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PART II/PARTIE II

REVISED REGULATIONS OF SASKATCHEWAN/ RÈGLEMENTS RÉVISÉS DE LA SASKATCHEWAN

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REVISED REGULATIONS OF SASKATCHEWAN

CHAPTER O-1.1 REG 2

The Occupational Health and Safety Act, 1993

Section 44

Order in Council 335/2003, dated April 29, 2003

(Filed April 30, 2003)

PART I
Preliminary Matters

Title

1 These regulations may be cited as *The Mines Regulations, 2003*.

Interpretation

2(1) In these regulations:

(a) **"Act"** means *The Occupational Health and Safety Act, 1993*;

(b) **"adit"** means a horizontal or nearly horizontal opening into an underground mine;

(c) **"approved"** means, unless stated otherwise:

(i) in relation to equipment:

(A) approved by an agency acceptable to the chief mines inspector for use under the conditions prescribed by the agency; or

(B) approved conditionally or otherwise by a certificate of the chief mines inspector; and

(ii) in relation to any other matter, approved by the chief mines inspector;

(d) **"balance rope"** means a rope that is used to counterbalance a conveyance by extending from the bottom of the conveyance to the bottom of another conveyance or a counterweight;

(e) **"barrier"** means a safeguard that restricts or prevents approach or access;

(f) **"berm"** means an embankment or ridge of earth that functions as a protective barrier;

(g) **"cage"** means a vertically-moving enclosed platform, with one or more decks, that is used in a shaft for transporting workers and materials;

(h) **"chair"** means any device installed for the purpose of landing a conveyance at any point in a shaft;

(i) **"committee"** means an occupational health committee;

(j) **"conveyance"** means a cage, a skip or a sinking bucket;

(k) **"crosshead"** means a runner or framework that:

(i) runs on guides; and

(ii) is placed approximately one metre above a conveyance to prevent the conveyance from swinging excessively;

(l) **"day box"** means a box with a cover for temporary storage of explosives underground;

(m) **"detonator"** means any device for initiating the detonation of explosives that contains a maximum of 10 grams of explosive by weight and includes a safety-fuse assembly;

(n) **"direct supervisor"** means a supervisor who personally directs or oversees workers underground at a mine or in the pit of an open pit mine but does not include a lead hand;

(o) **"drawpoint"** means a point where gravity-fed ore or waste from a higher level is withdrawn for loading onto hauling units;

(p) **"dredge"** means a machine that floats on water and is equipped with a scoop, a series of buckets or similar devices to remove mud, sand or other materials from the bottom of a body of water;

(q) **"drift"** means a horizontal or nearly horizontal underground work passage in a mine;

(r) **"explosive"** means a chemical compound or mixture that, when detonated, violently decomposes, producing a large volume of gas at high temperatures;

(s) **"former regulations"** means "The Mines Regulations", being Saskatchewan Regulations 284/78, as those regulations existed on the day before the coming into force of these regulations;

(t) **"guide rope"** means a stationary rope that is used to position a conveyance in the shaft;

(u) **"headframe"** means the steel or timber frame or building over a shaft that:

(i) contains the sheave or pulley for the hoisting ropes used to raise or lower a conveyance; and

(ii) may contain the hoist;

(v) **"hoist operator"** means a person who operates a hoist to transport workers or materials in a shaft;

(w) **"hoist signalling system"** means a system for exchanging separate and distinct conveyance control signals between the hoist operator and the worker in charge of the conveyance;

(x) **"hoisting rope"** means a rope that is used to lift and lower a conveyance in a shaft;

(y) **"loading pocket"** means an area adjacent to the shaft where the skip is loaded;

(z) **"locomotive"** means a vehicle that operates on rails and that is used to propel a train of railway cars;

(aa) **"magazine"** means a building, structure or place in which an explosive or detonator is kept, but does not include a day box;

(bb) **"manway"** means a vertical compartment of a shaft or raise containing a ladder that is used as a passage for workers;

(cc) **"mine"**:

(i) when used as a noun, means an opening or excavation in, or working of, the ground for the purpose of obtaining, proving or opening up a mineral, rock, stone or clay and includes:

(A) a quarry, excavation or opening in the ground that is made for the purpose of searching for or removing a mineral, rock, stone or clay; and

(B) all workings and plant under or above ground that are used in connection with crushing, reducing, melting, refining or treating any mineral, rock, stone or clay; and

(ii) when used as a verb, means any method of working by which a mineral, rock, stone or clay may be disturbed, removed, carted, carried, washed, dissolved, sifted, roasted, smelted, refined, crushed or otherwise dealt with for the purpose of obtaining any mineral from it, whether the mineral, rock, stone or clay was previously disturbed or not;

