker's ability to tolerate the hazard without harming the worker or the worker's future offspring; and

(b) a record of the assessment (a **"health assessment record"**) is kept.

(3) The assessment must be carried out in an appropriate way, including, for example, by a medical examination, having regard to the nature of the hazard.

(4) The assessment must be carried out—

(a) before the worker is exposed to the hazard at the mine; and

(b) periodically, as necessary, to assess changes in the worker's ability to tolerate the hazard.

(5) If the site senior executive considers the assessment needs to be carried out by a medical examination, the site senior executive must—

(a) arrange for the assessment to be done by, or under, the supervision of an appropriate doctor; and

(b) ask the appropriate doctor to give—

(i) the site senior executive a health assessment report; and

(ii) the worker a copy and explanation of the health assessment report.

(6) The worker's employer must pay for the worker's assessment and the health assessment reports.

Maximum penalty for subsection (6)—30 penalty units.

(7) Subsection (6) is not a safety and health obligation for the Act.

132 Health assessment of visitors

The site senior executive must ensure—

(a) the physical and medical condition of each visitor to the mine is assessed in an appropriate way, including, for example, by a questionnaire, to decide if the visitor has any condition that may impair the visitor's ability to tolerate a hazard to which the visitor may be exposed at the mine; and

(b) a record of the assessment (also a **"health assessment record"**), including, for example, a copy of the questionnaire, is kept.

Subdivision 2—Limiting exposure to hazards

133 Exposure limits for workers

(1) This section applies if an assessment of a worker's health under section 131 shows the worker has an unacceptable level of risk from a hazard at a lower level of exposure than the general exposure limit for the hazard, including, for example, because a personal factor of the worker impairs the worker's ability to tolerate the hazard.

Example of 'personal factor'—

Fitness, diet, pregnancy, physical disability, allergy or phobia.

(2) The site senior executive must ensure a personal exposure limit is set for the worker for the hazard to reduce the risk to an acceptable level.

134 Adjusting exposure limits for hazards for workers

(1) This section applies if a hazard is present in a mine's work environment and at least 1 of the following apply to a worker at the mine—

(a) the worker's work cycle does not conform to the standard work cycle used in establishing the general exposure limit for the hazard;

(b) the worker's work cycle decreases the rate at which the worker recovers from adverse effects of the hazard;

(c) the effects of a hazard on the worker may increase if the worker does heavy strenuous work, or works under adverse climatic conditions.

(2) The site senior executive must ensure the exposure limit applying to the worker for the hazard is adjusted to account for the circumstances mentioned in subsection (1).

(3) If the national standard for the hazard or NOHSC's guidance note states a way of adjusting the general exposure limit for the hazard in the circumstances, the site senior executive must ensure the exposure limit applying to the worker for the hazard is adjusted in the stated way.

(4) If the work environment at a mine contains hazards that interact with each other to increase their adverse effects on a worker, the site senior executive must ensure the exposure limits that apply to the worker for the hazards are adjusted to account for the interaction.

(5) In this section—

"NOHSC's guidance note" means NOHSC's document entitled 'Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008]'.

"standard work cycle", generally, means a work cycle consisting of the following—

(a) a shift of not longer than 8 hours a day;

(b) not more than 5 shifts a week;

(c) at least 16 hours between consecutive shifts.

135 Limiting workers' exposure

(1) The site senior executive must ensure a worker's exposure to a hazard at the mine—

(a) does not exceed the exposure limit applying to the worker for the hazard; and

(b) is as low as reasonably achievable.

(2) This section does not apply to the worker's exposure to the hazard during an emergency evacuation.

136 Monitoring workers' exposure

(1) This section applies to a hazard at a mine—

(a) that has the potential to exceed the exposure limit applying to a worker for the hazard; or

(b) for which the level of risk may vary.

(2) The site senior executive must ensure the worker's exposure to the hazard is monitored, and the monitoring results are analysed, regularly.

(3) If a relevant Australian standard or national standard states a way of carrying out the monitoring or analysis, the site senior executive must ensure it is done in the stated way.

Examples of 'relevant Australian or national standard' for subsection (3)—

1. For inspirable dust—AS 3640 'Workplace atmospheres—Method for sampling and gravimetric determination of inspirable dust'.

