

Coal Mines (Underground) Regulation 1999

Note:

The Regulation is to be repealed on the commencement of sec 222 (e) of the *Coal Mine Health and Safety Act 2002 No 129*.

Part 1 – Preliminary

1 Name of Regulation

This Regulation is the *Coal Mines (Underground) Regulation 1999*.

2 Commencement

This Regulation commences on 1 September 1999.

3 Application

This Regulation applies to and in respect of underground mines.

4 Definitions

(1) In this Regulation: "**applied to**", in relation to the application of codes, standards or guidelines to mines, means specified in respect of a mine by the Chief Inspector in a notice published under clause 14 of the *Coal Mines (General) Regulation 1999*. "**approved**", in relation to any equipment, apparatus, material or thing, means approved by the Chief Inspector or an accredited assessing authority under the *Coal Mines (General) Regulation 1999*. "**competent**" means having appropriate experience, knowledge, skills and capability. "**deputy**", in relation to a mine, means a deputy appointed by the mine manager under the Act. "**hazardous zone**" means:

- (a) a return airway in a mine, or
- (b) that part of an intake airway in a ventilation district in a mine that is on the return side of such points as are 100 metres outbye the most inbye completed line of cutthroughs or 100 metres from, and on the intake side of, a longwall or shortwall face, or
- (c) a part of a mine in which there is a methane concentration of 1.25 per cent or greater in the general body of air, or
- (d) a part of a mine specified as a hazardous zone.

"**intrinsically safe**", in relation to any circuit or electrical apparatus, means explosion protected by such means that any spark or thermal effect produced in the circuit or apparatus is incapable of causing ignition of an explosive mixture of methane or other flammable gases or vapours and air. "**production district**" means a production district established by a mine's inspection system. "**specified**" (except in clauses 34 (1) and 205) means specified in writing by the Chief Inspector and published in the Gazette. "**the Act**" means the *Coal Mines Regulation Act 1982*. "**ventilation district**" means a part of a mine that is ventilated by a separate air split.

(2) In this Regulation, a reference to an Australian Standard is a reference to a Standard published by Standards Australia.

(3) The explanatory note, table of contents and notes in the text of this Regulation do not form part of this Regulation.

5 Duty of mine manager to comply or ensure compliance with Regulation

If a provision of this Regulation imposes a requirement in relation to a mine but does not impose that requirement on persons generally or on a particular person, it is the duty of the mine manager:

- (a) to comply with the provision, or
- (b) if it is not reasonably practicable for the manager to comply with the provision, to ensure that it is complied with.

Part 2 – Operations and working practices

Division 1 – General

6 Implementation of a management structure

- (1) A mine owner must develop and implement a management structure (not inconsistent with the Act, this Regulation and the *Coal Mines (General) Regulation 1999*) for the purpose of defining the duties and responsibilities of the persons who control operations at the mine.
- (2) The general object of a management structure is to ensure the safety and health of persons at the mine.
- (3) A management structure must be documented and the relevant document or documents must be kept at the mine.

7 Control of persons underground

- (1) Each person (other than a mining official) underground at a mine must be assigned to and be under the control of a mining official who is on duty underground at the mine.
- (2) A mine manager must ensure that an accurate record of the persons underground at the mine at any time, and their likely location, is available at the mine.

7A Age restriction on employment underground at a mine

- (1) A person must not employ a person under the age of 16 years underground at a mine.
- (2) A person may employ a minor who is at least 16 years old underground at a mine only if the minor is receiving specific instruction or vocational training in relation to working underground at a mine.

8 Inexperienced persons not to work unaccompanied underground

- (1) A person engaged in production or maintenance work underground at a mine must not work unaccompanied unless:
 - (a) the person has had at least one year's underground mining experience, and
 - (b) the mine manager has given the person an indication in writing that the manager is satisfied that the person is competent to perform the work in a safe manner while unaccompanied and the person has agreed to do the work unaccompanied.
- (2) A person must not work:
 - (a) in or about a face area at a mine for the purpose of cutting coal, or
 - (b) anywhere at a mine for the purpose of erection or removal of supports,unless the person is working, or has worked for a period of at least one year, in the company of persons who have had at least one year's experience in such work.

9 Withdrawal of persons from mines

- (1) A mine manager must determine conditions ("**withdrawal conditions**") under which persons are to be withdrawn, and to remain withdrawn, from the mine or parts of the mine as a precautionary measure when conditions of danger or a threat to health or safety (not amounting to an emergency) warrant such action.
- (2) In determining withdrawal conditions a mine manager must have regard to any relevant guidelines applied to the mine.
- (3) Employees' representatives possessing appropriate skills, knowledge or experience must be consulted in the process of determining withdrawal conditions.
- (4) Withdrawal conditions must be documented and the relevant document or documents must be kept at the mine.
- (5) A mine's withdrawal conditions must be communicated to the mine's workforce.
- (6) A mine manager must supply a copy of the mine's withdrawal conditions and any revisions of them to the district inspector and the district check inspector within 7 days of the conditions being put into effect.

(7) A mine manager must ensure that persons are withdrawn, or remain withdrawn, from the mine consistent with the mine's withdrawal conditions.

10 Duties of mining officials

(1) Mining officials must:

- (a) take steps to make known to persons assigned to them any relevant information arising from their work at the mine and concerning their safety or health, and
- (b) immediately act on any information received or discovered regarding the health or safety of persons in their charge, and
- (c) investigate any complaints or reports made to them regarding the health or safety of persons in their charge, and
- (d) take remedial action as soon as practicable to control known dangers to safety or health or, if such action is not possible, pass appropriate information regarding the danger on to a more senior mining official, and
- (e) take steps to control the entry of persons to any part of the mine where danger is discovered and cannot be immediately rectified, and
- (f) take steps to know at all times the whereabouts of persons in their charge, and
- (g) attend, on a regular basis during the course of a shift, the places where persons in their charge are working and monitor conditions that may adversely affect their safety or health.

(2) The frequency of attendance by a mining official at places where persons in the official's charge are working is to be based on an estimation by the official of the hazards involved in the work or the working environment. The greater the hazards, the more frequent the attendance.

11 Cutting or welding underground

Cutting or welding must not be carried out underground at a mine unless it is carried out having regard to a code, relating to cutting and welding, applied to the mine.

12 Continuous miners--driver protection

A continuous miner that is manually operated by a driver within a cabin must not be operated in a mine unless it is equipped with a canopy of an approved type designed to protect the driver from a fall of coal or stone from above the machine.

13 Diesel engines underground

A mine mechanical engineer must ensure that a diesel engine or a diesel engine system is not used underground at the mine unless it is of an approved type.

14 Monitoring for diesel exhaust emissions

(1) The exhaust emissions of diesel engines in use underground at a mine must be regularly monitored to ensure that the emissions do not present a risk to health or safety.

(2) The Chief Inspector may specify:

- (a) the maximum permissible limits for raw undiluted exhaust components from a diesel engine to be used underground at a mine, and
- (b) the maximum permissible limits for diluted components of diesel engine exhaust in mine air, and
- (c) the frequency and means by which the raw undiluted exhaust components of any diesel engine operating underground at a mine or the diluted components of diesel engine exhausts in the mine air are to be measured and recorded, and
- (d) the steps to be taken if permissible limits are exceeded.

(3) The manager of a mine to which a specification applies must ensure that it is complied with.

15 Mining in outburst prone areas

If a code or guideline relating to mining in outburst prone areas has been applied to a mine or part

of a mine, regard must be had to the code or guideline in carrying out any mining in an area to which the code or guideline applies.

Division 2 – Inspection systems

16 Implementation of mine inspection systems

- (1) A mine manager must, within 6 months after the commencement of this Regulation, develop and implement a mine inspection system providing for:
 - (a) the inspection of all safely accessible underground places in the mine for the purpose of detecting hazards to safety or health, and
 - (b) the bringing of any such hazards to the attention of appropriate persons so as to initiate their effective control.
- (2) In particular, a mine inspection system must provide for:
 - (a) the establishment in the mine of production districts and the assignment of deputies to be in charge of each production district during each shift, and
 - (b) the defining of the duties of production district deputies (which must include the conduct of inspections required by this Regulation and the mine inspection system and the effective oversight of the safety and health of persons in the production district).
- (3) The places to be inspected in accordance with a mine inspection system are to include, but are not limited to, the following:
 - (a) all accessible roadways,
 - (b) goaf edges,
 - (c) shafts,
 - (d) drifts.
- (4) The matters to be covered by a mine inspection system are to include, but are not limited to, inspections for the presence, condition or adequacy of the things listed in Schedule 1.
- (5) A mine inspection system must include provisions for audits of the system's operation and for periodic reviews (at intervals not exceeding 2 years) of the system's effectiveness.
- (6) A mine inspection system must be documented and the relevant document or documents must be kept at the mine.

17 Employees' representatives to be consulted

Employees' representatives possessing appropriate skills, knowledge or experience must be consulted regarding (and be given an opportunity to participate in) the development and revision of a mine inspection system.

18 Copy to be supplied to district inspector and district check inspector

A mine manager must supply a copy of the mine's inspection system, and any revisions of it, to the district inspector and the district check inspector within 7 days of the system or revisions being put into effect.

19 Competency and training of personnel

- (1) A mine manager must ensure that the persons required to perform duties as part of a mine inspection system are competent to carry out those duties and are given appropriate training.
- (2) A person who is to conduct inspections at a mine in accordance with a mine inspection system must be appointed by the mine manager in writing for that purpose.
- (3) In determining whether or not a person is competent to perform duties required by a mine inspection system, a mine manager must consider the following matters:
 - (a) the level of supervision by mining officials,
 - (b) the duties to be performed,
 - (c) any prerequisites for performance of the duties.

(4) A person is not to be considered competent to carry out an inspection task concerning roadway stability unless the person has demonstrated a level of knowledge and experience equivalent to that of a deputy in relation to the task.

20 Production districts

(1) The production districts provided for in a mine inspection system must be all the areas in the mine within which there is a place, or places, where coal or stone is mined (other than places at which coal or stone is mined for repairing or enlarging roadways).

(2) Subject to subclauses (3) and (4), a production district must, at least, include all places within 100 metres of a place where mining occurs and in the same ventilation split as that place.

(3) The start of a production district must not be in a hazardous zone.

(4) In determining the extent of a production district, the ability of the mining official in charge of it to effectively carry out required inspections and oversee the safety and health of persons in it must be taken into account.

(5) A mine inspection system may provide that a place that would otherwise be a production district may be treated as not being a production district during any period of not less than one shift when coal or stone is not intended to be mined in it.

(6) The start of a production district in a roadway through which people normally travel must be clearly and durably marked to the effect that it is the start of the district.

Division 3 – Deputies

21 Deputies to be in charge of one production district only

A deputy must not be in charge of more than one production district at the one time.

22 Deputies to be present whenever mining is taking place

A deputy assigned to a production district during a shift must be present in the district whenever coal or stone is being mined in the district during that shift.

23 Definition of duties

A production district deputy's duties must be defined so as to ensure that the deputy has sufficient time and opportunity to effectively detect changes or features in the mining environment which may indicate, or result in, a hazard to the safety or health of persons.

24 Compliance with Act and Regulations

Subject to the requirements of the Act, a deputy must, to the best of the deputy's ability, ensure that:

(a) persons under the deputy's charge understand their duties, and

(b) all requirements imposed by or under the Act, this Regulation or the *Coal Mines (General) Regulation 1999* are observed.

25 Deputies not to engage in other activities

A production district deputy must not engage in any activity in a way that may compromise the deputy's ability to effectively oversee the safety and health of persons in the district.

26 Electrical power to be isolated at end of shift

(1) Unless replaced by another mining official, a deputy assigned to a production district for a shift must, at the end of the shift, ensure that the power supply to all non-intrinsically safe electrical equipment in a hazardous zone in the district is isolated.

(2) Despite subclause (1), power may be left connected to any auxiliary fan if the isolation of power to the fan may result in a build-up of gas.

(3) Any period in which power remains connected to an auxiliary fan while a deputy is not present in a production district must be minimised but in any case must not be longer than 2 hours.

27 Persons entering production districts to report to deputies

All persons entering a production district must immediately report their presence to the deputy in charge of the district.

Division 4 – Inspections

28 Inspections of production districts

(1) A mine inspection system must contain the following minimum inspection requirements for each production district at the mine:

- (a) inspection by a mining official for the presence of flammable gas in any working or temporary standing place before connecting power to any machinery in that place (except where the place has been inspected for the presence of flammable gas within the previous 30 minutes),
- (b) inspection by a mining official, at intervals not exceeding 2 hours, of each face area where coal or stone is being mined,
- (c) inspection by a mining official, at intervals not exceeding 5 hours, of all places where people are working,
- (d) inspection by a mining official, at least once each shift, of all places in the district.

(2) A mine inspection system must also include provisions for the conduct by mining officials or competent persons of other inspections in production districts having regard to geological factors, mining systems and monitoring systems in use and gas hazards or other risks to health or safety which may arise.

29 Belt conveyor inspections

(1) A mine inspection system must provide for the carrying out of periodic inspections of each operating belt conveyor in the mine. The inspection system must provide that at least 3 of those inspections (as equally spaced as practicable) are carried out every 24 hours.

(2) Belt conveyor inspections must include inspections of or for the following:

- (a) belt conveyor alignment and clearance,
- (b) accumulations of spillage, coal and coal dust,
- (c) condition of belt conveyor structure, including idlers and return rollers,
- (d) evidence of overheating of the driving head, idlers and rollers,
- (e) undue accumulations of lubricant,
- (f) the condition of the conveyor belt, including joints,
- (g) the condition of scrapers and sprays,
- (h) any evidence of heatings or ignitions,
- (i) the effectiveness of the guards of the bootends, transfer points and driveheads,
- (j) the condition of the remote control or signalling system,
- (k) the operation of telephones or other means of communication near belt conveyors.

(3) The mine inspection system must provide for the manner of conducting of belt conveyor inspections (having regard to any relevant guidelines applied to the mine).

(4) If a belt conveyor system or part of a belt conveyor system in a mine will not be required to operate within a period of 2 hours after it has been shut down, the mine inspection system must provide for a competent person or persons appointed by the mine manager to patrol the system or the part for a period of 2 hours immediately following the shutting down.

(5) During the patrol, the person or persons must be required to examine the conveyor system for the presence of any overheating, smouldering or unsafe condition likely to cause a fire.