(dd) **"OHS regulations"** means *The Occupational Health and Safety Regulations, 1996*;

(ee) **"open pit mine"** means a mine that is worked from the exposed surface and includes a strip mine, quarry, gravel pit, sand pit and clay pit;

(ff) **"ore pass"** means a vertical or inclined passage underground for the downward transfer of ore or materials;

(gg) **"panel"** means a subdivision of an ore body;

(hh) **"raise"** means an opening underground that extends upward to an angle greater than 30^{o} from the horizontal to:

(i) connect with a level above; or

(ii) explore the ground for a limited distance above a level;

(ii) **"rated load"** means:

(i) with respect to a conveyance, the maximum load that may be carried in, on or under a conveyance, determined in accordance with clause 137(a);

(ii) with respect to a deck of a multi-deck conveyance, the maximum load that may be carried on the deck, determined in accordance with clause 137(b); and

(iii) with respect to a raise climber, the maximum load that may be carried on the raise climber, determined by a professional engineer;

(jj) **"rockburst"** means a violent failure of rock that causes a significant expulsion of material;

(kk) **"room"** means, when referring to an excavation underground, a production area in a panel;

(ll) **"rubbing rope"** means a rope that is:

(i) suspended between two conveyances in a shaft; and

(ii) used to keep the conveyances from contacting each other when they do not track properly within the guide ropes;

(mm) **"shaft"** means a vertical or nearly vertical opening into an underground mine that is normally used to transport persons or hoist ore or materials;

(nn) **"shaft rope"** means a hoisting rope, guide rope, rubbing rope or balance rope;

(oo) **"sinking bucket"** means a specialized conveyance used for the purposes of a shaft-sinking operation that:

(i) is in the general form of a bucket or pail; and

(ii) is sufficiently large to accommodate several persons;

(pp) **"skip"** means a specialized conveyance that:

(i) is used in a shaft for hoisting ore or materials; and

(ii) can be adapted for transporting persons;

(qq) **"stope"** means an underground excavation made for the purpose of extracting ore from the surrounding rock;

(rr) **"working face"** means the exposed surface of the ore or material where mining is being done;

(ss) **"workings"** means the parts of a mine where excavations have taken place or are taking place.

(2) Unless otherwise provided, terms used in these regulations that are defined in the OHS regulations have the meanings given to them in those regulations.

(3) A reference in these regulations to a table is a reference to the table as set out in Part I of the Appendix.

(4) A reference in these regulations to a form is a reference to the form as set out in Part II of the Appendix.

Application of these regulations

3 These regulations apply to mines.

Application of OHS regulations to mines

4(1) Subject to subsection (2) and except where these regulations provide otherwise, the OHS regulations apply to mines in addition to these regulations.

(2) If there is a conflict between the OHS regulations and these regulations, these regulations prevail.

(3) An approval provided by the director pursuant to the OHS regulations that is applicable to mines constitutes an approval pursuant to these regulations.

PART II
General Notice Requirements

Commencement of work, intended installation

5(1) Subsection 7(1) of the OHS regulations does not apply to mines.

(2) An employer, contractor or owner must give the chief mines inspector written notice of the following as soon as is reasonably possible:

(a) the commencement of work or the resumption of work after an interruption of work of two months or more;

(b) the commencement of work at a major new part of a mine.

(3) If a hoist is to be installed in a shaft, an employer, contractor or owner must provide the chief mines inspector with a written notice that:

(a) is given at least 90 days before commencement of the installation; and

(b) includes the specifications and layout of the facility.

(4) A notice required by this section must contain the information mentioned in subsection 7(3) of the OHS regulations.

Dangerous occurrences

6(1) In this section, **"dangerous occurrence"** means any occurrence that does not result in, but could have resulted in, a condition or circumstance set out in subsection 8(1) of the OHS regulations, and includes:

(a) the structural failure or collapse of a structure, scaffold, temporary falsework, concrete formwork, dam or bulkhead;

(b) the unanticipated failure or collapse of all or any part of an excavated shaft, tunnel, caisson, coffer dam, trench or excavation;

(c) any equipment failure involving a hoist, sheave, hoisting rope, conveyance, shaft timbering or shaft lining;

(d) any inrush of water underground;

(e) any outbreak of fire underground;

(f) any outbreak of fire on the surface that causes structural damage to a building at the mine;

(g) any call-out of a mine rescue team;

(h) any unusual gaseous condition in a workings;

(i) any rockburst or unexpected or uncontrolled subsidence or caving-in of a workings;

(j) any failure during use of the braking or steering system of a vehicle used for the hauling or loading of ore or waste;

(k) any loss of control of any vehicle conveying workers;

(l) the failure of a crane or hoist or the overturning of a crane or unit of powered mobile equipment;

(m) an accidental contact with an energized electrical conductor;

(n) the bursting of a grinding wheel;

(o) an uncontrolled spill or escape of a toxic, corrosive or explosive substance;

(p) a premature detonation or accidental detonation of explosives;

(q) the failure of an elevated or suspended platform; and

(r) the failure of an atmosphere-supplying respirator.