2. For lead—NOHSC's document entitled 'National Standard for the Control of Inorganic Lead at Work [NOHSC:1012]'.

3. For respirable dust—AS 2985 'Workplace atmospheres—Method for sampling and gravimetric determination of respirable dust'.

137 Tampering with monitoring samples and results

A person must not tamper, or allow another person to tamper, with a sample or the results of a sample taken to monitor a worker's exposure to a hazard at a mine.

138 Health surveillance

(1) The site senior executive must arrange for health surveillance of a worker at the mine if the site senior executive reasonably believes, or ought to reasonably believe—

(a) exposure to a hazard at the mine may cause, or result in, an adverse health effect; and

(b) the health effect may happen under the worker's work conditions; and

(c) either—

(i) a valid technique capable of detecting signs of the health effect exists; or

(ii) a valid biological monitoring procedure is available to detect changes from the current accepted values for the hazard.

Examples of 'changes from current accepted values'—

1. A higher than normal blood level of lead caused by exposure to substances containing lead.

2. A raised urinary mercury level caused by exposure to mercury vapour.

(2) The site senior executive must—

(a) arrange for the health surveillance to be done by, or under, the instruction of an appropriate doctor; and

(b) ask the appropriate doctor to give—

(i) the site senior executive a health surveillance report; and

(ii) the worker a copy and explanation of the health surveillance report.

(3) The worker's employer must pay for the worker's health surveillance and the health surveillance reports.

Maximum penalty for subsection (3)—30 penalty units.

(4) The site senior executive must ensure the health surveillance report is kept for the following period—

(a) for a hazard with a cumulative or delayed effect—30 years;

Example for paragraph (a)—

Silica, noise or vibration.

(b) for another hazard—7 years.

(5) If the mine ceases operations in the period the health surveillance report is required to be kept under subsection (4), the site senior executive must ask for, and comply with, the chief executive's directions about the report's storage.

(6) Subsection (3) is not a safety and health obligation for the Act.

(7) In this section—

"health surveillance report" means information, other than a medical record, about—

(a) the effects on the worker's health related to the worker's exposure to a hazard at the mine; and

(b) the need, if any, for remedial action.

139 Removing affected worker from work environment

(1) Subsection (2) applies if a worker has effects from a hazard, other than lead, at a mine exceeding the exposure limit applying to the worker for the hazard.

(2) The site senior executive must ensure the worker is removed from, and does not resume, work involving exposure to a level of the hazard that would increase the effects or prevent the effects decreasing.

(3) The site senior executive must ensure a worker—

(a) is removed from a lead-risk job if the worker has a blood lead level at or above the worker's removal level; and

(b) does not resume a lead-risk job until the worker's blood lead level is less than the level stated for the worker in the inorganic lead standard, section 15(27).[22]

(4) In this section—

"inorganic lead standard" means NOHSC's document entitled 'National Standard for the Control of Inorganic Lead at Work [NOHSC:1012]'.

"lead-risk job", for a worker, means work in which the blood lead level of the worker might reasonably be expected to rise, or does rise, above 1.45 µmo/L (30 µg/dL) or the worker's removal level, whichever is the lower.

"removal level", for a worker, means the removal level stated for the worker in the inorganic lead standard, section 15(24).[23]

140 Using personal protective equipment

(1) This section applies if a person's exposure to a hazard at a mine can not be prevented or reduced other than by using personal protective equipment.

(2) The site senior executive must ensure—

(a) the person is given suitable and effective personal protective equipment; and

(b) the person is competent in using the equipment; and

(c) the person's work load and work cycles are reduced to allow for the increased physical load of the equipment.

(3) A person who is given personal protective equipment under subsection (2) must use the equipment when the person's level of risk from the hazard is unacceptable.

22 'National Standard for the Control of Inorganic Lead at Work', section 15(27) (Return after Medical Removal)

23 'National Standard for the Control of Inorganic Lead at Work', section 15(24) (Medical Removal)

Division 2—Managing risk from exposure to particular hazards

141 Asbestos material installed in buildings and plant

(1) This section applies if a building or plant at a mine has asbestos material installed in it.

(2) The site senior executive must ensure a standard work instruction or procedure is established—

(a) to prevent the exposure of persons to the asbestos material; or

(b) if the exposure can not be prevented, to minimise the exposure.