30 Other inspections

(1) A mine inspection system must contain the following minimum inspection requirements for underground places at the mine (other than places in production districts):

- (a) inspection by a deputy or competent person, at least once each shift, of all places where people are required to work,
 - (b) inspection by a deputy or competent person, at least once every 24 hours, of all roadways where people regularly travel,
 - (c) inspection by a deputy or competent person, at least once every 7 days, of all safely accessible places.
- (2) A mine inspection system must also include provisions for the conduct of other inspections of those places having regard to geological factors, mining systems and monitoring systems in use and gas hazards or other risks to health or safety which may arise.
- (3) If dangerous quantities of noxious or flammable gas are likely to be encountered or there is likely to be roadway instability, potential for inrush or other significant hazards to safety or health, the mine inspection system must provide for any inspection to be conducted by 2 persons, one of whom is to be a mining official and the other a competent person.

31 Pre-entry inspection after interruption

- (1) If the routine of inspections for a place required by a mine inspection system is interrupted, the inspection system must provide for the conduct of a pre-entry inspection by a mining official before entry of persons to that place or the starting of machinery in that place.
- (2) The non-conduct of an inspection required by the mine inspection system is considered to be an interruption to the routine of inspections.
- (3) If the relevant production district has not been inspected for one shift or more, the routine of inspections is considered to be interrupted.
- (4) The mine inspection system must require that any pre-entry inspection include provision for ascertaining that the main ventilation fan is operating correctly.

32 Reading of recording barometer

A mine inspection system must specify the circumstances when the recording barometer kept on the surface of the mine is to be read.

33 Records and evidence of inspections

- (1) A mine inspection system must incorporate procedures for durably recording the following matters in relation to an inspection:
- (a) the date and time of the inspection,
 - (b) the type of inspection,
 - (c) identification of the persons conducting the inspection,
 - (d) the nature of the hazards detected,
 - (e) the actions taken in response to the hazards.
- (2) Such records must be maintained for at least 3 years after being made.
- (3) The mine inspection system must require a person conducting an inspection to leave a sufficiently durable indication that the inspection has been conducted. The indication is:
- (a) if the inspection is in a production district--to be left on the deputy's board (or equivalent), or
 - (b) if not in a production district--to be in a form sufficient to indicate to persons entering the place inspected that an inspection has been conducted and the date and time of inspection.
- (4) The mine inspection system must require the results of an inspection of a place at a mine where persons are required to work to be recorded in a form that will allow those persons to examine the results before entering the place.

Division 5 – Notification of dangerous occurrences

34 Notification of dangerous occurrences

- (1) For the purposes of Divisions 5 and 6 of Part 4 of the Act, the following occurrences are

specified under section 85 of the Act as being dangerous occurrences:

- (a) an unplanned ignition of gas or dust underground,
- (b) an outbreak of fire or spontaneous heating of coal or other material underground or initial spontaneous heating in a coal stockpile on the surface,
- (c) a failure of ventilation that results in an accumulation of gas that requires the withdrawal of persons,
- (d) an inrush within the meaning of Division 8,
- (e) a coal or rock outburst that endangers a person or disrupts mine ventilation or impedes passage,
- (f) damage to or a failure in haulage equipment used to transport persons in a shaft or drift that may endanger any person, interfere with the normal working of a mine or disrupt access to a second means of egress from a mine,
- (g) (Repealed)
- (h) an unplanned ignition or explosion of a blasting agent or an explosive underground,
- (i) a sudden pillar collapse,
- (j) the entombment of a person.

(2), (3) (Repealed)

34A Notifiable incidents

(1) For the purposes of this clause, the following incidents are notifiable incidents:

- (a) an electric shock to a person from a source that is above extra low voltage (as defined in *AS/NZS 3000:2000, Electrical Installations* (known as the Australian/New Zealand Wiring Rules)),
- (b) an unplanned movement of a vehicle, machine or any item of plant or equipment such as to endanger persons or cause serious property damage,
- (c) a failure or collapse of any structure such as to endanger persons or property.

(2) If a notifiable incident occurs at a mine, the mine manager must ensure that the district inspector and the district check inspector are:

- (a) notified of the incident immediately (in the form and the manner specified, if any), and
- (b) given an accurate description of the nature of the incident.

(3) The scene of the notifiable incident must be left undisturbed for 24 hours after the incident's occurrence (unless both the district inspector and the district check inspector earlier release the scene).

(4) Subclause (3) does not prevent reasonable measures being taken to secure health or safety at the scene of the notifiable incident.

(5) As soon as practicable after the notifiable incident's occurrence, the mine manager must ensure that:

- (a) an investigation is carried out to establish the circumstances and cause of the incident, and
- (b) a report (in the form and manner specified, if any) on the results of the investigation is submitted to the district inspector and district check inspector.

(6) In this clause, "**serious property damage**" means property damage that, in the opinion of the mine manager concerned, is serious property damage.

34B Notification of other incidents

(1) A mine manager must report the following incidents to the district inspector and district check inspector within 24 hours of the manager's becoming aware of the occurrence of the incident:

- (a) an event that occurs in a hazardous zone and leaves visible evidence on an electric cable of arcing having occurred,
- (b) an unplanned fall of roof or sides of a mine that impedes passage or disrupts mine ventilation,

- (c) a windblast that results in injuries requiring first-aid treatment,
- (d) the entrapment of a continuous miner by a fall of roof or sides such that it is unable to be recovered under its own tractive effort,
- (e) the entrapment of a breaker line support by a fall of roof such that it is unable to be recovered under its own tractive effort,
- (f) a creep, progressive pillar collapse or significant deviation from predicted surface subsidence,
- (g) the in-service failure of the explosion protection characteristic of explosion protected apparatus located in a hazardous zone.

(2) A form may be specified for the purposes of subclause (1) and, if a form is specified, a report must be in that form and contain such details as may be specified.

Division 6 – Information and communication

35 Communication of information to deputies and other officials

- (1) Arrangements must be made and maintained for communicating daily to deputies and other officials who have charge of operations carried on underground at a mine any matters related to safety or health and affecting the carrying out of their duties.
- (2) It is sufficient for such communication to be through an under-manager for the time being assigned control of the mine.

36 Communication of information to employees

- (1) Arrangements must be made and maintained for communicating daily to all employees involved in operations carried on underground at a mine any matters related to safety or health and affecting the carrying out of their duties.
- (2) It is sufficient for such communication to be through a deputy for the time being assigned control of the relevant part of the mine.

37 Communication between personnel on successive shifts

- (1) Arrangements must be made and maintained for effectively communicating between personnel on successive shifts in any part of the mine any matters related to safety or health and affecting the carrying out of their duties.
- (2) It is sufficient for such communication to be through deputies for the time being assigned control of the relevant parts of the mine.

Division 7 – Working dimensions and breakaway rules

38 Dimensions of pillars

For the purposes of section 138 (2) (a) of the Act, the dimension in plan of a pillar must not be less than:

- (a) a distance that is equal to one-tenth of the thickness of the cover (to the surface), or
- (b) 10 metres,

whichever is the greater.

39 Roadways--dimensions and breakaway rules

- (1) A mine manager must make rules with respect to the forming of intersections in roadways ("**breakaway rules**").
- (2) The breakaway rules must include the following matters:
 - (a) provisions fixing the maximum width of intersections,
 - (b) provision for the manner of commencement of drivage of roadways,
 - (c) a plan of the proposed drivages showing the sequence of forming the intersections and the manner of support.
- (3) For the purposes of:
 - (a) section 104 of the Act, the subject-matter referred to in subclause (1) in respect of which a mine manager is required to make rules is a prescribed subject-matter, and
 - (b) section 104 (2) (a) of the Act, a matter referred to in subclause (2) is a prescribed

matter.

(4) For the purposes of section 138 (2) (b) of the Act, the prescribed maximum width of roadways is 5.5 metres except for that part of a roadway forming an intersection with another roadway.

Division 8 – Inrush

40 Implementation of an inrush prevention system

(1) A mine manager must, within 6 months after the commencement of this Regulation, develop and implement a system (an "**inrush prevention system**") to prevent any inrush into the mine workings of:

- (a) water or other fluid material, or any material that flows when wet, or
- (b) flammable or noxious gases,

being an inrush that may put the mine or persons at the mine at risk.

(2) An inrush prevention system must be based on information obtained from an inrush risk assessment undertaken at the mine in accordance with this Division.

(3) An inrush prevention system must:

- (a) identify each potential source of inrush (for example, current or disused mine workings (in the same seam or another seam), surface waters or aquifers), and
- (b) contain an objective summary of the nature and magnitude of the identified inrush risks, and
- (c) set out the measures to be taken to prevent inrushes, and
- (d) provide for the identification and maintenance of inrush control zones between the mine workings and each identified potential source of inrush, and
- (e) include any special systems of working developed for mining and working in inrush control zones, and
- (f) include any assumptions made in the development of measures to prevent inrushes, and
- (g) be maintained so that the best available knowledge of inrush risk at the mine is at all times in practice, and
- (h) be reviewed and updated before the mine is developed into any new area.

(4) In developing and implementing an inrush prevention system regard must be had to any relevant guidelines applied to the mine.

(5) An inrush prevention system must include provisions for audits of the system's operation and for periodic reviews (at intervals not exceeding 2 years) of the system's effectiveness.

(6) An inrush prevention system must be documented and the relevant document or documents must be kept at the mine.

41 Employees' representatives to be consulted

Employees' representatives possessing appropriate skills, knowledge or experience must be consulted regarding (and be given an opportunity to participate in) the development and revision of an inrush prevention system.

42 Copy to be supplied to district inspector and district check inspector

A mine manager must supply a copy of the mine's inrush prevention system, and any revisions of it, to the district inspector and the district check inspector within 7 days of the system or revisions being put into effect.

43 Competency and training of personnel

A mine manager must ensure that the persons required to perform duties as part of an inrush prevention system are competent to carry out those duties and are given appropriate and continuing training (including, where relevant, training in protective drilling and the prevention of inrush from drill holes).

44 Inrush risk assessments

- (1) An inrush risk assessment for the purposes of developing and implementing a mine's inrush prevention system must be undertaken by the mine manager and a team (or teams) of competent persons selected by the manager.
- (2) An inrush risk assessment must:
 - (a) be conducted consistent with any relevant, recognised standards for risk assessments in mining, and
 - (b) take into account all relevant available information concerning inrush risks at the mine, and
 - (c) identify, and assess the nature and magnitude of, all potential sources of inrush, and
 - (d) include any assumptions made in relation to the identification and assessment of inrush risks, and
 - (e) include, in relation to each identified inrush risk, an assessment of the worst case position of the potential source of inrush having regard to such things as the reliability of mine plans, future mining operations and geological changes.
- (3) An inrush risk assessment must include the viewing of:
 - (a) the originals of any plans, and
 - (b) any files or other material,that are held by, or are under the control of, the Chief Inspector or the Department and are relevant to the assessment of inrush risks at the mine.
- (4) The Chief Inspector and the Department must make available any plans, files or other material required to be viewed for the purposes of subclause (3).
- (5) An inrush risk assessment must be documented and the relevant document or documents must be kept at the mine.

45 Removal or rendering harmless potential inrush sources

- (1) In developing and implementing an inrush prevention system, a mine manager must, in respect of each identified potential source of inrush, form an opinion as to whether or not it is practicable to remove it or render it harmless.
- (2) If a mine manager is of the opinion that it is not practicable to remove or render harmless a potential source of inrush, the reasons for forming the opinion must be documented and the relevant document or documents must be kept at the mine.

46 Inrush control zones

- (1) An inrush control zone identified in a mine's inrush prevention system must be of sufficient thickness to safely separate the mine workings from the relevant potential source of inrush.
- (2) Despite subclause (1), in the case of a potential source of inrush that is not an accessible place in the same mine, the relevant inrush control zone must be sufficient to provide a separation of 50 metres of solid strata between the mine workings and the assessed worst case position of the potential source of inrush.

47 Mining in inrush control zones

- (1) Mining may be carried out in an inrush control zone identified in a mine's inrush prevention system if:
 - (a) the relevant potential source of inrush is an accessible place in the same mine and:
 - (i) that place has been inspected by a competent person (appointed by the mine manager) within 30 minutes before the commencement of mining, and
 - (ii) that person has determined that the mining will not cause an inrush to occur, or
 - (b) the mine manager is of the opinion that the mining will not cause an inrush to occur and furnishes (in writing) advice of the proposed mining and the reasons for being of that opinion to the district inspector and district check inspector at least 30

days before the commencement of the mining.

(2) The reasons referred to in subclause (1) (b) may include the adoption by the mine manager of a special system of mining in the inrush control zone included in the mine's inrush prevention system and submitted to the district inspector and district check inspector with the advice referred to in subclause (1) (b).

(3) If the relevant potential source of inrush is in the same seam as the mine workings, any special system of mining adopted must include a scheme of protective drilling.

(4) If a mine manager forms an opinion referred to in subclause (1) (b), the manager must continually revise the opinion in the light of conditions and events encountered in the course of the subsequent mining and advise the district inspector and district check inspector immediately of any changes that may affect the opinion.

(5) If a special system of mining in an inrush control zone is adopted by a mine manager as referred to in subclause (2), the mine manager must ensure that the system of mining is observed.

Division 9 – Support

48 Support rules

(1) For the purposes of section 102 (3) (a) of the Act, the following matters are prescribed as matters with respect to which a mine manager must make support rules:

(a) the provision of means to estimate the types of geological conditions likely to be encountered in roadway development,

(b) the provision of means to assess the stability of roadways to be developed in geological conditions likely to be encountered,

(c) the development of support measures that will provide roadway stability in geological conditions likely to be encountered,

(d) the preparation of support plans that explain in full detail the means of roadway support required to be installed and prepared in a manner such that they may be readily understood by those required to install roadway support,

(e) the provision of safe, effective and systematic work methods for the installation, and subsequent removal where required, of roadway support (including support in connection with the carrying out of roof brushing operations),

(f) the provision of adequate equipment and resources to effectively install or remove roadway support,

(g) the monitoring of the stability of roadways after formation and support installation,

(h) the training of employees in support design principles, support plan interpretation, placement and removal of support, understanding the need for and importance of the various support systems and recognition of indicators of change that may affect roadway stability,

(i) the recording of geological features that may affect roadway stability,

(j) the recording of roof failures that have the potential to cause injury to persons,

(k) the conducting of periodic compliance audits of the support rules at intervals not exceeding 12 months,

(l) the reviewing of the application and effectiveness of the support rules at intervals not exceeding 12 months.

(2) Any support plans prepared under support rules must clearly describe:

(a) the type of support,

(b) the dimensions of the support,

(c) the locations where there are varying types in use,

(d) the distance between supports,

(e) the maximum distance roadways can be advanced before support is installed.