(2) An employer, contractor or owner shall give notice to the division as soon as is reasonably possible of any dangerous occurrence that takes place, whether or not a worker sustains injury.

(3) A notice required by subsection (2) must include:

(a) the name of each employer, contractor and owner involved in the dangerous occurrence at the mine;

(b) the date, time and location of the dangerous occurrence;

(c) the circumstances related to the dangerous occurrence;

(d) the name, telephone number and fax number of the employer, contractor or owner or a person designated by the employer, contractor or owner to be contacted for additional information.

(4) An employer, contractor or owner shall provide each co-chairperson or the representative with a copy of the notice required by subsection (2).

(5) An employer, contractor or owner shall ensure that every dangerous occurrence is investigated and a written report prepared in accordance with section 31 of the OHS regulations.

PART III
Plans and Records

Preparation of plans

7(1) In this section, **"winze"** means a vertical or inclined opening that is sunk from a level to:

(a) connect with a level below; or

(b) explore the ground for a limited distance below a level.

(2) An employer, contractor or owner must ensure that the following plans are prepared by a qualified person:

(a) a surface plan showing the boundaries of the property and all lakes, streams, roads, railways, electric transmission lines, main pipelines, buildings, shafts, adits, surface workings, diamond drill holes, boreholes, dumps and tailings disposal areas;

(b) a plan of each underground level, showing all workings, shafts, drifts, crosscuts, diamond drill holes, dams and bulkheads;

(c) a plan respecting vertical mine sections at suitable intervals showing all shafts, drifts, crosscuts, stopes, raises, winzes and workings in relation to the surface, including the location of the top of bedrock, the surface of overburden, the position of any unconsolidated deposit and the position of any known watercourse or body of water, with each section shown on a separate drawing;

(d) a ventilation plan showing the direction and quantity of the main air currents, locations of permanent fans, ventilation doors, stoppings and connections with adjacent mines.

(3) An employer, contractor or owner must ensure that a plan mentioned in subsection (2):

(a) is reviewed and updated at least every 90 operating days; and

(b) is updated within 30 operating days after any significant change to a mine is made.

Marking current progress

8 When requested by an occupational health officer to do so, an employer or contractor must mark the current progress of a mine on the plans required pursuant to section 7.

Annual submission of certified copies

9(1) On or before March 31 in each year, an employer, contractor or owner must forward to the chief mines inspector copies of the plans required pursuant to section 7 as at December 31 of the previous year.

(2) The copies mentioned in subsection (1) must be certified as correct by the employer, contractor or owner.

Monthly statistics

10 Not later than 14 days after the end of each calendar month, an employer or contractor must provide the division and the co-chairpersons of the committee with employment and accident statistics for the previous calendar month in a form satisfactory to the chief mines inspector.

Entries in log books, records

11(1) If a worker or other person is required by or pursuant to a provision of these regulations to record an entry in a log book, log or record, the entry must include the following:

(a) the date of the entry;

(b) any information required by a provision of these regulations;

(c) the name or initials of the worker or person making the entry.

(2) If a provision of these regulations requires the employer or contractor to countersign an entry in a log book, log or record, the employer or contractor must:

(a) read the entry; and

(b) acknowledge that he or she has read the entry by recording:

(i) the date of his or her review; and

(ii) his or her name or initials.

Record retention

12(1) Unless specifically provided otherwise in these regulations, an employer, contractor or owner must retain all records required by these regulations at the mine for a period of at least three years after the day on which the record was created or the last entry in the record was made.

(2) If a mine is abandoned, the employer, contractor or owner, in consultation with the chief mines inspector, must ensure that all records that are relevant to the health of workers and self-employed persons are kept indefinitely and made available to workers.

PART IV
Supervision of Workers

Interpretation of Part

13 In this part, **"direct supervisor's certificate"** means a direct supervisor's certificate issued pursuant to section 18.

Qualifications of direct supervisor

14(1) An employer or contractor shall ensure that all work performed underground or in an open pit mine is supervised by a direct supervisor.