(3) The standard work instruction or procedure must include—

(a) the steps that must be taken to restrict access to, and prevent disturbance of, the asbestos material; and

(b) work practices in the vicinity of the asbestos material; and

(c) requirements for assessment of the asbestos material at regular intervals of at least 1 year and earlier if the nature or location of work in the vicinity of the asbestos material changes.

(4) If the asbestos material—

(a) is friable, poorly bonded or unstable, for example, because of damage or deterioration, the site senior executive must ensure the asbestos material is enclosed, sealed or removed; or

(b) is to be removed, the site senior executive must ensure an asbestos removalist removes the asbestos material under NOHSC's document entitled 'Code of Practice for the Safe Removal of Asbestos [NOHSC:2002]'.

142 Asbestos, other than asbestos material installed in buildings and plant

(1) This section applies to asbestos occurring naturally at a mine.

(2) The site senior executive must ensure—

(a) action is taken to prevent the exposure of persons to the asbestos; or

(b) if the exposure can not be prevented, action is taken to protect the health of persons at the mine from the effect of the asbestos.

(3) The site senior executive must ensure monitoring or assessment of airborne asbestos is carried out under NOHSC's document entitled 'Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust [NOHSC:3003]'.

143 Heat

(1) The site senior executive must ensure the mine has a system for managing the risk to persons from heat in places at the mine where the wet bulb temperature exceeds 27ºC.

(2) The system must provide for setting maximum wet and dry bulb temperature limits for the persons' exposure having regard to subsection (3) and any criteria stated in a guideline for managing heat.

(3) The site senior executive must ensure a person is not exposed to a wet bulb temperature exceeding 34ºC at the mine unless the person is—

(a) engaged in work to reduce the temperature and authorised by the person's employer or supervisor to carry out the work; or

(b) a mines rescue member carrying out training or emergency response under procedures documented in the system; or

(c) being evacuated in an emergency.

144 Oxygen

(1) The site senior executive must ensure a person is not exposed to—

(a) an atmosphere in a confined space on the surface of the mine that has—

(i) an oxygen content of less than 19.5% by volume; or

(ii) an oxygen content of more than 23.5% by volume; or

(b) an atmosphere in any other part of the mine that has an oxygen content of less than 18% by volume.

(2) In this section—

"confined space" means a confined space as defined in AS 2865 'Joint National Standard for Safe Working in a Confined Space'.

145 Radiation

(1) This section applies if a person in a mine's work or local environment is likely to be exposed, above acceptable limits, to radiation from a naturally occurring radioactive substance at the mine.

(2) The site senior executive must ensure—

(a) the mine has a system to provide for the safe management of the radiation; and

(b) the system is complied with.

PART 15—MISCELLANEOUS

146 Access to Act and regulation

The site senior executive must ensure a copy of the Act and this regulation is kept at the mine in a location that is easily accessible by each person at the mine.

147 Workers' access to guidelines

The site senior executive must ensure a copy of the current guideline for work carried out at the mine is available to, and easily accessible by, each worker carrying out the work at the mine.

148 Prohibited substances

The site senior executive must ensure a prohibited substance mentioned in schedule 2, column 1, is not used at the mine for a prohibited purpose mentioned in schedule 2, column 2, opposite the name of the substance.

CHAPTER 3—MISCELLANEOUS

149 Places declared to be, or not to be, mines—Act, s 9

For section 9(4)[24] of the Act—

(a) each place mentioned in schedule 3, part 1, is declared to be a mine; and

(b) each place mentioned in schedule 3, part 2, is declared not to be a mine.

150 Prescribed number of persons for giving facility description—Act, s 47

For section 47(1)(b)[25] of the Act, the prescribed number of persons is—

(a) for section 47(1)(b)(i)—5; or

(b) for section 47(1)(b)(ii)—4.

151 Fees

The fees payable to the board of examiners under the Act are stated in schedule 5.

24 Section 9 (Meaning of "mine") of the Act

25 Section 47 (Notices by operator) of the Act

SCHEDULE 1

TYPES OF SERIOUS ACCIDENTS AND HIGH POTENTIAL INCIDENTS

section 13

PART 1—TYPES FOR SECTION 197(1) OF THE ACT

1. An incident causing the death of a person.

2. An incident causing a person an injury that—

(a) endangers, or is likely to endanger, the person's life; or

(b) causes, or is likely to cause, the person a permanent significant injury or illness.