(3) Support rules must contain any other information necessary to enable an employee to install support according to the rules.

(4) In this clause, "roadway" includes any bord, cutthrough, heading, pillar split or lift.

49 No entry to improperly supported places

A person must not enter a place in a mine that is not supported in accordance with the support rules (in force at the time of the provision of the support) unless the person does so for the purpose of erecting or repairing support.

50 Provision of material

No place is to be mined unless sufficient material is available for the support of the place in accordance with the support rules.

51 Additional supports

Nothing in this Part is to be construed as preventing any person from setting more supports or setting supports at more frequent intervals than is required by the support rules.

Part 3 – Transport

Division 1 – Preliminary

52 Definition

In this Part:

"transport" means:

- (a) a locomotive, or
- (b) a rubber tyred or caterpillar tracked vehicle (including a shuttle car) propelled by electrical or mechanical means and used for the purpose of transporting persons, materials, coal or stone, whether by carrying, towing or otherwise.

Division 2 – General

53 Provision for the conveyance of persons underground

Provision must be made for the conveyance of persons underground at a mine so that persons are not required to walk, in total, more than 1.5 kilometres to reach their working place.

54 Aid systems where grades excessive

The Chief Inspector may require a mine manager to install and operate a personnel transport or personnel aid system over a portion of a roadway not already provided with a transport system if the grades are considered to be excessive for walking over any part of that portion.

55 Persons being transported to obey instructions of operators

A person being transported in or about a mine must obey any reasonable directions given by the operator of the transport.

56 Objects not to be carried with passengers

Objects that may cause injury must not be carried in the same compartment as the passengers in any transport or conveyance attached to transport unless they are secured.

Division 3 – Powered winding systems

57 Definitions

In this Division:

"lift" means a lift within the meaning of *Australian Standard 1735 (Lifts, escalators and moving walks)*.

"powered winding system" includes a lift that provides access to the underground workings of a

mine.

58 Powered winding systems to be approved

A powered winding system must not be used at a mine unless it is approved.

Division 4 – Underground transport

59 Application of this Division

This Division applies to:

- (a) transport that is operated underground at a mine, and
- (b) locomotives that are operated on the surface of a mine where the surface rail system operates conjointly with the underground system.

60 Transport rules

For the purposes of section 101 (2) (a) of the Act, the following matters are prescribed as matters with respect to which transport rules must be made:

- (a) the conditions under which transport is to be used,
- (b) the ensuring of the safe operation of transport,
- (c) the minimum width and height for each length of roadway on which transport is to be used,
- (d) the measures to be taken to keep roadways clear of debris or other materials that may be impacted by transport,
- (e) the maximum loads (by reference to weight, dimensions, number or other criteria) that may be carried in or towed by transport,
- (f) the areas in which speed restrictions on transport apply,
- (g) the roadways (surface and underground) on which persons may be transported and for each length of roadway the loads that may be carried, and the type of transport that may be used,
- (h) the conditions under which a person may work on or adjacent to a roadway to be used by transport,
- (i) the parking procedures for transport,
- (j) the safe refuelling of transport.

61 General requirements

- (1) Transport must not be operated at a mine unless:
 - (a) it is designed, operated and maintained in accordance with any relevant Australian Standards and having regard to any relevant guidelines applied to the mine,
 - (b) it is approved with respect to its braking systems.
- (2) A locomotive must not be operated at a mine unless it is fitted with an operational "dead-man" control.

62 Operation of transport

- (1) A person must not operate a type of transport at a mine unless the person has been appointed by the mine manager to operate that type of transport.
- (2) A person must not operate transport at a mine unless:
 - (a) a fire extinguisher having a minimum rating of 80 B:E under any relevant Australian Standard is ready for use on it, and
 - (b) it is fitted with an audible warning device in working condition, and
 - (c) it has lights and the lights are used when it is moving, and
 - (d) it is free from any defect that may affect its safe operation.
- (3) On becoming aware of any defect in any transport or associated equipment at a mine, the operator must:
 - (a) take such action as the operator considers necessary to secure the safety of

persons directly and indirectly involved, and

(b) then, without delay, report details of the defect and the action taken to the appropriate official at the mine.

(4) The operator of diesel powered transport must not leave the engine running while the transport is stationary except:

(a) during brief halts that are part of its normal operation, or

(b) while it or its exhaust gases are being tested, or

(c) for maintenance purposes, and then only for the shortest practicable time.

(5) If an automatic methane detector fitted to transport produces an audible or visible alarm, the operator of the transport must immediately:

(a) withdraw it to an intake airway (so long as it is safe to do so), or

(b) shut it down if it cannot be withdrawn to an intake airway safely,

and report the occurrence to a mining official as soon as possible.

63 Roadways and trackworks

(1) All roadways and trackworks at a mine on which transport is to operate must be maintained to standards consistent with the safe operation of that transport.

(2) In particular:

(a) sufficient horizontal and vertical clearances are to be maintained so as to prevent a transport operator or any part of any transport, any conveyance attached to transport or any load coming into contact with the roof and sides of a roadway, and

(b) if persons are required to travel along a roadway in which transport operates, sufficient clearance between the transport, any conveyance attached to the transport or any load is to be maintained to allow it to pass safely or, if such clearance is impracticable, a means to enable persons to safely take refuge when transport passes is to be provided, and

(c) no section of trackwork to be used by a locomotive under its own power and relying on adhesion between the wheels and trackwork is to have an average gradient exceeding 1:15 over any length of 50 metres, and

(d) track transport roadways are to be sectionalised and transport movement controlled by a method of signalling to prevent collisions, and

(e) track transport roadways are to be provided with runaway protection devices.

64 Trains

In relation to a train by which persons are carried there must be provided and maintained, in addition to couplings, a means of preventing parts of the train from becoming disconnected from the train.

65 Appointment of operators

(1) A mine manager must appoint persons to operate transport at the mine.

(2) An appointment must be in writing and must designate the type of transport that the person is authorised to operate.

(3) In making appointments the manager must take into account the competency and medical fitness of the potential operators.

(4) A mine manager may make temporary appointments to enable training of operators or the operation of transport for service or repair purposes.

(5) A mine manager may, for any reason considered sufficient by the manager, revoke an appointment.

(6) A mine manager must keep a record of any revocation and the reasons for it.

66 Information and training

A mine manager must ensure that:

(a) relevant information regarding mine transport is effectively communicated to mine

- officials, employees and all persons required to operate transport at the mine, and
- (b) appropriate training is provided to all persons required to operate transport at the mine, and
 - (c) all such persons have demonstrated sufficient competencies to capably carry out the required operations in a safe manner.

67 Schemes for the examination or testing of apparatus

For the purposes of section 103 (2) of the Act, the following matters are prescribed as matters with respect to which provisions must be included in a scheme for the systematic examination or testing of apparatus:

- (a) the thorough examination and testing of all transport at a mine at intervals appropriate to the type of transport,
- (b) the adequate cleaning of all parts of transport prior to examination,
- (c) the examination of all moving parts of transport that are practicably accessible to establish that they are moving freely and without obstruction,
- (d) to the extent that they are practicably accessible, the thorough examination of all parts of the mechanical braking systems of transport, including the examination of:
 - (i) braking surfaces (pads, blocks and similar parts) to ensure that they are not excessively worn, and
 - (ii) brake actuators to ensure that they are operating satisfactorily,
- (e) the testing of all braking systems of transport by the application of the braking systems while the transport is moving,
- (f) the examination of the wheel treads of transport to ensure that they are not excessively worn.

68 Controlling hazards arising from inspecting, maintaining, repairing, refuelling and charging transport

- (1) A mine manager must ensure that adequate precautions are taken to control hazards that may arise from the inspection, maintenance, repair or refuelling of, or charging of batteries in, transport underground at a mine.
- (1A) Every place that is used for the regular repair, refuelling or charging of transport underground at a mine is a garage for the purposes of this clause.
- (2) A mine manager must ensure that every garage at the mine:
 - (a) is provided with not less than 2 means of egress, and
 - (b) is ventilated by a current of intake air sufficient to dilute and render harmless all exhaust or battery gases that may be produced by transport undergoing service, and
 - (c) is constructed of or is durably lined with non-flammable material, and
 - (d) has a smooth floor, trackwork excepted, and
 - (e) is provided with non-flammable absorbent material to mop up any spillage of fuel or oil and a fireproof receptacle to hold used absorbent material pending its removal, and
 - (f) has a fire hydrant, fire hose and 2 fire extinguishers having a minimum rating of 80 B:E under any relevant Australian Standard outside and adjacent to the entrance to the garage, which is to be located on the intake side of the ventilation circuit.
- (3) At least one garage must be equipped with an inspection pit or other suitable means for inspecting from below any transport in use at the mine.
- (4) A person who spills oil or fuel in a garage must cause it to be immediately wiped up with non-flammable absorbent material, deposited in a fireproof receptacle provided for the purpose and safely disposed of as soon as practicable.

69 Diesel fuel

- (1) Diesel fuel used at a mine must:
 - (a) conform to specified requirements, and
 - (b) be taken underground only in a safe container, and

- (c) not be kept underground at the mine unless it is:
 - (i) in a fuel tank of transport, or
 - (ii) in a safe container.
- (2) The total quantity of diesel fuel underground at any one time is not to exceed the likely total fuel consumption of transport at the mine (with normal operation) over the next 7 days.

Division 5 – Surface transport

70 Transport rules

- (1) This clause applies to transport on the surface of a mine, other than transport which is subject to rules covering underground transport.
- (2) For the purposes of section 101 (2) (a) of the Act, the following matters are prescribed as matters with respect to which transport rules must be made:
 - (a) the ensuring of the safe operation of transport at a mine (including the maintenance of traffic controls and signalling devices),
 - (b) operator appointments and training.

Part 4 – Ventilation

Division 1 – Ventilation control systems

71 Implementation of ventilation control system

- (1) A mine manager must, within 6 months after the commencement of this Regulation, ensure that a system for the provision and control of ventilation in the mine (a "**ventilation control system**") is developed and implemented.
- (2) In particular, a ventilation control system must provide for:
 - (a) the design, monitoring and control of the ventilation arrangements at the mine (including design, monitoring and control required to support gas management, spontaneous combustion management or other hazard management arrangements at the mine dependent on ventilation), and
 - (b) the supply to all accessible parts of the mine of sufficient ventilation to:
 - (i) provide air that contains by volume not less than 19 per cent oxygen, not more than 0.005 per cent carbon monoxide and not more than 1.25 per cent carbon dioxide, and
 - (ii) render harmless any flammable gases or other atmospheric contaminants (in the case of other gaseous atmospheric contaminants, the ventilation to be supplied must be sufficient to render them harmless in accordance with the *Exposure Standards for Atmospheric Contaminants in the Occupational Environment* published by the National Occupational Health and Safety Commission), and
 - (c) the maintenance of the methane concentration in the general body of air:
 - (i) at not more than 0.25 per cent by volume in an intake airway at the start of a hazardous zone, and
 - (ii) at not more than 2 per cent by volume in a hazardous zone, and
 - (d) the action to be taken if the limits referred to in paragraph (b) and (c) are found or reasonably suspected to be exceeded at a place at the mine, and
 - (e) the maintenance of return airways in an accessible condition, and
 - (f) the protection of ventilation, and
 - (g) reporting procedures related to ventilation, and
 - (h) the maintenance of ventilation records and plans, and
 - (i) the manner of sealing of parts of the mine and the precautions to be taken in sealing parts of the mine, and
 - (j) any matters required to put into effect the other provisions of this Part.
- (3) The mine manager must ensure that the mine's ventilation control system is maintained.
- (4) In developing, implementing and maintaining a ventilation control system regard must

be had to any relevant guidelines applied to the mine.

(5) A ventilation control system must include provisions for audits of the system's operation and for periodic reviews (at intervals not exceeding 2 years) of the system's effectiveness.

(6) A ventilation control system must be documented and the relevant document or documents must be kept at the mine.

72 Employees' representatives to be consulted

Employees' representatives possessing appropriate skills, knowledge or experience must be consulted regarding (and be given an opportunity to participate in) the development and revision of a mine's ventilation control system.

73 Copy to be supplied to district inspector and district check inspector

A mine manager must supply a copy of the mine's ventilation control system, and any revisions of it, to the district inspector and the district check inspector within 7 days of the system or revisions being put into effect.

74 Parts of a mine not to be worked unless sufficiently ventilated

A part of a mine must not be worked unless ventilation sufficient to meet the requirements of the mine's ventilation control system is present in that part.

Division 2 – Ventilation officers

75 Appointment and qualifications of ventilation officer

(1) A mine manager must appoint a person as ventilation officer for the mine (a "**mine ventilation officer**").

(2) Despite subclause (1), a mine manager may, with the consent of the Chief Inspector, act as the mine's ventilation officer (or carry out duties of the mine's ventilation officer) for such period as the Chief Inspector allows.

(3) A person must not be appointed or act as a mine's ventilation officer unless the person:

(a) in the case of:

(i) an appointment before 1 September 2000--holds a certificate of competency to be an under-manager, or

(ii) an appointment on or after 1 September 2000--has successfully completed the Ventilation Officer Training Course conducted by the School of Mining Engineering at the University of New South Wales (or a course specified as an equivalent course), and

(b) has an adequate knowledge of:

(i) ventilation arrangements at the mine, and

(ii) monitoring equipment and systems in use at the mine, and

(iii) emergency arrangements at the mine, and

(iv) any other information relevant to the maintenance of ventilation in the mine.

76 Duties of ventilation officer

(1) The mine ventilation officer is responsible for the day-to-day effectiveness of the mine's ventilation control system.

(2) If the mine ventilation officer (not being the mine manager) has other duties at the mine those duties must be subordinate to the duties of ventilation officer.

(3) The mine ventilation officer must take charge of and be present at any change in the ventilation system of the mine or a part of the mine that is not a change that would, in the opinion of the mine manager, be made in the normal course of working the mine.

(4) If the mine ventilation officer (not being the mine manager) is unavailable, the mine manager must perform the duties set out in subclause (3).

(5) The mine ventilation officer must ensure that all regulators at the mine are of

substantial construction and are properly maintained.

(6) The mine ventilation officer must, at least once each calendar month (but, in any case, at intervals not exceeding 35 days), ensure that the quantity of air is measured at points in the mine starting as near as is practicable:

- (a) to the seam entrance of every shaft or inlet that is an intake airway, and
- (b) at the commencement of a hazardous zone in every intake airway, and
- (c) on the intake side of a continuous mining machine that is mining coal or stone, and
- (d) on each longwall or shortwall face.