(2) No employer or contractor shall require or permit a person to act as a direct supervisor, unless:

(a) the person is competent to act as a direct supervisor;

(b) the person:

(i) holds a valid direct supervisor's certificate; or

(ii) holds a temporary authorization to supervise issued pursuant to section 16;

(c) the person has adequate knowledge of the language normally used at the mine;

(d) the person has:

(i) a minimum of three years' experience in the practical working of a mine;

(ii) a degree or other qualification in mining or a related discipline from a university or technical institute and a minimum of one year's experience in the practical working of a mine; or

(iii) a combination of training and experience that, in the opinion of the chief mines inspector, is equivalent to the requirements set out in subclause (i) or (ii);

(e) the person holds a valid class A qualification in first aid pursuant to Part V of the OHS regulations;

(f) if the proposed duties of the person include the supervision of blasting operations, the person holds a valid blaster's certificate pursuant to section 248;

(g) the person is trained in the duties of a direct supervisor in a mine emergency in the particular mine; and

(h) the person is authorized by the employer or contractor to act as a direct supervisor.

Suspension of authorization

15 If an employer or contractor suspends or revokes an authorization to act as a direct supervisor, the employer or contractor shall immediately inform the chief mines inspector of the suspension or revocation and the reasons for it.

Temporary authorization to supervise

16(1) An employer or contractor may issue a temporary authorization to act as a direct supervisor to a person who meets the requirements of section 14.

(2) A temporary authorization to act as a supervisor expires on the earlier of the following dates, unless it is revoked or suspended pursuant to section 15:

(a) 90 days after the date of issue;

(b) the day on which the worker is issued a direct supervisor's certificate.

(3) An employer or contractor shall not renew a temporary authorization to act as a supervisor unless a period of at least 30 days have passed since the expiration of the temporary authorization.

Direct supervisor's examination

17(1) A person is eligible to take the direct supervisor's examination if:

(a) the person has been recommended by his or her employer or contractor to the chief mines inspector; and

(b) the employer or contractor of that person provides a written notice to the chief mines inspector stating that:

(i) the person meets the qualifications set out in section 14; or

(ii) the employer or contractor will undertake to ensure that the person meets the qualifications set out in section 14 before the employer or contractor authorizes the person to act as a direct supervisor pursuant to clause 14(2)(h).

(2) The chief mines inspector may set an examination to test the knowledge, with respect to the following subjects, of a person who wishes to obtain a direct supervisor's certificate:

(a) legal requirements and standards applicable to:

(i) the rights and responsibilities of workers, supervisors, employers and contractors; and

(ii) the type of mine for which the direct supervisor's certificate will be issued;

(b) practices and procedures of the employer or contractor;

(c) emergency procedures;

(d) airborne contaminants;

(e) radiation protection, if applicable.

(3) The chief mines inspector may permit a person who fails the direct supervisor's examination to make another attempt after a period of not less than 30 days after the date of the previous attempt.

Direct supervisor's certificate

18(1) The chief mines inspector may issue a direct supervisor's certificate to a person if that person has passed the direct supervisor's examination within six months prior to the date of issue of the direct supervisor's certificate.

(2) The chief mines inspector may impose any terms and conditions on the direct supervisor's certificate that the chief mines inspector considers appropriate.

(3) No direct supervisor shall fail to comply with any term or condition imposed on the direct supervisor's certificate pursuant to subsection (2).

(4) Subject to section 19, a direct supervisor's certificate expires five years after the date of issue.

Revocation or suspension of direct supervisor's certificate

19(1) The chief mines inspector may, at any time, revoke or suspend a direct supervisor's certificate if the direct supervisor fails to comply with any term or condition of the direct supervisor's certificate or, in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

(2) The chief mines inspector must inform the direct supervisor and the employer or contractor immediately in writing of the revocation or suspension of the direct supervisor's certificate and the reasons for the revocation or suspension.

(3) If a direct supervisor's certificate is revoked pursuant to this section, any person in possession of the revoked direct supervisor's certificate, or a copy of the revoked direct supervisor's certificate, shall immediately return it to the chief mines inspector.

PART V
General Safety Requirements

Training program for workers

20(1) An employer must:

(a) develop a written program for the training of workers to ensure that they are adequately trained to carry out their duties safely; and

(b) appoint a competent person to direct the training program.

(2) A training program must specify for each type of work procedure:

(a) the content of the training required; and

(b) the time required for the training.

(3) The person appointed to direct the training program must:

(a) keep a record of all training provided to each worker through the program; and

(b) make a copy of the record readily available to workers.

(4) The employer must ensure that any person who provides training as part of the training program:

(a) is competent to provide the training; and

(b) is provided with adequate time and facilities to provide the training.