3. Damage to, or failure of, winding equipment.

4. The failure of explosion protected equipment.

5. An electric shock or electrical burn to a person.

6. An unplanned ignition or explosion of an explosive.

7. An incident causing an emergency evacuation of the mine, or part of it, other than as part of a training exercise.

8. A catastrophic or major structural failure of plant.

PART 2—TYPES FOR SECTION 198(1)(C) OF THE ACT

1. A type of accident or incident mentioned in part 1.

2. A fire in an underground mine.

3. An unplanned ignition of gas or dust, or a combination of gas and dust.

4. An inrush causing inundation of the mine or part of it.

SCHEDULE 1 (continued)

5. A major rock fall.

6. The entrapment of a person.

7. The uncontrolled release of a hazardous substance or dangerous good.

SCHEDULE 2

PROHIBITED SUBSTANCES

section 148

Column 1 Prohibited substance	Column 2 Prohibited purpose
amosite, crocidolite, fibrous anthophyllite, tremolite or actinolite	all uses, other than sampling, analysis, maintenance, removal, disposal, encapsulation or enclosure
chrysotile	spraying
compressed natural gas, hydrogen, liquid petroleum gas, petrol	use underground in an internal or external combustion engine

SCHEDULE 3

PLACES DECLARED TO BE, OR NOT TO BE, MINES

section 149

PART 1—PLACES DECLARED TO BE MINES

University of Queensland mine located at 40 Isles Road, Indooroopilly.

PART 2—PLACES DECLARED NOT TO BE MINES

A part of a mine that is an easement for electricity is declared not to be a part of the mine.

SCHEDULE 4

GENERAL EXPOSURE LIMITS FOR HAZARDS

schedule 6, definition **"general exposure limit"**

Column 1 **Hazard**	**Column 2** **General exposure limit**
atmospheric contaminant	the exposure standard assigned to the contaminant in NOHSC's document entitled 'Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003]'
crystalline silica (cristobalite, quartz, tridymite)	the exposure standard stated for the contaminant in the 'Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment' and published in the Commonwealth of Australia Gazette No. C6 on 4 June 1996
inspirable dust	10 mg/m^3
ionising radiation	the dose limit stated in NOHSC's document entitled 'National Standard for Limiting Occupational Exposure to Ionizing Radiation [NOHSC:1013]', schedule 1
noise	a dose limit stated in NOHSC's document entitled 'National Standard for Occupational Noise [NOHSC:1007]'
respirable synthetic mineral fibre	0.5 fibre/mL air

SCHEDULE 5

BOARD OF EXAMINERS' FEES

section 151

		$
1.	Application for assessment for a first class certificate of competency	27.00
2.	Issuing a duplicate certificate of competency to replace a lost, destroyed or defaced certificate	5.40

SCHEDULE 6

DICTIONARY

section 3

"ADG Code" means the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Ministerial Council for Road Transport, as in force from time to time.

"AHD" means the Australian height datum adopted by the National Mapping Council of Australia for referencing a level or height back to a standard base level.

"appropriate doctor", for a health surveillance or health assessment of a person at a mine, means a doctor with demonstrated knowledge of the risks associated with activities performed by the mine's workers.

"AS" or **"AS/NZS"** means a standard published by Standards Australia International Limited ACN 087 326 690.

"AS 2187" means AS 2187 'Explosives—Storage, transport and use'.

"asbestos" means the fibrous form of the mineral silicates belonging to the serpentine and amphibole groups of rock-forming minerals and includes—

(a) actinolite, amosite (brown asbestos), anthophyllite, crocidolite (blue asbestos), chrysotile (white asbestos), tremolite; and

(b) any mixture containing 1 or more of the minerals mentioned in paragraph (a).

"asbestos material" means installed thermal or acoustic insulation material comprising or containing asbestos.

"biological monitoring", for a hazardous substance, means testing for the presence of a hazardous substance, its metabolites or a biochemical change in a person's body tissue, exhaled air or fluid resulting from exposure to the hazardous substance.

"blasting explosive" means an explosive that contributes the majority of the blasting work in mining or quarrying.

SCHEDULE 6 (continued)

"conveyance" includes a skip, cage, kibble or stage.

"dangerous goods" see section 51.

"detonator" means a capsule or case containing an explosive of high sensitivity used for initiating another explosive.

"effect", of a hazard, means the hazard's effect on a person's safety or health.

"electrical work" means electrical work as defined under the *Electrical Safety Act 2002*.