(7) The mine ventilation officer must ensure that:

- (a) if any alteration is made in the arrangements for ventilating the mine or part of the mine, or
- (b) if anything occurs that may or does substantially affect the quantity of air passing any point at which measurements are required to be taken under subclause (6),

the quantity of air is measured at the points referred to in subclause (6) as soon as any substantial effect of the alteration or occurrence is apparent.

(8) If an alteration in the arrangements for ventilating a mine affects a part of the mine in which determinations of the methane content are required to be made under this Division, the mine ventilation officer must ensure that a determination of the methane content at each place referred to in that clause is made as soon as any effect of the alteration becomes apparent.

77 Measurement of concentrations of gases in air

(1) A mine ventilation officer must, at least once each calendar month (but, in any case, at intervals not exceeding 35 days), sample the mine air (or arrange for a competent person to sample the mine air) and ensure that determinations are made of the concentrations of methane, oxygen, carbon dioxide and carbon monoxide present in that air.

(2) The samples must be taken, and the determinations made in respect of the air, at:

- (a) in the case of the measurement of concentrations of methane:
 - (i) the commencement of each hazardous zone, and
 - (ii) a point outbye in each return airway in each ventilation district, and
 - (iii) any other point that an inspector specifies in a notice served on the mine manager, and
- (b) in the case of the measurement of concentrations of oxygen, carbon dioxide or carbon monoxide--points referred to in paragraph (a) (ii) and (iii).

(3) If there is a specified method by which mine air is to be sampled or by which determinations of gas concentrations are to be made, the samples must be taken or the determinations must be made in accordance with that method.

(4) A sample of mine air required to be taken by this clause must, as far as practicable, be taken while any normal work that may affect the sample is in progress at the mine. If this is not practicable, the person taking the sample must make a written observation concerning the state of working in the relevant parts of the mine at the time.

(5) If a determination of methane concentration at the commencement of a hazardous zone shows a methane content in excess of 0.25 per cent by volume the mine manager must immediately notify the district inspector.

78 Measurements to be recorded

(1) A mine ventilation officer must without delay cause all measurements and observations required to be taken or made under this Division to be durably recorded.

(2) Such records must be kept at the mine for at least 3 years.

79 Monthly status reports

(1) A mine ventilation officer must, at least monthly, prepare a report on the status of the ventilation at the mine.

- (2) Such reports must be kept at the mine for at least 3 years.
- (3) The mine manager must read any such reports and record evidence of their having been read.

Division 3 – Regulation of ventilation

80 Regulators

- (1) A person must not adjust, alter or interfere with a regulator at a mine except with the authority of, and under the direction of, the mine manager or the mine ventilation officer.
- (2) A person altering a regulator at a mine must, before doing so, notify the deputy in charge of the part of the mine to be affected.

81 Procedure where ventilation inadequate

If the ventilation in a mine or a part of a mine ceases to be adequate, the person in charge of the affected area must:

- (a) ensure that no person gains access to that area during the time necessary to restore the ventilation, and
- (b) immediately take such measures as are available to the person to restore adequate ventilation to the affected area, and
- (c) notify the mine ventilation officer of the interruption to the ventilation, and
- (d) provide a written report to the mine manager of the measures taken to restore adequate ventilation.

82 Temperatures in a mine

A worker must not be exposed to a temperature at a mine in excess of a specified temperature except under such conditions as the Chief Inspector may allow.

83 Precautions against dangerous emissions of flammable or noxious gas

The manager of a mine containing a goaf must ensure that appropriate steps are taken for the purpose of controlling risks of dangerous emissions of flammable or noxious gas from the goaf.

84 Ventilation at commencement of hazardous zone

- (1) A mine manager must take such steps as are necessary for ensuring that the ventilation at the commencement of a hazardous zone in each production district is normally kept free from methane.
- (2) For the purposes of subclause (1), the commencement of a hazardous zone is not considered to be normally free from methane if the average percentage by volume of methane in the general body of air in the airway (found by an inspector using a methanometer in at least 2 determinations over at least 2 days) exceeds 0.25 per cent.

85 Special ventilation required at certain places

- (1) Mine ventilation must be so arranged that:
 - (a) each production district in the mine, and
 - (b) any longwall or shortwall face at the mine that is being worked,is ventilated by a separate current of air and that such air is not used to ventilate any other such place or longwall or shortwall face.
- (2) The air at a working place at a mine must be provided at an adequate velocity to prevent workers from being exposed to a concentration of dust in excess of the specified limit referred to in Part 11.
- (3) The air volume passing through each continuous miner working place must not be less than 0.3 cubic metres per second for each square metre of normal roadway cross sectional area (the normal roadway cross sectional area is to be determined by measuring from roadside to roadside, ignoring the presence of ventilation devices and not measuring at any partially or fully completed intersection).
- (4) The air volume passing through each longwall working place must not be less than 4 cubic metres per second for each metre of extracted height.

(5) The air volume in each place where a diesel engine operates must be such that a ventilating current of not less than:

- (a) 0.06 cubic metres per second for each kilowatt of maximum output capability of the engine, or
- (b) 3.5 cubic metres per second,

whichever is the greater, is directed along the airway in which the engine operates.

(6) If more than one diesel engine is being operated in the same ventilating current, the engine kilowatts must be added and the minimum ventilation requirement is 0.06 cubic metres per second per kilowatt or 3.5 cubic metres per second, whichever is the greater.

Division 4 – Mine ventilation failures

86 Failure of ventilation fans

If a mine is ventilated by more than one main ventilation fan, a failure of one or more of the fans is taken to be a failure of the main ventilation system.

87 Failure of main ventilation system

(1) A mine manager must prepare procedures to be followed in the event of failure of the main ventilation system for the purpose of ensuring the safety and, where considered necessary, the safe withdrawal of persons from underground.

(2) In particular, a mine manager must ensure that provision is made in the mine so that, in the event of a failure of the main ventilation system, the electric power supply entering the mine (other than power to equipment approved as intrinsically safe (category Ex ia)) is automatically cut off and is incapable of being restored prior to the fan or fans restarting.

88 Deputy's duties where failure of main ventilation system

(1) The deputy in charge of a part of a mine must ensure that, in the event of a failure of the main ventilation system for that part, every battery operated portable or mobile machine located in it is brought out without delay to:

- (a) the main intake airways, or
- (b) a charging or repair station of suitable fireproof construction that is normally ventilated with intake air.

(2) The deputy in charge of a part of a mine must, following a failure of the main ventilation system, ensure that the electric power supply is not restored to that part until it is safe to do so.

89 Restoration of electric power supply

The senior mining official at a mine must ensure that, following a failure of the main ventilation system for the mine, the electric power supply is not restored to any underground part of the mine until it is safe to do so.

Division 5 – Fan installations

90 Ventilation fans

Every ventilation fan installed at the surface of a mine for the purpose of ventilating the mine must be placed in such a position and under such conditions as to ensure that as far as possible it will not be damaged by an explosion in the mine.

91 Provision and maintenance of airlocks

An effective airlock must be provided and maintained at each shaft or outlet connected to the main fan or fans on the surface of a mine and used for winding, haulage or travelling.

92 Provision and maintenance of certain equipment

There must be provided and maintained at the surface of a mine in connection with every main ventilation fan:

- (a) a continuously indicating pressure gauge, and

(b) a device for continuously indicating and recording the volume of air passing through the fan.

93 Installation of monitoring system

A system must be installed and maintained to monitor the operation of the main ventilation fan or fans at a mine. The system must provide for the giving of an alarm at the surface of the mine if the fan or fans stop.

94 Auxiliary fans

An auxiliary fan used underground at a mine must be located and operated:

- (a) in such a manner as to prevent recirculation of air through the fan, and
- (b) having regard to any relevant guidelines applied to the mine.

95 Booster fans

A booster fan must not be installed or used underground at a mine unless the installation and use of the fan is approved.

Division 6 – Doors, sheets, stoppings and air crossings

96 Provision of fireproof doors

- (1) If a road which is required for the working of a mine connects a main intake airway and a main return airway in the mine, at least 2 suitable fireproof doors must be provided and maintained to minimise the leakage of air.
- (2) The doors must be spaced far enough apart so as to act as an airlock for persons or vehicles passing through.

97 Ventilating sheet and non-metallic ventilating ducting

A ventilating sheet or non-metallic ventilating ducting must not be used in a mine unless it is of material that:

- (a) does not give rise to a fire or static electric risk, and
- (b) meets any specified requirements.

98 Leakage of air through sheets or ducts to be minimised

The deputy or other official in charge of a part of a mine must ensure that sheets or ducts used to direct the ventilation in a working place in that part are erected and maintained so as to minimise any leakage of air.

99 Stoppings and air crossings

- (1) All stoppings and air crossings constructed between main intake airways and return airways in a mine must be substantial in structure, airtight (so far as is practicable), fireproof and designed to minimise damage in an explosion.
- (2) Stoppings and air crossings between split intakes and return airways in a mine must be reasonably airtight and fireproof and be of substantial structure up to the commencement of any hazardous zone.
- (3) A stopping constructed for the purpose of sealing off a part of a mine must be substantial in structure, airtight and designed to resist damage in the event of an explosion. Provision to allow sampling of the atmosphere in the sealed off area must be made.

Division 7 – Conditions of danger

100 Procedure where dangerous conditions exist by reason of the presence of flammable or noxious gases

- (1) A person (not being a mining official) who finds or suspects that an accessible place at a mine is dangerous by reason of the presence of flammable or noxious gases must notify a mining official of the danger.
- (2) A mining official notified of such a dangerous place must, as soon as practicable, and as far as safely possible, inspect the place.

- (3) A mining official who finds or becomes aware that a place at the mine is dangerous by reason of the presence of flammable or noxious gases must:
- (a) immediately remove other persons from the place and take such steps as are available to the official to eliminate the danger, and
 - (b) as soon as practicable, report the danger, and the steps taken to eliminate it, to the mine manager.
- (4) If the danger has not been eliminated the mine manager must take all reasonably practicable steps to ensure that it is eliminated.
- (5) A mining official must ensure that an accurate and durable record of any report made under subclause (3) (b) is made before the end of the relevant shift.
- (6) Such records must be kept at the mine for at least 6 years.
- (7) For the purpose of this clause, a place is taken to be dangerous by reason of the presence of flammable gases if the percentage of flammable gases in the general body of air in that place is found to be 2 per cent or more.

101 Procedure where other dangerous conditions exist

A person (not being a mining official) who causes, or becomes aware of, any obstruction in or interference with the ventilation or any stagnation of, or impurity in, the air in a place at a mine must:

- (a) within the scope of the person's duties, immediately remedy it, and
- (b) if the remedy is not within the scope of the person's duties, immediately inform a mining official, and
- (c) within the person's capability, ensure that work at the place ceases.

Part 5 – Emergency provisions

102 Implementation of underground emergency systems

- (1) A system to provide general emergency procedures for the underground parts of a mine (an "**underground emergency system**") must, within 6 months after the commencement of this Regulation, be developed and implemented at the mine.
- (2) For this purpose, a mine manager must identify emergencies that may occur at the mine and which could pose a risk to the safety or health of persons.
- (3) An underground emergency system must adequately address, but is not limited to, the following matters:
- (a) the actions and procedures to be taken by persons who discover a fire at the mine,
 - (b) the escape or evacuation of persons from areas affected by emergencies,
 - (c) the treatment and transport of injured persons,
 - (d) the procedures to be adopted when emergency services external to the mine are required.
- (4) An underground emergency system must include, as minimum requirements, provision for:
- (a) at least 2 means of egress from each production district or other part of the mine to the surface of the mine so that, in the event of any roadway becoming impassable, another is always available for travel, and
 - (b) the effective communication to all persons required to work or travel underground of the paths of egress from each part of the mine, and
 - (c) a means by which persons who may need to use paths of egress are made familiar with them, and
 - (d) the marking of paths of egress so that persons who are not familiar with a route can safely travel it in conditions of poor visibility, and
 - (e) sufficient types and numbers of transport or alternate escape means, in combination with escape equipment, to allow the safe evacuation of persons, and

- (f) a competent person to be on duty on the surface of the mine whenever anyone is underground, with effective means of communication to persons underground, and
- (g) the rapid and effective sealing of the mine (while at the same time allowing for re-entry to the mine), and
- (h) regular testing as to the effectiveness of the system.

(5) In developing and implementing an underground emergency system regard must be had to any relevant guidelines applied to the mine.

(6) An underground emergency system must include provisions for periodic reviews (at intervals not exceeding 2 years) of the system's effectiveness.

(7) An underground emergency system must be documented and the relevant document or documents must be kept at the mine.

103 Employees' representatives to be consulted

Employees' representatives possessing appropriate skills, knowledge or experience must be consulted regarding (and be given an opportunity to participate in) the development and revisions of a mine's underground emergency system.

104 Copy to be supplied to district inspector and district check inspector

A mine manager must supply a copy of the mine's underground emergency system, and any revisions of it, to the district inspector and the district check inspector within 7 days of the system or revisions being put into effect.

105 Competency and training of personnel

Persons must not be appointed to perform duties as part of a mine's underground emergency system unless they are competent to carry out those duties and are given appropriate training.

106 Escape equipment and self rescuers

(1) Sufficient escape equipment (including adequately maintained approved types of self rescuers) must be provided at a mine to allow safe egress of persons from the mine through conditions of reduced visibility and any irrespirable or irritant atmospheres that may be encountered.

(2) In providing and maintaining self rescuers regard must be had to any relevant guidelines applied to the mine.

(3) A person who is underground at a mine must at all times have attached to him or her an approved type of self rescuer.

107 Egress plans

(1) A mine manager must cause to be displayed, in a prominent and secure position on the surface of the mine, a plan of the mine to a scale of not less than 1:10 000 showing the main roads, the means of egress from each part of the mine to the surface and the telephone stations underground at the mine.

(2) A mine manager must:

(a) cause the plan to be updated at least once every 3 months, and

(b) so often as it becomes outdated, defaced or destroyed, cause it to be replaced.

Part 6 – Fire control

Division 1 – Fire officers and fire brigades

108 Appointment of fire officers

(1) A mine manager must appoint a fire officer for the mine and such number of assistants as, in the opinion of the manager, may be necessary.

(2) A person must not be appointed as a fire officer for more than one mine except with the permission of the Chief Inspector.

(3) A person must not be appointed as a fire officer for a mine unless the person:

(a) has undergone appropriate training in firefighting, and

(b) is familiar in the use of mine plans and the workings of the mine.