(5) If a worker has previous experience in the mining industry and is able to establish to the satisfaction of the person directing the training program that the worker has received training equivalent to training required by the program, the person directing the training program may accept the worker's previous training as meeting all or any part of the requirements of the program.

Substance impairment prohibited

21 An employer or contractor must take all reasonable steps to ensure that no person whose ability to work safely is impaired by alcohol, any drug or any other substance is allowed to work at a mine.

General standards for equipment

22(1) An employer, contractor or owner must ensure that all equipment used at a mine is designed, constructed, installed, maintained and operated to safely perform any task for which the equipment is used.

(2) A supplier must ensure that all equipment supplied for use at a mine is designed and constructed to safely perform any task for which the equipment is intended to be used.

Interference with safety equipment or processes prohibited

23 No worker shall:

(a) remove, displace, damage, destroy or render inoperative any safeguard or emergency equipment other than for the purpose of maintenance;

(b) remove or render unreadable any warning sign or notice unless authorized to do so by the employer or contractor; or

(c) interfere with:

(i) the equipment mentioned in clause (a), including the proper use of that equipment; or

(ii) any method or process adopted for the protection of that worker or any other worker at the mine.

Personnel accountability system

24(1) An employer or contractor must develop, implement and maintain an effective system:

(a) to record the workers who go underground on each shift;

(b) to record the workers who return to the surface on each shift; and

(c) to clearly identify any worker who is not accounted for on each shift.

(2) An employer or contractor must ensure that a competent person:

(a) examines the records mentioned in subsection (1) at the end of each shift and at suitable intervals of time during each shift; and

(b) immediately after examining the records, reports to the employer or contractor the identity of any worker who is not accounted for on a shift.

Shift record

25(1) An employer or contractor must:

(a) provide a shift record for the mine; and

(b) ensure that the shift record is kept readily available.

(2) An employer or contractor must ensure that:

(a) at the end of every shift, the direct supervisor records all significant information relevant to the health and safety of workers that was discovered during that shift; and

(b) at the beginning of every shift, the direct supervisor:

(i) reads any entry made pursuant to clause (a); and

(ii) acknowledges that he or she has read the entry by recording:

(A) the date of his or her review; and

(B) his or her name or initials.

Unusually hazardous work

26(1) In this section, **"unusually hazardous work"** means work that involves different or additional hazards or risks than are normally involved with that type of work or similar work.

(2) An employer or contractor must ensure that:

(a) unusually hazardous work is supervised closely and frequently; and

(b) only workers who have been thoroughly instructed with respect to the unusual hazard and proper work procedures are assigned to do the unusually hazardous work.

Working alone

27(1) An employer or contractor must ensure that no worker is required or permitted to work alone at any worksite if the absence of personal communication with another person may place the worker's health or safety at risk.

(2) If a worker is working alone at a worksite, an employer or contractor must ensure that contact is made with the worker personally, or by radio, telephone or other suitable means, at least once every two hours.

Regular inspection of underground mine

28(1) An employer or contractor must prepare a written plan for regular inspections of an underground mine that:

(a) identifies the parts of the mine to be inspected; and

(b) subject to subsection (2), specifies the frequency of inspection for each part of the mine to be inspected, taking into account:

(i) the work to be done in the mine;

(ii) the conditions arising in the mine; and

(iii) the requirements of these regulations.

(2) Inspections must be made at least once during each shift in any underground part of the mine where:

(a) mining is taking place;

(b) drilling or blasting is taking place; or

(c) a worker is working alone.

(3) An employer or contractor must:

(a) appoint a competent person to implement the plan for inspection of a mine;

(b) ensure that the person appointed pursuant to clause (a) records each inspection carried out; and

(c) ensure that any condition relevant to the health or safety of workers on succeeding shifts is recorded in the shift record.

Inspection of equipment and worksite

29 An employer must ensure that each worker inspects his or her worksite and equipment for defects and unsafe conditions at the beginning of each shift, and as necessary after that, to ensure that the worksite and equipment are safe.

Remedying defects, unsafe conditions

30(1) If a defect or unsafe condition that may create a hazard to a worker is identified, an employer or contractor must:

(a) until appropriate steps are taken pursuant to clause (b), take immediate steps to protect the health and safety of any worker who may be at risk; and

(b) as soon as is reasonably practicable, take suitable action to correct the defect or unsafe condition.

(2) A worker who knows or has reason to believe that a worksite or any equipment under the worker's control is not in a safe condition must:

(a) repair the defect or correct the unsafe condition if the worker is authorized by the employer to do so and is competent to do so; or

(b) as soon as is reasonably practicable, report the condition of the worksite or equipment to the employer.