"emergency response plan" means an emergency response plan developed under section 35.

"employer", for a worker, means the operator or contractor who employs the worker.

"explosive" means the following—

(a) a blasting explosive;

(b) a detonator.

"exposed" to a hazard that is a substance, for a person, means the person has absorbed, or is likely to absorb, the substance—

(a) by ingestion or inhalation; or

(b) through the skin or mucous membrane.

"exposure limit", applying to a worker for a hazard, means—

(a) if the worker does not have a personal exposure limit for the hazard—the general exposure limit for the hazard or, if the general exposure limit has been adjusted for the worker under section 134, the limit as adjusted; or

(b) if the worker has a personal exposure limit for the hazard—the personal exposure limit or, if the personal exposure limit has been adjusted for the worker under section 134, the limit as adjusted.

"extra low voltage" means a voltage of less than 50 V a.c. or 120 V d.c., ripple free.

SCHEDULE 6 (continued)

"extraneous electricity", for blasting, means an unintended electrical current from a source other than the firing device which could initiate a detonator.

Examples—

Stray currents, induced currents, static electricity and radiofrequency energy.

"fitness assessment record" see sections 87(1) and 88(2).

"fitness assessment report", for a worker, means written information, other than a medical record, about the worker's fitness for work.

"GDA" means Geocentric Datum of Australia which is a system of earth-centred datum used for mapping.

"general exposure limit", for a hazard mentioned in schedule 4, column 1, means the exposure standard, dose limit or other limit stated opposite the hazard in schedule 4, column 2.

"hazardous substance", see section 50.

"health assessment record" see section 131(2) and 132(b).

"health assessment report", for a worker, means written information, other than a medical record, about the worker's ability to tolerate a hazard without harming the worker or the worker's offspring.

"health surveillance" means the monitoring, including biological monitoring and medical assessment, of a person to check for changes in the person's health because of exposure to a hazard.

"identify", for a hazard, means establish the presence of the hazard by a risk management process.

"local environment", of a mine, means the area outside the mine site affected, or reasonably likely to be affected, by operations at the mine.

"lock-out", plant, means attach a lock to the plant or an enclosure in which the plant is located.

"medical record", of a person, means personal medical results or clinical findings obtained from a fitness or health assessment or health surveillance of the person.

"MSDS" stands for Material Safety Data Sheet.

SCHEDULE 6 (continued)

"national code of practice", for storing and handling dangerous goods, means the national code of practice for the matter—

(a) declared by NOHSC under part VI of the *National Occupational Health and Safety Commission Act 1985* (Cwlth); and

(b) published by the Australian Government Publishing Service

"national standard", for a hazard, means the national standard for the hazard—

(a) declared by NOHSC under part VI of the *National Occupational Health and Safety Commission Act 1985* (Cwlth); and

(b) published by the Australian Government Publishing Service.

"NICNAS summary report" means a summary report under the *Industrial Chemicals (Notification and Assessment) Act 1990* (Cwlth).[26]

"NOHSC" means the National Occupational Health and Safety Commission under the *National Occupational Health and Safety Commission Act 1985* (Cwlth).

"personal exposure limit", for a person, means the personal exposure limit set for the person under section 133(2).

"tag", plant or a part of plant, means attach a tag to the plant or part or an enclosure in which it is located.

"underground magazine" means an underground magazine as defined in AS 2187.0.[27]

"underground temporary storage" means an area that is—

(a) underground at a mine; and

(b) set aside temporarily for storing explosives for imminent use in operations that are in progress near the temporary storage.

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26 NICNAS summary reports refer only to pure substances and are available from the Australian Government Publishing Service.

27 AS 2187.0—

"underground magazine" An enclosed cavity formed in underground rock, or a magazine constructed in accordance with AS 2187.1 for underground use, which is used for the storage of explosives and detonators.

SCHEDULE 6 (continued)

"visitor" means a person other than a worker.

"winder" means a winding engine for raising or lowering a conveyance in a shaft, winze or raise.

"winding equipment" includes the following—

(a) a winder;

(b) a conveyance;

(c) a counterweight for the conveyance;

(d) ropes and attachments associated with the winding process;

(e) a headframe;

(f) guides;

(g) equipment for loading and unloading the conveyance.

"work environment", at a mine, includes the mine site and plant at the site.