109 Duties of fire officers

The fire officer for a mine, in addition to any other duties imposed by this Part, must:

- (a) ensure that at intervals not exceeding one month all firefighting equipment required to be maintained under this Part is inspected and a record of the condition of the equipment is made in a book kept at the mine for the purpose, and
- (b) arrange for the repair and maintenance of firefighting equipment required to be provided under this Part, including arranging for:
 - (i) the service and maintenance of all fire extinguishers in accordance with *Australian Standard 1851, Part 1 (Portable fire extinguishers and fire blankets)*, and
 - (ii) the maintenance of all fire hoses in accordance with *Australian Standard 1851, Part 9 (Delivery layflat fire hose)*, and
- (c) investigate any complaint or report made to the fire officer concerning the condition of any firefighting equipment, and
- (d) ensure that any defective firefighting equipment found by, or reported to, the fire officer is replaced immediately or, if the fire officer cannot immediately replace it, report the matter to the mine manager, and
- (e) arrange for the training of fire brigades established by the mine manager under this Division, and
- (f) ensure that suitable containers filled with stone dust or clean dry sand are provided and maintained at intervals not exceeding 100 metres along any belt conveyor at the mine, and
- (g) except where otherwise required by this Part, ensure that suitable firefighting equipment is provided:
 - (i) in or near each building on the surface at the mine, and
 - (ii) at each place at the mine in which flammable material is stored, and
 - (iii) in every engine room or motor room at the mine, and
 - (iv) at the entrance of every shaft or means of access to the mine, and
- (h) ensure that the locations of the fire station and each fire substation and fire depot at the mine are clearly marked with signs indicating the nature of the installation, and
- (i) ensure that if firefighting equipment is not located in a fire station, fire substation or fire depot at the mine, the location of the equipment is clearly marked with a sign indicating the nature of the equipment, and
- (j) ensure that each fire hydrant at the mine is clearly marked.

110 Establishment of fire brigades

- (1) An appropriate number of fire brigades must be established at a mine.
- (2) The mine manager must ensure that the members of a fire brigade:
 - (a) undergo appropriate training in firefighting, and
 - (b) are instructed in the use of mine plans and become familiar with the workings of the mine.

111 Fire brigades to practise periodically

A mine manager must require fire brigades at the mine to carry out firefighting practices at least once in every 2 months.

112 Conformity of fittings on firefighting equipment

The fittings on any firefighting equipment in use at a mine must be capable of being connected to fittings used by the New South Wales Fire Brigades.

Division 2 – Fire station, substations and depots

113 Establishment of a fire station at a mine

- (1) A fire station must be established in close proximity to the main entrance to the

downcast shaft or other inlet to a mine so as to enable the ready dispatch of firefighting equipment underground.

- (2) The fire station must be equipped with the following minimum firefighting equipment:
- (a) 150 metres of 60 millimetre diameter fire hose fitted with suitable male and female couplings,
 - (b) 150 metres of 35 millimetre diameter fire hose fitted with suitable male and female couplings,
 - (c) three 30 metre lengths of 20 or 25 millimetre diameter high pressure fire hose fitted with the necessary appropriate couplings and suitable nozzles,
 - (d) 3 breeching pieces fitted with manually operated cut off valves,
 - (e) 4 jet nozzles,
 - (f) 2 combination fog jet nozzles,
 - (g) 4 fire extinguishers having a minimum rating of 80 B:E under any relevant Australian Standard,
 - (h) 2 complete sets of shiftman's tools, each consisting of at least a shovel, an axe, a saw, a pick and a hammer,
 - (i) sufficient spare fittings and pipe tools to be used in case of an emergency,
 - (j) a copy of the firefighting plans for the mine,
 - (k) 200 litres of high expansion foam-making compound,
 - (l) a foam-making generator,
 - (m) 4 branch pipes,
 - (n) 2 hydrant spanners,
 - (o) 4 combination 65 millimetre--38 millimetre hose coupling spanners.

114 Establishment of fire substations at a mine

(1) If a working place at a mine is more than 3 kilometres travelling distance from the mine fire station, fire substations must be established so that there is a substation within 3 kilometres travelling distance of any working face at the mine.

(2) Each fire substation must be equipped with the following minimum firefighting equipment:

- (a) 150 metres of fire hose fitted with suitable male and female couplings,
- (b) 2 breeching pieces fitted with manually operated cut off valves,
- (c) 3 branch pipes,
- (d) 2 jet nozzles,
- (e) 2 combination fog jet nozzles,
- (f) two 30 metre lengths of 20 millimetre or 25 millimetre high pressure fire hose fitted with suitable couplings and spray jet nozzles,
- (g) spare fittings and pipe tools,
- (h) 65 litres of foam-making compound,
- (i) a foam-making branch applicator,
- (j) 2 fire extinguishers having a minimum rating of 80 B:E under any relevant Australian Standard,
- (k) if a notice has been served on the mine manager by the Chief Inspector requiring their provision:
 - (i) a foam-making generator, and
 - (ii) 200 litres of high expansion foam-making compound.

115 Establishment of fire depots at a mine

(1) Fire depots must be established:

- (a) at intervals of not more than 500 metres on roadways where belt conveyors are installed, and
- (b) at locations which are approximately 25 metres on the intake side of:
 - (i) engine rooms or motor rooms, and
 - (ii) places in which flammable material is stored, and

- (iii) belt conveyor drivehead loading points and transfer points, and
 - (iv) switchrooms and electric substations, and
 - (v) underground workshops and charging stations, and
 - (vi) filling stations, and
- (c) at the seam entrance to each shaft or other means of access to the mine that is in use, and
- (d) at the end of each water supply main.
- (2) If any two or more of the locations referred to in subclause (1) are in close proximity to one another, the establishment of one fire depot will suffice.
- (3) Each fire depot must be equipped with the following minimum firefighting equipment:
- (a) at least 90 metres of fire hose and appropriate fittings or, if the depot is at or the nearest depot to a working face, sufficient hose and fittings to allow a fire at the face to be effectively fought,
 - (b) one 1 into 2 breeching piece fitted with a manually operated cut off valve,
 - (c) 2 branch pipes with jet nozzles,
 - (d) 1 diffuser,
 - (e) one 65 millimetre to 38 millimetre adaptor,
 - (f) 2 fire extinguishers having a minimum rating of 80 B:E under any relevant Australian Standard,
 - (g) 1 hydrant spanner,
 - (h) 2 combination 65 millimetre--38 millimetre hose coupling spanners.

115A Protection of belt conveyors

Sufficient fire hose and appropriate fittings must be available to fight a fire on any part of a belt conveyor.

Division 3 – Water supply system, rules and plans

116 Requirements of firefighting water supply system

- (1) The firefighting water supply system at a mine must be connected to a permanent source of water supply capable of delivering to the system not less than 200 000 litres of water at 35 litres per second.
- (2) If no permanent source of water supply is available or the available permanent supply is unable to supply 200 000 litres of water at 35 litres per second, the firefighting water supply system at a mine must be connected to a surface reservoir or tank containing not less than 200 000 litres.
- (3) The firefighting water supply system at a mine must:
- (a) be maintained to a point not more than 200 metres from the working faces of the mine, and
 - (b) be capable of delivering not less than 7 litres of water per second at a flow pressure of not less than 700 kilopascals in the system without a need to manually start pumps or open valves other than the hydrant, and
 - (c) consist of steel pipes of a diameter of not less than 100 millimetres in main roadways and not less than 75 millimetres in panel roadways, and
 - (d) include reducing valves or some other method of controlling the water pressure so that the flow pressure at a hydrant does not exceed 1 700 kilopascals, and
 - (e) be sectionalised so that each section is capable of having pipes inserted or removed, and
 - (f) have test points placed along the reticulation system commencing from the surface of the mine or the shaft bottom and thereafter at intervals of approximately 30 metres of vertical depth, with each test point being provided with a means for using a pressure gauge and a flow test meter, and
 - (g) have hydrants with waterways at least 60 millimetres in diameter and threads of the New South Wales Fire Brigades pattern or other equivalent fitting fitted at:

- (i) intervals along the water supply system not exceeding 100 metres, and
- (ii) every place at which a fire depot is required to be established under this Regulation, and

(h) have fitted for fire-fighting and other purposes, at suitable intervals so that the entire length of belt conveyor roadways and transport roadways can be covered, 25 millimetre outlet valves with appropriate fittings permanently attached for use with 20 millimetre or 25 millimetre internal diameter hose.

117 Firefighting plans to be prepared

- (1) Plans must be prepared and kept at a mine showing:
 - (a) the positions in which pipe mains, hydrants, isolation valves, valves, fire substations and fire depots are situated, and
 - (b) the positions of stoppings, trap doors, isolation doors, prepared sealing locations, overcasts, air crossings, ventilation doors, regulators, belt conveyors, main electric supply cables, fixed electrical apparatus and telephones, and
 - (c) the direction of ventilation in the roadways.
- (2) The plans must be prepared to a scale of not less than 1:10 000 and be kept up to date to within one month.

Part 7 – Controlled materials

Division 1 – Prohibition of smoking materials

118 Definitions

In this Division:

"mechanical lighter" means a mechanical, chemical or electrical contrivance designed or adapted primarily for the purpose of igniting smoking material.

"smoking material" includes any smoking tobacco or other substance capable of being used for smoking, any pipe, cigarette or cigar and any other contrivance designed or adapted for smoking tobacco or any other substance.

119 Smoking material not to be taken underground or into designated areas

- (1) A person must not take any smoking material or any match or mechanical lighter into, or have in the person's possession in:
 - (a) an underground part of a mine, or
 - (b) an area on the surface of a mine, being an area designated in a scheme prepared under subclause (2).
- (2) A mine manager must prepare a scheme for:
 - (a) designating areas on the surface of the mine as areas into which persons must not take any smoking material or any match or mechanical lighter, and
 - (b) carrying out the searches provided for in this Division.
- (3) For the purposes of section 104 of the Act, a subject-matter referred to in subclause (2) in respect of which a mine manager is required to prepare a scheme is a prescribed subject-matter.

120 Searching for, and confiscation of, smoking material

- (1) A mine manager may cause any person, or any article in a person's possession, located either:
 - (a) underground at the mine, or
 - (b) in an area on the surface of the mine designated in a scheme,to be searched for the purpose of ascertaining whether that person has any smoking material or any match or mechanical lighter.
- (2) A person must not, under this clause, search any other person unless:
 - (a) the firstmentioned person has first given 2 other persons an opportunity to

search himself or herself, and

(b) if searched by them, has been found not to have any smoking material or any match or mechanical lighter.

(3) Without prejudice to any proceedings against a person for an offence, any smoking material or any match or mechanical lighter which is found on a search may be confiscated by the person making the search and dealt with in such manner as may be directed by the mine manager.

121 Refusal to be searched

(1) A person must not refuse to be searched or refuse to allow an article in that person's possession to be searched in accordance with this Division.

(2) Without prejudice to any proceedings against a person for an offence under subclause (1), a person offending against that subclause may be directed by the person who attempted the search:

(a) not to go underground at the mine at that time, or

(b) if the offence occurs when the person is underground at the mine, to return to the surface of the mine at that time.

(3) A person must not disobey such a direction.

Division 2 – Use or storage of certain materials underground

122 Prohibition on use of aluminium and light metal alloys

(1) A mine manager must ensure that any specified aluminium or light metal alloys are not used on the external parts of any machinery, equipment or other item underground at the mine.

(2) However, specified aluminium or light metal alloys may be used if the Chief Inspector determines that there is no reasonable alternative and the use is approved.

123 Storage and location of flammable material

(1) A mine manager must ensure that highly flammable material is not stored underground at the mine except in a fireproof room, compartment or box.

(2) A mine manager must ensure that any building or structure on the top of a shaft or outlet at the mine is not made of, or does not comprise, flammable material likely to cause danger from fire to any person at the mine.

(3) In this clause: "**flammable material**" means any material having a flash point less than 61°C. "**flash point**", in relation to any material, means the lowest temperature at which the material, when tested in a specified manner, liberates a vapour at a rate sufficient to produce an explosive mixture with the air that is in immediate contact with the material. "**highly flammable material**" means any material having a flash point less than or equal to 23°C.

124 Flammable liquid storage

If grease or lubricating or hydraulic oil or fluid is stored or held underground at a mine in a container having a capacity of more than 60 litres:

(a) adequate provision must be made to minimise spillage, and

(b) adequate provision must be made for the collection of spilled oil in trenches, trays or pits filled with dry sand or some other non-inflammable, absorbent material, and

(c) spillage must be removed as frequently as is necessary to keep the area in which the oil is stored or held free from spillage, and in any case not less often than once in each week, and

(d) fixed machinery, blow lamps, electric or oxy-acetylene welding or cutting apparatus, flame torches or portable electric tools must not be operated within 10 metres of the grease or lubricating or hydraulic oil or fluid, and

(e) a fire extinguisher of an appropriate type and capacity to deal with an oil fire must be provided nearby so as to be readily accessible.

125 Fire resistant fluids

A mine mechanical engineer must ensure that all hydraulic oil or fluid used underground at the mine for the following purposes is of a fire resistant type:

- (a) hydraulic braking systems of vehicles where the friction surfaces are designed to operate in a dry state,
- (b) fluid couplings and hydraulic torque converters except where designed to operate integrally with an oil filled gearbox,
- (c) hydraulic self-advancing roof supports used in connection with longwall or shortwall faces,
- (d) any other specified purpose.

Part 8 – Monitoring and detecting equipment

126 Provision of air monitoring equipment

(1) Sufficient air monitoring equipment of appropriate types must be provided to persons at a mine, or be installed and maintained at a mine, to enable the monitoring of the working environments so that any dangers to the safety or health of persons may be detected.

(2) In particular:

- (a) a recording barometer must be provided at the surface of the mine, and
- (b) mining officials must be provided with, and carry at all times while underground:
 - (i) an approved methanometer and an approved device for indicating a deficiency of oxygen, or
 - (ii) a single approved device for determining methane concentration and indicating a deficiency of oxygen.

127 Certain transport to be provided with automatic methane detectors

A mine manager must ensure that any diesel or battery powered transport that operates in a return airway in the mine is, whenever it is located in the return airway, equipped with an approved automatic methane detector set to alarm when the methane content in the air reaches one per cent.

128 Continuous mining machine to be equipped with automatic methane monitor

(1) The Chief Inspector may by notice in writing addressed to a mine manager require that any continuous mining machine in use in the mine be equipped with an approved automatic methane monitor.

(2) A monitor installed on a continuous mining machine in accordance with subclause (1) must:

- (a) have its detection head placed on the machine in such a position as to maximise the likelihood of detecting methane while allowing an accurate reading, and
- (b) be capable of giving an audible or visible signal when the methane concentration at the detection head reaches one per cent by volume, and
- (c) be capable of tripping off the electric power supply to the machine when the methane concentration at the detection head reaches two per cent by volume.