Entry restrictions

31(1) An employer or contractor must ensure that no worker is required or permitted to enter or work in any part of a mine that is barricaded or fenced off unless the employer or contractor has:

(a) determined the conditions under which entry to or work in that part of the mine is safe; and

(b) clearly explained the conditions mentioned in clause (a) to the worker.

(2) No worker shall enter or work in any part of a mine that is barricaded or fenced off unless the employer or contractor has:

(a) determined the conditions under which entry to or work in that part of the mine is safe; and

(b) clearly explained to the worker the precautions to take for safe entry to or work in that part of the mine.

Report by professional engineer

32 The chief mines inspector may:

(a) require an employer, contractor or owner to supply a report by a professional engineer or professional geoscientist on any matter governed by these regulations if the chief mines inspector has reason to believe that there is a potential danger to any worker employed at that mine; and

(b) specify the time within which the report mentioned in clause (a) must be submitted.

Information re hazards

33 If any of the things mentioned in clauses (a) to (d) may present a hazard to a self-employed person or worker, the employer or contractor must provide that person or worker with documentation containing the most current and relevant information and an evaluation or assessment with respect to the location of those things:

(a) any disused workings;

(b) any rock or stratum that contains or is likely to contain any liquid, including water, or gas;

(c) any material that is likely to flow;

(d) any diamond drill holes.

Controlling movement of strata

34 An employer or contractor must take effective steps to control the movement of strata in all underground excavations to protect the health and safety of workers, including:

(a) if reasonably practicable, supporting the ground by bolting, timbering, shotcreting or screening; and

(b) sounding and scaling as necessary.

Determination of surface subsidence

35 If bedded deposits are mined, the employer, contractor or owner must:

(a) perform a suitable survey to determine the surface subsidence, if any, induced by the mining:

(i) at least every two years in active areas of the mine; and

(ii) at those intervals of time that are directed by the chief mines inspector in inactive areas of the mine; and

(b) retain the information obtained from a survey carried out pursuant to clause (a) indefinitely.

Prevention of inrush

36 An employer, contractor or owner must take all practicable steps to prevent any inrush of any gas, liquid or other material into the workings from any disused workings or strata.

PART VI
Design of Mines

DIVISION 1
General

Change and shower facilities

37(1) An employer, contractor or owner must provide and maintain at a mine:

(a) facilities for workers to change and dry their clothing; and

(b) shower facilities.

(2) Facilities required pursuant to subsection (1) must be appropriately located, suitable, adequate and clean.

(3) An employer, contractor or owner must provide separate facilities for male and female workers for the purposes mentioned in this section.

Fixed ladders underground

38(1) Section 255 of the OHS regulations does not apply to fixed ladders underground.

(2) If a fixed ladder is provided in an underground manway or a shaft, the employer or contractor must ensure that the ladder meets the requirements of this section.

(3) A fixed ladder must be securely held in place at the top and bottom and at any intermediate points that are necessary to prevent sway in the ladder.

(4) The rungs of a fixed ladder must be uniformly spaced with centres that are not less than 250 millimetres and not more than 300 millimetres apart.

(5) A clearance of at least 150 millimetres must be maintained between the rungs on a fixed ladder and the structure to which the ladder is affixed.

(6) The side rails of a fixed ladder must extend at least one metre above any platform, roof or other landing on the structure to which the ladder is fixed, unless suitable handrails are provided.

(7) A fixed ladder must be equipped with suitably sized and sturdily constructed platforms at height intervals of not more than seven metres if the ladder:

(a) is more than seven metres high; and

(b) is inclined more than 50^{o} from the horizontal.

(8) A suitably sized and sturdily constructed platform must be installed at every point at which a fixed ladder is offset.

(9) The size of a ladder opening in a platform, roof or other landing must be sufficient to allow the passage of a worker wearing self-contained breathing apparatus or a stretcher bearing an injured worker.

(10) If a ladder is inclined from the horizontal at 70° or more, the ladder must be offset to cover the openings in platforms.

(11) If a ladder is inclined from the horizontal at more than 50° but less than 70°, the ladder may be continuous through the platforms.

(12) An employer, contractor or owner must ensure that a fixed ladder in an untimbered raise is equipped with guardrails.

Wire rope or chain ladders

39(1) In this section, **"birdcaged wire"** means wire rope that contains a bulge due to the wire rope strands opening or unravelling.

(2) Except during shaft-sinking operations, an employer or contractor must ensure that no ladder made of wire rope or chain is used for climbing purposes.

(3) If a wire rope ladder is used during shaft-sinking operations, the employer, contractor or owner must ensure that no wire rope used in the ladder contains any broken, frayed or birdcaged wires.