ENDNOTES

1 Index to endnotes

2 Date to which amendments incorporated

This is the reprint date mentioned in the Reprints Act 1992, section 5(c). Accordingly, this reprint includes all amendments that commenced operation on or before 1 July 2004. Future amendments of the Mining and Quarrying Safety and Health Regulation 2001 may be made in accordance with this reprint under the Reprints Act 1992, section 49.

3 Key

Key to abbreviations in list of legislation and annotations

Key		Explanation	Key		Explanation
AIA	=	**Acts Interpretation Act 1954**	**(prev)**	=	**previously**
amd	=	**amended**	**proc**	=	**proclamation**
amdt	=	**amendment**	**prov**	=	**provision**
ch	=	**chapter**	**pt**	=	**part**
def	=	**definition**	**pubd**	=	**published**
div	=	**division**	**R[X]**	=	**Reprint No.[X]**
exp	=	**expires/expired**	**RA**	=	**Reprints Act 1992**
gaz	=	**gazette**	**reloc**	=	**relocated**
hdg	=	**heading**	**renum**	=	**renumbered**
ins	=	**inserted**	**rep**	=	**repealed**
lap	=	**lapsed**	**(retro)**	=	**retrospectively**
notfd	=	**notified**	**rv**	=	**revised edition**
o in c	=	**order in council**	**s**	=	**section**
om	=	**omitted**	**sch**	=	**schedule**
orig	=	**original**	**sdiv**	=	**subdivision**
p	=	**page**	**SIA**	=	**Statutory Instruments Act 1992**
para	=	**paragraph**	**SIR**	=	**Statutory Instruments Regulation 2002**
prec	=	**preceding**	**SL**	=	**subordinate legislation**
pres	=	**present**	**sub**	=	**substituted**
prev	=	**previous**	**unnum**	=	**unnumbered**

4 Table of reprints

Reprints are issued for both future and past effective dates. For the most up-to-date table of reprints, see the reprint with the latest effective date.

If a reprint number includes a letter of the alphabet, the reprint was released in unauthorised, electronic form only.

TABLE OF REPRINTS

Reprint No.	Amendments included	Effective	Reprint date
1	none	16 March 2001	6 April 2001
			(Column discontinued) Notes
1A	to 2002 SL No. 122	1 July 2002	
1B	to 2002 SL No. 260	1 October 2002	
1C	to 2003 SL No. 100	1 July 2003	
1D	to 2004 SL No. 67	1 July 2004	

5 List of legislation

Mining and Quarrying Safety and Health Regulation 2001 SL No. 17
made by the Governor in Council on 15 March 2001
notfd gaz 16 March 2001 pp 1184–5
ss 1–2 commenced on date of notification
remaining provisions commenced 16 March 2001 (see s 2)
exp 1 September 2011 (see SIA s 54)
Note—The expiry date may have changed since this reprint was published. See the latest reprint of the SIR for any change.

amending legislation—

Natural Resources and Mines Legislation Amendment and Repeal Regulation (No. 1) 2002 SL No. 122 pts 1, 13
notfd gaz 31 May 2002 pp 482–7
ss 1–2 commenced on date of notification
remaining provisions commenced 1 July 2002 (see s 2)

Electrical Safety Regulation 2002 SL No. 260 ss 1–2, 235 sch 7
notfd gaz 27 September 2002 pp 340–4
ss 1–2 commenced on date of notification
remaining provisions commenced 1 October 2002 (see s 2)

Natural Resources and Mines Legislation Amendment Regulation (No. 1) 2003 SL No. 100 pts 1, 12
notfd gaz 30 May 2003 pp 371–6
ss 1–2 commenced on date of notification
remaining provisions commenced 1 July 2003 (see s 2)

Natural Resources, Mines and Energy Legislation Amendment Regulation (No. 1) 2004 SL No. 67 pts 1, 13
notfd gaz 28 May 2004 pp 277–80
ss 1–2 commenced on date of notification
remaining provisions commenced 1 July 2004 (see s 2)

6 List of annotations

Fees
s 151 amd 2002 SL No. 122 s 28

SCHEDULE 5—BOARD OF EXAMINERS' FEES
amd 2002 SL No. 122 s 29; 2003 SL No. 100 s 24; 2004 SL No. 67 s 28

SCHEDULE 6—DICTIONARY
def **"electrical work"** amd 2002 SL No. 260 s 235 sch 7