129 Automatic methane monitor to be installed on longwall working

(1) An approved automatic methane monitor must be installed on the return side of every longwall working at a mine.

(2) A monitor installed in accordance with subclause (1) must:

- (a) have its detection head placed in such a position as to maximise the likelihood of detecting methane while allowing an accurate reading, and
- (b) be capable of tripping off the electric power supply to the longwall face when the methane concentration at the detection head reaches 1.25 per cent by volume.

130 Installation and use of automatic methane monitors

A mine manager must comply with any specified requirements for the installation and use of approved automatic methane monitors with regard to:

- (a) the positioning of detection heads, and
- (b) the location, visibility and clarity of displayed values of methane concentrations or visible signals, and
- (c) the capture, storage, retrieval and dissemination of information relating to methane concentrations detected, and
- (d) the recording of the events causing a monitor to give a visible signal or trip off electric power.

131 Gas content of air to be monitored and recorded

- (1) A mine manager must ensure that the methane, oxygen and carbon monoxide content (the "**gas content**") of the return air at the following locations are continuously monitored and recorded:
 - (a) at or near all upcast shafts,
 - (b) outbye ventilation splits and unsealed goafs and waste workings.
- (2) The manager must determine whether there is a need, for safety reasons, to continuously monitor and record the gas content of the air at any other locations and, if so, ensure that the gas content of the air at those locations is also continuously monitored and recorded.
- (3) The manager must, in respect of each type of gas, determine a gas concentration level at which it is advisable, for safety reasons, to activate an alarm. In determining a gas concentration level, the manager must take into account the time that it would take to initiate appropriate action in response to an alarm.
- (4) The manager must ensure that alarms are established for locations where gases are required to be monitored and that those alarms are set to be activated at the predetermined gas concentration levels.
- (5) The Chief Inspector may direct that, in respect of a particular mine or of mines generally, carbon dioxide be included in the gases referred to in subclause (1). If such a direction is given, this clause applies accordingly.

132 Gas monitoring systems

- (1) A mine manager must, within 6 months after the commencement of this Regulation, develop and implement a gas monitoring system for the mine.
- (2) A gas monitoring system must set out the steps taken by the manager to comply with the requirements of this Regulation regarding the monitoring and recording of the gas content of air at the mine.
- (3) Without limiting subclause (2), a gas monitoring system must:
 - (a) specify the locations at which the gas content of air is to be monitored, and
 - (b) specify in respect of each type of gas the gas concentration level at which alarms will be activated, and
 - (c) define who is authorised to set or change alarm levels, and
 - (d) specify how those alarm settings or changes are to be recorded, and
 - (e) define who is responsible for the acknowledgment of alarms and the recording of acknowledgments, and
 - (f) define who is responsible for communicating the occurrence of alarms and initiating action as a result of alarms, and
 - (g) set out response plans to be activated as a result of alarms, and
 - (h) specify how the actions of persons responding to an alarm (and the identities of those persons) are to be recorded.
- (4) A gas monitoring system must be documented and the relevant document or documents must be kept at the mine.

Part 9 – Electrical equipment

133 Definitions

(1) In this Part: "**electrical apparatus**" means any electrical equipment other than a cable. "**electrical equipment**" means any equipment, appliance, machine, fitting or cable in which conductors are used to transmit and utilise electricity. "**electrical protection**" means a relay or apparatus whose function is to detect defects or conditions of an abnormal or dangerous nature in any electrical circuit, apparatus or power system and to initiate appropriate control circuit action. "**energised**", in relation to an electrical conductor, means connected to a source of potential difference or charged so as to have a potential significantly different from that of earth. "**explosion protected**", in relation to any circuit or electrical apparatus, means safeguarded, by approved means, so as to prevent the ignition of flammable vapours or gases in air external to the circuit or apparatus. "**fixed cable**" means a cable consisting of a single conductor or a combination of conductors insulated from one another and that is not designed to afford relative motion between its terminal points while it is energised. "**flexible cable**" means a cable consisting of a stranded conductor or a combination of conductors insulated from one another and that is designed to afford relative motion between its terminal points while it is energised. "**mains**" means conductors or cables connecting mains switch-gear with an electrical power distribution or load centre. "**mains switch-gear**" means power circuit switching or interrupting devices in combination with associated control, instrumentation, metering, protective and regulating devices, or assemblies of any such devices, and associated inter-connections, accessories and supporting structures, used primarily in the transmission, distribution and conversion of electric power. "**methane concentration**", in relation to a place in a mine, means the proportion (by volume) of methane in the general body of air in that place. "**mobile electrical apparatus**" means electrical apparatus (not being portable electrical apparatus) capable of being readily moved about while it is carrying out its function. "**portable electrical apparatus**" means electrical apparatus capable of being carried manually while it is being used but does not include a caplamp.

(2) For the purposes of this Part, the methane concentration in a place at a mine is taken to be dangerous if it is at or above 1.25 per cent.

134 System to regulate the use of portable electrical apparatus

- (1) A mine manager must, within 6 months after the commencement of this Regulation, develop and implement a system to regulate the use of portable electrical apparatus at the mine.
- (2) In developing the system, the likelihood of sudden contamination by flammable gas from such sources as goaf falls must be taken into account.
- (3) The system must include provisions ensuring the exclusion of non-explosion protected portable electrical apparatus from hazardous zones unless:
- (a) the apparatus does not produce incendive arcs in normal operation, and
 - (b) the apparatus does not have any components that can exceed a surface temperature of 150°C in normal operation, and
 - (c) the apparatus is suitable for its duty, and
 - (d) the apparatus is suitable for the work environment, and
 - (e) the level of methane in the general body of air within all safely accessible places within 20 metres of the apparatus is maintained at less than 0.5 per cent.
- (4) The system must be documented and the relevant document or documents must be kept at the mine.

135 Procedure if gas detected

- (1) A person who finds or reasonably suspects that there is a dangerous methane concentration in a place at a mine must immediately:
- (a) consistent with any procedures for removal and restoration of power implemented at the mine, cause the supply of electricity to be cut off from all mains-fed electrical apparatus in that place and all places in the ventilation district on the return side of that place (other than such apparatus as has been approved as

intrinsically safe (category Ex ia)), and

(b) cause any battery-powered electrical apparatus in that place and all places in the ventilation district on the return side of that place that has not been approved as intrinsically safe (category Ex ia), other than an approved item of personal apparel, to be removed to a main intake airway.

(2) If the normal duties of the person do not include the taking of the measures required to be taken, the person is taken to have sufficiently complied with subclause (1) if the person immediately reports the matter to an official of the mine or a person whose normal duties include the taking of those measures.

(3) If action has been taken to cut off the supply of electricity to mains-fed electrical apparatus at, or to remove any battery-powered electrical apparatus from, a place under subclause (1):

(a) the supply of electricity must not be restored to mains-fed electrical apparatus at the place, and

(b) a person must not bring any battery-powered electrical apparatus into the place, until the official in charge of that part of the mine, being satisfied that the methane concentration in the place is not dangerous, so directs.

(4) In this clause: "**main intake airway**" means a part of a mine that, by virtue of its location in the ventilating air circuit, is independently connected to air from the surface of the mine and is on the intake air side of any hazardous zone.

136 Checking for methane before introduction of power into a mine

Power must not be introduced into a mine or a section of a mine after a lapse of 4 hours since power was last supplied to the mine or section unless:

(a) the mine or section has been inspected for the presence of methane in the 4 hours immediately preceding the introduction of the power, and

(b) the methane concentration has been found not to be dangerous.

137 Provision for cutting off power

(1) The mine electrical engineer at a mine at which electrical equipment supplied from the mains is installed underground must provide at the surface of the mine suitable switch-gear for cutting off the supply of electricity to the equipment.

(2) A mine manager must ensure that there is an effective means of switching off the supply of electricity from every flexible cable at the apparatus by which the flexible cable is connected to a fixed cable.

138 Separate power supply in sections of mine

(1) A mine electrical engineer must divide the power supply system in underground parts of the mine into sections.

(2) The mine electrical engineer must equip each section with some means of preventing the power supply system within it from being automatically energised when the power is turned on from the surface of the mine.

139 Explosion protection

(1) Only electrical apparatus of a type approved as explosion protected may be energised with electricity in a hazardous zone at a mine.

(2) Only electrical apparatus of a type approved as intrinsically safe may be energised with electricity in a part of a mine in which the methane concentration is dangerous.

(3) A mine electrical engineer must ensure that:

(a) any electrical equipment located in areas at the mine where there is coal dust is adequately safeguarded against the ingress and ignition of coal dust, and

(b) any electrical explosion protected apparatus used at the mine is designed, installed, commissioned, operated, maintained and decommissioned in a way that ensures the risk of internal electrical faults compromising the explosion protected properties of the apparatus is minimised, and

- (c) any cable on the secondary side of a transformer used at the mine to supply apparatus required by this Regulation to be approved as explosion protected is constructed so as to prevent sparking in the earth conductors (as a result of electrical induction) from igniting gas, and
 - (d) only telephonic communication systems of a type approved as intrinsically safe (category Ex ia) are used underground at the mine.
- (4) A person must not, in a hazardous zone, do any work on explosion protected electrical equipment while it is energised if the doing of the work will cause the equipment not to be explosion protected.
- (5) Subclause (1) does not apply to:
- (a) an approved caplamp, or
 - (b) portable electrical apparatus.
- (6) Subclause (3) (c) does not apply to a cable that:
- (a) has a maximum current rating below 20 amperes, or
 - (b) is used on an alternating current system at a voltage not exceeding 250 volts.

140 Requirements for electrical apparatus

- (1) Explosion protected electrical apparatus must not be used in a hazardous zone at a mine unless it is of an approved type.
- (2) A mine electrical engineer must ensure that mobile electrical apparatus that does not comply with *AS/NZS 4871.1:2002, Electrical equipment for coal mines for use underground--General Requirements, AS/NZS 4871.1:2002, Electrical equipment for coal mines for use underground, Part 4: Mains powered electrical mobile machines* or *AS/NZS 4871.1:2002, Electrical equipment for coal mines, for use underground, Part 5: Battery powered electrical mobile machines* is not used underground at the mine.
- (3) A mine electrical engineer must ensure that electrical apparatus that does not comply with *Australian Standard 2081 (Electrical equipment for coal and shale mines--Electrical protection devices)* is not used for the purpose of providing electrical protection for earth leakage, earth continuity or earth fault lockout underground at the mine.

141 Requirements for electric cables

- (1) Reeling and trailing electric cables must not be used underground at a mine unless they comply with *Australian Standard 1802 (Electric cables--Reeling and trailing--For underground coal mining purposes)*.
- (2) A mine electrical engineer must ensure that other electric cables are not used underground at a mine unless they comply with *Australian Standard 1972 (Electric cables--Underground coal mines--Other than reeling and trailing)*.
- (3) This clause does not apply to or in respect of electric cables used solely for intrinsically safe circuits.

142 Earthing of electrical equipment

- (1) A mine electrical engineer must ensure that all mains-fed electrical equipment at the mine is referenced to, and all conductive parts of that equipment (other than active conductors) is connected to, the general mass of earth in such a way that:
- (a) the values of voltage and current and their duration are not dangerous, and
 - (b) the thermal effects of currents flowing in conductive parts do not cause danger arising from fires, fumes, arcing, explosions or the unintended operation of the equipment.
- (2) In particular, the mine electrical engineer must ensure that for all mains-fed electrical equipment underground at the mine:
- (a) any reference to earth is by way of some form of earth fault current limiting device, and
 - (b) if the operating voltage of the equipment is less than 4 000 volts, the earth fault current is limited to 5 amperes.
- (3) This clause does not apply to or in respect of:

- (a) electrical systems and apparatus approved as intrinsically safe, or
- (b) electrical circuits operating at extra low voltage, or
- (c) a circuit that is confined wholly in a single enclosure, or
- (d) the outgoing circuit of a welding machine.

143 Protection against earth fault

Electrical protection must be provided to prevent the establishment of electric supply to explosion protected mobile or portable electrical apparatus at a mine in the event of an earth fault on the flexible cable supplying the apparatus.

144 Transformers

- (1) Means of containing fluid that may escape from any fluid filled transformer underground at a mine must be provided unless:
 - (a) the fluid is non-flammable, or
 - (b) an automatic system of fire protection is provided at the transformer.
- (2) Any such means of containment must be adequate for the fluid capacity of the transformer.

145 Batteries

- (1) This clause does not apply to a battery approved as being intrinsically safe and applies only in respect of transport used underground.
- (2) A mine electrical engineer must ensure that any battery used on transport underground at the mine is designed and maintained to minimise the risk of arcing and electrical leakage to the battery earth.
- (3) Without affecting the generality of subclause (2), a mine electrical engineer must ensure that:
 - (a) any battery or battery container used on transport in a hazardous zone underground at the mine complies with the requirements of *AS/NZS 4871.1:2002, Electrical equipment for coal mines, for use underground, Part 5: Battery powered electrical mobile machines*, and
 - (b) the container of every battery on transport is lined inside with a layer of insulating material and all material used within the container (including the battery enclosure) is non-flammable, and
 - (c) there is no movement of any battery within its container and every battery container has been designed and is maintained to dissipate expeditiously any hydrogen that may be given off by the battery.
- (4) A battery used on transport at a mine must not be changed or charged underground otherwise than at a garage equipped for the purpose (this subclause does not apply to the charging of a battery by regeneration).
- (5) Each garage used for battery charging at a mine must be designed, used and maintained to minimise risk to the mine from fire and the generation of dangerous gases.
- (6) A notice must be exhibited at the entrance to each place underground at a mine used for battery-charging prohibiting the taking of an oil flame safety lamp into the place.

146 Facilities for maintenance

- (1) A mine electrical engineer must ensure that repairs on any trailing, reeling or feeder cable (as defined in *AS 1747-1993, Reeling, trailing and feeder cables used for mining--Repair and testing*) used in a hazardous zone at the mine are carried out at a workshop that has been approved for the purpose.
- (2) A person must not perform work on any explosion protected electrical apparatus at a mine (being work that may alter the explosion protected properties of the apparatus) otherwise than through facilities that are approved for the purpose.

147 Means of communication

A mine must be provided with a telephone system (or other means of transmitting speech both ways) between the surface and the following locations:

- (a) every underground entrance to a shaft or outlet used for providing means of ingress and egress to persons employed at the mine,
- (b) every underground garage,
- (c) every underground deputy's station,
- (d) a place in proximity to underground switch-gear used for the purpose of isolating sections of the main underground electricity distribution system,
- (e) a place in proximity to every underground conveyor belt drive head and transfer or loading point.