Stairways

40 An employer, contractor or owner must ensure that a stairway in a shaft is equipped with suitably placed hand rails if the stairway is inclined to less than 50° from the horizontal.

DIVISION 2
Underground Mines

Application of Division

41 This Division applies to the design of underground mines.

Design of mine

42(1) An employer, contractor or owner must prepare and implement a mine design that:

(a) is based on sound geotechnical engineering practices;

(b) considers, so far as is reasonably practicable, the health and safety of workers;

(c) is prepared under the direction of a qualified person;

(d) consists of drawings, plans, specifications and procedures to be used in the construction and operation of the mine;

(e) takes into account the geology of the mine;

(f) assesses the ground stability of the active and proposed workings of the mine;

(g) takes into account previous occurrences of ground instability;

(h) outlines the geometry of existing and proposed excavations;

(i) specifies the ground support system to be used; and

(j) describes the mining methods to be used, including stope sequencing and blasting methods.

(2) An employer, contractor or owner must ensure that a mine design is assessed and updated under the direction of a qualified person:

(a) annually; and

(b) before any alteration is made to the mine that might significantly affect the ground stability.

Tailings containing cyanide prohibited

43 Unless otherwise permitted by the chief mines inspector, the employer or contractor must ensure that tailings that contain cyanide are not used for filling worked-out areas underground.

Exits to surface

44(1) Subject to subsection (2), an employer, contractor or owner must provide and maintain two independent exits to the surface that meet the requirements of this section.

(2) During the exploration and development phases of an underground mine, an employer, contractor or owner may provide and maintain only one exit to the surface that meets the requirements of this section if the employer, contractor or owner submits to the chief mines inspector, for approval, a written plan that:

(a) outlines the precautions that will be taken to protect the health and safety of workers; and

(b) sets out the phase in which the second exit to the surface will be developed.

(3) The two exits required by subsection (1):

(a) must not be closer to each other than 30 metres at any point; and

(b) must be of sufficient size to provide a safe passageway for workers wearing self-contained breathing apparatuses and carrying a stretcher.

(4) A structure that covers an exit required by subsection (1):

(a) must be constructed to minimize the danger from fire; and

(b) without limiting the generality of clause (a), must be constructed of non-flammable material or metal that is bonded to ground.

(5) An employer or contractor must ensure that:

(a) each exit from an underground mine that is regularly used is inspected monthly by a competent person; and

(b) the person who conducts the inspection mentioned in clause (a) records the particulars of the inspection in the appropriate log or record.

Exits underground

45(1) Subject to subsection (2), an employer, contractor or owner must provide and maintain two exits that meet the requirements of this section from each underground part of a mine in which workers regularly work or travel.

(2) A single exit is permitted from:

(a) a drift or raise while it is being advanced;

(b) a room within a panel while the room is being advanced; and

(c) any other place approved in writing by the chief mines inspector.

(3) Each exit required by subsection (1):

(a) must lead to a different exit to the surface; and

(b) must be designed, constructed and maintained so that any seepage of air from the exhaust side to the fresh air side is kept as low as is reasonably achievable.

(4) An exit required by subsection (1) or (2) must be traversable:

(a) by a worker using self-contained breathing apparatus; and

(b) if reasonably practicable, by a vehicle.

(5) An employer, contractor or owner must ensure that:

(a) each exit required by this section is inspected monthly by a competent person; and

(b) the person who conducts the inspection mentioned in clause (a) records the particulars of the inspection in the appropriate log or record.

(6) Nothing in this section is intended to prohibit the temporary closure of one exit for rehabilitation or other short-term mining activity.

Marking exits, etc.

46(1) An employer or contractor must mark with a clear, legible sign or by other visual means:

(a) each means of exit to the surface from an underground part of a mine; and

(b) each worksite and travelway.

(2) Signs or other visual means of marking an exit must be placed in prominent and conspicuous places.

(3) An employer or contractor must:

(a) post in conspicuous places underground, and in all refuge stations, a current plan of the mine that shows the workings, the ventilation system and the means of exit; and

(b) update the plan mentioned in clause (a) at least quarterly.

Emergency means of exit during power failure

47(1) If exit to the surface from an underground mine is solely by means of shafts that are not equipped with ladders, the employer, contractor or owner must ensure that workers can be safely transported by a conveyance to the surface in the event of a failure of the power transmission system, control system or utility power supply:

(a) by developing emergency work procedures that are approved by the chief mines inspector;

(b) by providing adequate and effective equipment; and

(c) by providing emergency power to the conveyance specified by the chief mines inspector.

(2) An employer or contractor must ensure that:

(a) the conveyance is tested using emergency power at least once annually by a competent person; and

(b) the emergency power source is tested at least quarterly by a qualified person.