Part 10 – Shotfiring and explosives

Division 1 – Preliminary

148 Definitions

In this Part:

"**explosive**" includes detonators.

"**shotfirer**" means a person appointed as a shotfirer in accordance with this Part.

Division 2 – Shotfiring

149 Electric shotfiring apparatus

A person must not fire a shot or round of shots at a mine except by means of electric shotfiring apparatus of a type approved for the purpose.

150 Appointment of shotfirers

- (1) A person must not fire a shot at a mine unless the person has been appointed by the mine manager in writing to be a shotfirer at the mine.
- (2) A person must not be appointed as a shotfirer at a mine unless the person:
 - (a) is qualified to be appointed as a deputy, and
 - (b) has undergone an appropriate course in shotfiring at underground coal mines.
- (3) A mine manager must be satisfied that a person appointed as a shotfirer is competent and medically fit to carry out a shotfirer's duties.
- (4) If a person returns to shotfiring duties after a break of more than 3 years the mine manager must arrange appropriate retraining.

151 Firing of shots by trainee

A person who is not a shotfirer may fire a shot or shots at a mine in the course of the person's training if the person is authorised in writing by the mine manager to do so and is under the immediate supervision of a shotfirer.

152 Shotfirer to be employed by mine owner

A person must not fire shots at a mine unless the person is employed and paid by the mine owner.

153 Other persons may perform certain shotfiring functions under supervision

A person other than a shotfirer or trainee shotfirer may insert any part of a charge (except a primer cartridge) in a shothole if working under the immediate supervision of a shotfirer.

Division 3 – Shotfiring and explosives systems

154 Implementation of shotfiring and explosives systems

- (1) A system to control the conduct of shotfiring and the handling of explosives (a "**shotfiring and explosives system**") must, within 6 months after the commencement of this Regulation, be developed and implemented at a mine.
- (2) In developing a shotfiring and explosives system regard must be had to any relevant

guidelines applied to the mine.

(3) A shotfiring and explosives system must include provisions for audits of the system's operation and for periodic reviews (at intervals not exceeding 2 years) of the system's effectiveness.

(4) A shotfiring and explosives system must be documented and the relevant document or documents must be kept at the mine.

155 Employees' representatives to be consulted

Employees' representatives possessing appropriate skills, knowledge or experience must be consulted regarding (and be given an opportunity to participate in) the development and revision of a mine's shotfiring and explosives system.

156 Copy to be supplied to district inspector and district check inspector

A copy of a mine's shotfiring and explosives system, and any revisions of it, must be supplied to the district inspector and the district check inspector within 7 days of the system or revisions being put into effect.

157 Competency and training of personnel

A mine manager must ensure that the persons required to perform duties as part of a mine's shotfiring and explosives system are competent to carry out those duties and are given appropriate training.

Division 4 – Explosives

158 Approval of explosives

An explosive must not be taken into or used underground at a mine unless it is approved.

159 Maximum weight of explosive to be used

A person must not charge a shothole with an aggregate weight of explosive exceeding any maximum stated in the conditions of the approval of the explosive.

160 Records

A mine manager must ensure that an accurate record is kept of all explosives received at, issued from or returned to any explosive store at the mine.

Part 11 – Airborne dust

Division 1 – Preliminary

161 Definitions

In this Part:

"**analyse**", in relation to a sample of airborne dust, means to determine, from that sample, whether a concentration of dust in the air at the place from which the sample was collected exceeds the specified limit.

"**preparation plant**" includes plant and machinery used for the crushing, washing or beneficiation of coal.

"**specified limit**", in relation to a concentration of dust of a type specified for the purposes of this definition, means the limit specified in respect of that type of dust.

Division 2 – Working practices

162 Working practices

A mine manager must ensure that in any underground place at the mine where coal or stone is

mined, loaded or transported by conveyor:

- (a) water under adequate pressure is provided, and
- (b) the making of dust is kept to a minimum, and
- (c) such measures are taken as are found to be necessary to reduce the concentration of airborne dust to below the specified limit.

163 Airborne dust rules

- (1) A mine manager must make rules for the purpose of reducing airborne dust arising from working practices at the mine ("**airborne dust rules**").
- (2) The airborne dust rules must include provisions relating to the following matters:
 - (a) the use of water, or the use of other suitable methods, to reduce airborne dust during mining operations,
 - (b) the use of water, or the use of other suitable methods, during the transport of coal or stone to prevent the raising of dust into the atmosphere,
 - (c) the use of water during the drilling in stone or into the roof in coal in order to minimise the issue of dust from drill holes,
 - (d) the dilution of airborne dust by the ventilating air provided in a working place,
 - (e) the removal or consolidation of roadway dust, being dust which is liable to be raised into suspension,
 - (f) the maintenance of water sprays, drills, pumps and other equipment used for the suppression of dust.
- (3) For the purposes of:
 - (a) section 104 of the Act, the subject-matter referred to in subclause (1) in respect of which a mine manager is required to make rules is a prescribed subject-matter, and
 - (b) section 104 (2) (a) of the Act, a matter referred to in subclause (2) is a prescribed matter.

Division 3 – Collection and analysis of dust samples

164 Appointment of persons to collect and analyse samples

- (1) A mine manager must appoint, in writing, persons to be responsible for:
 - (a) the collection of samples of airborne dust at the mine, and
 - (b) the analysis of such samples.
- (2) Despite subclause (1), samples of airborne dust at a mine may be collected or analysed by a person or persons appointed by the Joint Coal Board for the purpose.

165 Collection and analysis of samples

- (1) A person appointed to collect samples of airborne dust at a mine must collect the samples at such places, times and frequency as may from time to time be specified.
- (2) The samples must be collected in accordance with *Australian Standard 2985 (Workplace atmospheres--Method for sampling and gravimetric determination of respirable dust)*.
- (3) A person appointed to analyse samples of airborne dust at a mine must analyse the samples or arrange for them to be analysed in accordance with *Australian Standard 2985*.

166 Action to be taken following analysis of samples

- (1) A mine manager must appoint a person for the purposes of this clause.
- (2) The person appointed must ensure that the result of every analysis of a sample of airborne dust at the mine required to be made by this Regulation is, without delay, recorded by a suitable method provided by the mine owner for the purpose.
- (3) The record must be kept at the mine.
- (4) If the result of an analysis reveals that a concentration of dust exceeds the specified limit, the appointed person must, on becoming aware of it, report the result to the mine manager.
- (5) The manager must direct what action is to be taken to ensure that any concentration of

dust in similar circumstances to those existing when the sample was collected is reduced.

167 Further samples and analysis

(1) If a result of an analysis of a sample is reported to a mine manager under clause 166 (4), the manager must:

(a) within 7 days:

(i) ensure that the person in whose breathing zone (as defined in *Australian Standard 2985*) the sample was collected is informed of the result, and

(ii) ensure that, in similar circumstances to those existing when the sample was collected, a further sample is collected and analysed as provided in this Division, and

(b) give notice immediately to the district inspector and district check inspector if the results of the further analysis still exceed the specified limit.

(2) On receiving such a notice from a manager, the district inspector may, in writing, direct the manager to carry out additional procedures in order to further limit the concentration of airborne dust in similar circumstances to those existing when the relevant sample was collected.

(3) The mine manager must advise the district inspector when any action required to be taken by the manager under subclause (2) has been taken and enter a report of the action taken and the date on which it was taken in the record required to be kept under this Division.

Division 4 – General provisions

168 Prevention of dust entering intake airways

A mine manager must ensure that, as far as practicable, any airborne dust from any source associated with the operation of the mine is prevented from entering the down cast shafts and other intake airways in the mine.

169 Provision of plant to control dust at surface works

If workers are exposed to concentrations of dust in excess of the specified limit at surface works associated with a mine, there must be provided a suction plant or other suitable apparatus or plant designed to effectively avoid that exposure.

Part 12 – Coal dust explosion prevention and suppression

Division 1 – Preliminary

170 Definitions

In this Part:

"**face zone**" means that area of a mine inbye of all points 200 metres outbye of a last completed line of cutthroughs or that area inbye of all points 200 metres outbye of a longwall face.

"**roadway dust**" means dust on the floor, roof or sides of a roadway or on any other surfaces in a roadway.

"**working panel**" includes all roadways, both intake and return, ventilated by a separate ventilation split that provides ventilation to a working face within the panel (unless an inspector determines otherwise).

Division 2 – General

171 Explosion prevention and suppression generally

(1) A mine manager must ensure that means are in place to prevent any explosion underground at the mine involving coal dust and to suppress any such explosion should it occur.

- (2) Such means must include, but are not limited to, the following:
 - (a) the application of sufficient quantities of stone dust to surfaces in roadways,
 - (b) the prevention of accumulations of coal dust that may contribute to an explosion,
 - (c) the installation and maintenance of explosion barriers.
- (3) In complying with this clause, a mine manager must have regard to any relevant guidelines applied to the mine.

172 Implementation of explosion suppression systems

- (1) A mine manager must, within 6 months after the commencement of this Regulation, develop and implement an explosion suppression system providing for:
 - (a) the maintenance, through the application of stone dust or otherwise, of the incombustible content of roadway dust required by this Part, and
 - (b) the prevention of accumulations of coal dust, and
 - (c) the installation and maintenance of explosion barriers and other explosion suppression measures.
- (2) In particular, an explosion suppression system must provide for the following matters:
 - (a) the required application rates and means of application of stone dust to be applied in working places,
 - (b) the methods by which parts of advancing working places that have not yet had stone dust applied are to be maintained in a safe condition,
 - (c) the means by which stone dust is to be applied to surfaces in return roadways in close proximity to working faces,
 - (d) the application of stone dust to previously untreated roadway surfaces (resulting from roof or rib spall, the movement of equipment or otherwise),
 - (e) the procedures, methods or indicators to be used to give an indication whether or not required levels of incombustible content of roadway dust are being maintained,
 - (f) the procedures for, and frequency of, examination, sampling and testing of roadway dust to confirm whether or not required levels of incombustible content are being maintained,
 - (g) the procedures for the re-application of stone dust in parts of a mine (with particular reference to roadways containing conveyor belts),
 - (h) the procedures for the installation and maintenance of explosion barriers and other explosion suppression measures,
 - (i) the means for the determination and recording of maximum likely concentrations of flammable gas in parts of the mine,
 - (j) the making and retention of reports of examination, sampling and testing of roadway dust and the examination of explosion barriers.
- (3) An explosion suppression system must include provisions for periodic reviews (at intervals not exceeding 2 years) of the system's effectiveness.
- (4) An explosion suppression system must be documented and the relevant document or documents must be kept at the mine.

173 Employees' representatives to be consulted

Employees' representatives possessing appropriate skills, knowledge or experience must be consulted regarding (and be given an opportunity to participate in) the development and revision of a mine's explosion suppression system.

174 Copy to be supplied to district inspector and district check inspector

A mine manager must supply a copy of the mine's explosion suppression system, and any revisions of it, to the district inspector and the district check inspector within 7 days of the system or revisions being put into effect.

175 Periodic audits of explosion suppression systems

- (1) An explosion suppression system must include provisions for periodic audits (at intervals not exceeding one year) of the system's operation.
- (2) An auditor must be a person who is accredited by the Chief Inspector as a person who is qualified to conduct audits for the purposes of this Part.
- (3) A mine manager must, in respect of each audit of the mine's explosion suppression system's operation, obtain from the auditor a report:
 - (a) as to whether or not the system is being followed at the mine, and
 - (b) as to whether or not the intended purposes of the system are being met.
- (4) A mine manager must provide a copy of each report to the district inspector and the district check inspector as soon as practicable after the conduct of the audit (together with a report by the manager as to how any shortcomings revealed by the audit are to be rectified).

176 Maintenance of incombustible content of roadway dust

- (1) The incombustible content of that portion of roadway dust that is finer than 250 micrometres must be maintained at the following levels through the application of stone dust:
 - (a) in the case of dust in an intake roadway within a face zone--not less than 80 per cent by mass,
 - (b) in the case of dust in a return roadway within a face zone--not less than 85 per cent by mass,
 - (c) in the case of dust elsewhere in a mine--not less than 70 per cent by mass.
- (2) Subclause (1) does not apply to roadway dust that is so wet as to be incapable of being forced into suspension in the air by the concussion of a gas explosion or otherwise.
- (3) The distance advanced between applications of stone dust at each working face must be kept to not more than 30 metres but in no case is a working place to remain without an application of stone dust for a period in excess of one working day.
- (4) In subclause (1): "**incombustible content**", in relation to roadway dust, includes any moisture contained in the dust.

177 Reduction of levels of incombustible content of roadway dust in certain circumstances

- (1) A mine manager may determine the maximum likely concentration of flammable gas ("**maximum likely gas concentration**") in intake roadways within face zones and in return roadways within working panels.
- (2) In the case of an intake roadway within a face zone the manager's determination must be based on readings obtained from:
 - (a) an automatic methane monitor or a recording methane detector installed on a continuous mining machine operating in the zone, or
 - (b) an automatic methane monitor or a recording methane detector installed on the return side of a longwall working in the zone.
- (3) In the case of a return roadway within a working panel the manager's determination must be based on readings obtained from a gas monitoring system required by this Regulation.
- (4) A mine manager must record any determinations of maximum likely gas concentrations and notify the district inspector immediately in writing of the determinations and the parts of the mine to which they apply.
- (5) If a mine manager determines the maximum likely gas concentration for a part of the mine, the minimum incombustible content level that is required by clause 176 (1) (a) or (b) to be maintained in relation to roadway dust in that part is reduced by:
 - (a) in the case of dust in an intake roadway within a face zone--1 per cent for each 0.1 per cent that the maximum likely gas concentration is below 1 per cent, and
 - (b) in the case of dust in a return roadway within a working panel--1 per cent for each 0.2 per cent that the maximum likely gas concentration is below 2 per cent.

178 Review of mine manager's determinations of maximum likely gas concentrations

- (1) An inspector who is of the opinion that a concentration of flammable gas present in a

part of a mine has been, is or is likely to be greater than a maximum likely gas concentration currently determined by the mine manager for that part must immediately serve on the manager a notice requiring the application of stone dust to that part as though the determination had not been made.

(2) An inspector may require a mine manager to arrange for the conduct of measurements of flammable gas concentrations in a manner and at a frequency required by the inspector for the purpose of testing the manager's determination of a maximum likely gas concentration.

(3) A mine manager may apply to the Chief Inspector for a review of a requirement under subclause (1) or (2) (other than a requirement made by the Chief Inspector) and the Chief Inspector may revoke, confirm or amend the requirement.

(4) A mine manager must comply with a requirement under subclause (1) or (2) unless it is revoked or amended. If a requirement is amended it must be complied with as amended.

179 Restrictions on use of stone dust

(1) Stone dust must not be used for the treatment of roadway dust unless it is of a specified type or grade.

(2) The Chief Inspector may specify the use of particular types or grades of stone dust for particular purposes.

180 Explosion barriers and other explosion suppression measures in roadways

(1) An explosion barrier must be installed and maintained in the part of any roadway (other than part of a single entry roadway) containing a conveyor belt within a face zone.

(2) An explosion barrier must be installed and maintained in the part of any return roadway (other than part of a single entry roadway or a part of a roadway referred to in subclause (1)) within a face zone.

(3) Adequate explosion suppression measures must be installed and maintained in single entry roadways.

(4) In installing and maintaining explosion barriers or other explosion suppression measures regard must be had to any relevant guidelines applied to the mine.

(5) For the purposes of this clause, an explosion barrier is taken to have been installed in a part of a roadway if the inbye part of the barrier is in the part of the roadway.

Division 3 – Sampling and testing of roadway dust

181 Appointment of departmental roadway dust examiners

The Chief Inspector may appoint officers of the Department as departmental roadway dust examiners. The officers appointed must be the holders of at least a deputy's certificate of competency.

182 Functions of departmental roadway dust examiners

A departmental roadway dust examiner has the following functions:

(a) after notifying a senior mining official present at a mine, to enter the mine at any reasonable time for the purpose of determining roadway dust conditions,

(b) to collect and remove from a mine samples of roadway dust,

(c) to require the production of, to inspect and to copy from, any records or reports required to be kept under this Part,

(d) to make inquiry and examination in order to ascertain whether the provisions of this Part are being complied with,

(e) to require any person having responsibilities under the Act or this Part to provide such assistance and facilities with respect to any matter or thing to which the responsibilities of that person extend as are necessary to enable the departmental roadway dust examiner to exercise any power conferred by this clause.

183 Appointment of persons to collect roadway dust samples

(1) A mine manager must appoint a person or persons in writing for the collection of

roadway dust samples at the mine.

(2) A person appointed must, before the appointment, have undergone a period of instruction and satisfied the manager as to the person's ability to perform the duties required.

184 Person to accompany departmental roadway dust examiner on visits to mine

A person appointed by a mine manager to collect roadway dust samples, or in that person's absence a mining official nominated by the manager, must, at the request of a departmental roadway dust examiner, accompany the examiner during visits to the mine.

185 Method of taking roadway dust samples

(1) If roadway dust is to be sampled for the purpose of ascertaining its incombustible content for the purposes of this Part:

(a) subject to paragraph (b), samples must be taken:

(i) where practicable, from the complete perimeter of the roadway and the structures in it, and

(ii) where possible, over a length of roadway of at least 45 metres, by a method of strip sampling by which the dust is collected from a succession of transverse strips as nearly as possible of equal width and equally spaced, not more than 5 metres apart and of an aggregate area not less than one per cent of the total area sampled, and

(b) if it appears that dust on the floor of a roadway contains a different incombustible content from dust on the roof and sides of the roadway, the dust on the floor must be sampled and tested separately from the dust on the roof and sides, and

(c) each sample must be collected as near as practicable from a maximum depth of 5 millimetres.

(2) If a location is resampled, the individual strips from which the increments for a strip sample are taken must not coincide with those from which a previous sample has been taken.

(3) In sampling roadway dust regard must be had to any relevant guidelines applied to the mine.

186 Testing roadway dust samples

(1) In preparing roadway dust samples and determining their incombustible content regard must be had to any relevant guidelines applied to the mine.

(2) In the event of a dispute concerning the incombustible content of samples of roadway dust, the determination of the incombustible content by use of a specified method will prevail.

Part 13 – Sinking of shafts

187 Opening of new shafts

(1) A mine manager must notify the district inspector in writing if work is to start for the purpose of opening a new shaft.

(2) The notice must be given before the start of the work and must clearly indicate:

(a) the method to be used in sinking the shaft, and

(b) the means of ventilation to be used, and

(c) the steps to be taken to support the walls of the shaft, and

(d) the means to be adopted to protect workers from falling material, and

(e) the means to be used in disposing of the material excavated from the shaft.

188 Guides and guide attachments

(1) There must be provided in every sinking shaft exceeding 50 metres in depth guides and guide attachments such as to prevent a bucket or other appliance from swinging while being lowered or raised in the shaft.

(2) Other than when blasting takes place, the guides and guide attachments must be maintained from the surface to a distance of not more than 25 metres from the bottom of the shaft until the shaft's sinking has been completed.

189 Scheme for examination and testing of plant

(1) The manager of a mine in which there is a shaft in the course of being sunk must include in the scheme for the systematic examination or testing of apparatus at the mine (prepared under section 103 of the Act) provisions for the systematic examination and testing of plant used in connection with the sinking of the shaft.

(2) The scheme must include provisions requiring:

- (a) the appointment in writing of a person who, at intervals not exceeding 24 hours, is to carry out a thorough examination of all appliances by which any cradle, platform, materials or equipment is suspended in the shaft, and
- (b) the person so appointed to complete a full and accurate report of each such examination without delay, and
- (c) a copy of that report to be placed, without delay, in a book provided and kept by the mine owner for that purpose.

190 Lining

If lining is being carried out in a shaft at a mine the mine manager must make arrangements to ensure that the equipment used for lining is thoroughly examined at least once in each shift by a person appointed by the manager.

191 Cradles and platforms

(1) Cradles or platforms in a shaft in the course of being sunk at a mine must be securely fenced or otherwise protected to prevent persons from falling from the cradles or platforms.

(2) While a cradle or platform is stationary it must be secured to the side of the shaft to prevent it swinging and not be moved except on the direction of the deputy for that shift or a senior official.

(3) While any person is at work on a cradle or platform constructed of two or more parts hinged together, those parts must be securely fastened together.

192 Banksperson's duties

(1) The banksperson at a mine must ensure that the top of a shaft in the course of being sunk and any landing is kept free of mineral or any other thing which might fall into the shaft.

(2) A banksperson at a mine:

- (a) must not leave the pit top while persons are in a shaft in the course of being sunk unless:
 - (i) the opening over the shaft mouth is protected, and
 - (ii) the banksperson is within hearing distance of any signals, and
- (b) must not allow any unauthorised person to remain about the pit top or approach the mouth of the shaft, and
- (c) must see that the pit top doors, or trolley, are properly shut down or placed over the shaft before the bucket or any material is landed, and
- (d) must see that the bucket is lifted clear of the doors or trolley and properly steadied before the banksperson opens the doors or removes the trolley, and
- (e) must not allow anything to be put into the bucket while it is hanging over the open shaft.

193 Engines

(1) An engine that is not fixed must not be used for raising or lowering any person or thing in a shaft in the course of being sunk.

(2) Subclause (1) does not apply where materials are being raised or lowered for the first 20 metres in a shaft being sunk and a safe ladderway is installed and maintained in a safe

condition between the bottom of the shaft and the surface.

194 Signals

(1) The number of signals to be transmitted in a shaft in the course of being sunk at a mine to require the following movements in respect of apparatus must be the number shown opposite those movements:

to raise up	1
to lower down	2
to stop when in motion	1
to raise steadily	4
to lower steadily	5

(2) If persons are to be raised or lowered in a shaft in the course of being sunk preliminary signals must be transmitted and the number of such signals must be 3.

(3) A mine manager may, in relation to any shaft in the course of being sunk, determine a signal to be transmitted to indicate any matter (other than a signal or matter referred to in subclause (1) or (2)).

(4) A person who is not an official of a mine or a person authorised in writing by the mine manager must not transmit a signal in a shaft in the course of being sunk at the mine.

195 Loads

(1) If anything is to be raised or lowered in a kibble or bucket through a shaft in the course of being sunk at a mine, it is the duty of the person transmitting signals in relation to it to ensure that the kibble or bucket is properly loaded and, in particular, that:

- (a) no coal or stone projects above the rim, and
- (b) tools, equipment or other materials for use or used in the mine are not loaded with coal or stone, and
- (c) where things which project above the rim of the kibble or bucket are carried, they are securely fastened to the bow or chains supporting the bucket or kibble, and
- (d) nothing capable of causing injury is adhering to the outside of the kibble or bucket or any chain or attachment, and
- (e) when the kibble or bucket is being raised, it is in line with the pulleys and carefully steadied.

(2) A provision of subclause (1) does not apply in any case where the mine manager has authorised in writing special arrangements.

(3) If a load is to be suspended from, or carried on a kibble or bucket in a shaft in the course of being sunk, the load must be so secured as to prevent any part of the load projecting beyond the vertical extension of the line of the circumference of the kibble or bucket.

(4) If anything is to be lowered through a shaft in the course of being sunk, otherwise than in a kibble or bucket, it is the duty of the person transmitting signals in relation to it to ensure that it is safely slung.

196 Persons not to ride on kibbles or buckets

A person must not ride on a full kibble or bucket or on the edge of a kibble or bucket when being raised or lowered in a shaft in the course of being sunk.

197 Stopping of kibbles or buckets

The person operating a winding apparatus at a shaft in the course of being sunk must:

- (a) when lowering a kibble or bucket, stop it about 6 metres above the point to which it is being lowered and not lower it further until receiving another signal to lower down, and
- (b) when raising a kibble or bucket, stop it about one metre above the point from which it is being raised and not raise it further until receiving another signal to raise up.

Part 14 – Belt conveyors

198 Application of Part

The provisions of this Part apply to and in respect of belt conveyors used underground and are in addition to a provision of the *Coal Mines (General) Regulation 1999* which requires conveyors at mines to be designed, constructed, installed and operated in accordance with the relevant sections of *Australian Standard 1755 (Conveyors--Design, construction, installation and operation--Safety requirements)*.

199 Use of conveyors in dusty places

A belt conveyor must not be used at a place underground in a mine unless the requirements of Part 12 (Coal dust explosion prevention and suppression) have been complied with at that place.

200 Requirement for provision of additional airway

(1) In a mine where a belt conveyor is in use in the main intake airway, the Chief Inspector may, by notice in writing served on the mine manager, require the provision of an additional intake airway for the purpose of segregating the airway in which the belt conveyor is installed in case of a fire on the belt conveyor system.

(2) A mine manager on whom a notice is served may, within 14 days after service, object to the requirement in the notice by lodging an objection in writing with the Chief Inspector stating the reasons for the objection.

(3) The Chief Inspector may withdraw the requirement or refer the matter to the court for decision.

(4) A mine manager on whom a notice is served must either comply with the requirement in the notice within the time allowed by it or, if the matter has been decided by the court, comply with the order of the court.

201 Reduction of air velocity in underground roadway

In an underground roadway in which a belt conveyor is in use and the velocity of the air passing through the roadway normally exceeds one metre per second, suitable means must be provided by which, if there is a fire, the velocity of the air passing through the roadway may be reduced.

202 Installation and operation of belt conveyors

(1) In an underground roadway in which a belt conveyor is used:

(a) the belt conveyor structure must be installed and maintained so as to prevent contact between the belt and any stationary items or materials (excluding those specifically allowed for in the design of the conveyor), and

(b) the roof must be of sufficient height to allow the contour of the maximum load and the largest fragments carried by the conveyor to clear the roof and roof supports, and

(c) the roadway must be of sufficient width to provide a suitable passageway on at least one side of the conveyor to facilitate inspection and maintenance, and

(d) sufficient clearance must be provided on each side of the conveyor to allow any spillage of coal to fall clear of the conveyor, and

(e) a minimum clearance of 300 millimetres from the floor to the underside of the return belt must be provided (except at the most inbye loading point of the conveyor system if the mine manager establishes that such clearance is impracticable).

(2) A belt conveyor used in an underground roadway must not be operated if any belt fabric material is in contact with the shaft of any idler or pulley.

(3) A mine mechanical engineer must ensure that conveyor belting used underground at the mine is flame resistant and anti-static.

203 Maintenance of belt conveyor systems

A belt conveyor system must be maintained having regard to any relevant guidelines applied to the mine.

204 Cleaning of underground roadways

All underground roadways in which belt conveyors are installed must be cleaned and kept free from spillage, loose coal and rubbish.

Part 15 – Exemptions

205 Exemptions from complying with provisions of this Regulation

A mine manager may apply to the Chief Inspector in writing for an order under section 174 (5) of the Act that any specified provision of this Regulation:

- (a) does not apply to or in respect of any specified person or class of person or any specified act, matter or thing or class of act, matter or thing, or
- (b) does not so apply in specified circumstances.

Schedule 1 Matters to be covered by mine inspection systems

(Clause 16 (4))

Inspections for the presence, condition or adequacy of the following things:

- Roadway roofs, sides and floors
- Ventilation apparatus such as stoppings, seals and overcasts
- Refuge stations
- Face ventilation
- Auxiliary fans and ducting
- Brattice ventilation
- Explosion barriers
- Stone dusting standards and appliances
- Notices required to be posted by or under Acts
- First-aid equipment
- Firefighting equipment
- Firefighting water supply
- Other emergency equipment
- Roadway support
- Condition of atmosphere
- Dangerous and inflammable gases
- Ventilation
- Evidence of spontaneous combustion
- Accumulation of water or gas
- Airborne dust
- Trackwork
- Conveyor belts
- Dangerous concentrations of roadway dust
- Signs of potential outbursts
- Evidence of contraband
- Flammable materials not contained or placed according to procedures
- Any other hazards to health or safety

Historical notes

The following abbreviations are used in the Historical notes:

Am	amended	No	number	Schs	Schedules
Cl	clause	p	page	Sec	section
Cll	clauses	pp	pages	Secs	sections
Div	Division	Reg	Regulation	Subdiv	Subdivision
Divs	Divisions	Regs	Regulations	Subdivs	Subdivisions
GG	Government Gazette	Rep	repealed	Subst	substituted
Ins	inserted	Sch	Schedule		

Table of amending instruments *Coal Mines (Underground) Regulation 1999* published in Gazette No 95 of 20.8.1999, p 5933 and amended as follows: *Coal Mines Amendment Regulation 2003* (GG No 109 of 4.7.2003, p 6866)

Table of amendments

Cl 7A	Ins 4.7.2003.
Cl 34	Am 4.7.2003.
Cll 34A, 34B	Ins 4.7.2003.
Cll 62, 68, 85, 115	Am 4.7.2003.
Cl 115A	Ins 4.7.2003.
Cll 125, 133, 139-142, 145, 146, 177, 180	Am 4.7.2003.