(3) An employer or contractor must:

(a) ensure that the details of the testing mentioned in subsection (2) are recorded in the hoisting machinery log book by the person who conducted the test; and

(b) countersign the entries made pursuant to clause (a).

(4) If all means of exit to the surface from an underground mine are solely by means of shafts, the employer, contractor or owner must ensure that the electrical hoisting systems are designed to prevent a fire, in any one location, from disabling all hoists simultaneously.

Procedure where exit from underground restricted

48(1) If an underground mine is to be operated with a single exit to the surface for an extended period because the second exit is unavailable, the employer or contractor must:

(a) develop a written plan in consultation with the committee outlining the precautions that will be taken to protect the health and safety of workers working underground;

(b) submit the plan to the chief mines inspector for approval; and

(c) implement the approved plan, as appropriate.

(2) If exit to the surface from an underground mine is solely by means of shafts that are not equipped with ladders and if only one exit is available and the second exit cannot be brought back into operation within two hours in an emergency, the employer or contractor must ensure that workers are informed immediately of the restricted access.

(3) If exit to the surface from an underground mine is solely by means of shafts that are not equipped with ladders and all shafts are unavailable, the employer or contractor must:

(a) ensure that all work ceases immediately, with the exception of emergency work, including work required to repair an exit; and

(b) if an exit cannot be brought back into operation within 12 hours, ensure that the emergency procedure identified in the fire control and emergency response plan required by section 383 is implemented.

Underground electrical system

49 An employer, contractor or owner must ensure that:

(a) every feeder cable from the surface is protected with a suitable lightning-arrestor near the point of entry of the cable to the mine; and

(b) no lightning-arrestor ground is connected to any rail, track, pipeline or other conductor that enters the mine.

Boundary pillars

50(1) In this section, **"boundary pillar"** means a pillar positioned between two adjoining properties.

(2) If workings on adjoining properties controlled by more than one owner approach each other, the employers, contractors or owners must jointly determine the following to protect the health and safety of workers:

(a) the size of any boundary pillar required; and

(b) if applicable, the method of mining adjacent to that boundary pillar.

(3) The boundary pillar mentioned in subsection (2) must be:

(a) designed by an engineer; and

(b) of a size that is sufficient to protect the health and safety of workers.

(4) If the employers, contractors and owners cannot agree on the size of the boundary pillar mentioned in subsection (2), the total width of the boundary pillar must be at least 30 metres.

DIVISION 3
Open Pit Mines

Application of Division

51 This Division applies to the design of open pit mines.

Design of mine

52(1) An employer, contractor or owner must prepare and implement a mine design that:

(a) is based on sound geotechnical engineering practices;

(b) considers, so far as is reasonably practicable, the health and safety of workers;

(c) is prepared under the direction of a qualified person;

(d) consists of drawings, plans, specifications and procedures to be used in the construction and operation of the mine;

(e) takes into account the geology of the mine;

(f) assesses the ground stability of the active and proposed workings of the mine;

(g) takes into account previous occurrences of ground instability;

(h) outlines the geometry of existing and proposed excavations;

(i) includes a blasting design;

(j) outlines the methods to be used to control water from the strata or from any surrounding bodies of water; and

(k) includes a slope stability monitoring program.

(2) An employer, contractor or owner must ensure that a mine design is assessed and updated under the direction of a qualified person:

(a) annually; and

(b) before any alteration is made to the mine that might significantly affect the ground stability.

Design of haulage roads

53(1) An employer, contractor or owner must ensure that all haulage roads at an open pit mine are designed, constructed and maintained to provide:

(a) a travel width:

(i) that is at least the approved width; or

(ii) if there is no approved width pursuant to subclause (i), that is, not including the width of a berm mentioned in subsection (2):

(A) at least 2.5 times the width of the widest haulage vehicle used on the road where dual lane traffic exists; and

(B) at least twice the width of the widest haulage vehicle used on the road where single lane traffic exists; and

(b) a surface and slope that reduce, as far as is reasonably practicable, the danger of vehicles slipping or skidding.

(2) If there is a drop-off greater than three metres from a haulage road at an open pit mine, an employer, contractor or owner must ensure that:

(a) on haulage roads constructed on or after the coming into force of these regulations, a berm at least 75% of the height of the largest tire on any vehicle used on the road is constructed and maintained along the edge of the road; and

(b) to allow for drainage or snow clearance, no opening in a berm is greater in width than the width of the blade of any equipment used to construct or maintain the opening.

(3) If a haulage road is constructed at an open pit mine on or after the coming into force of these regulations, and any of the circumstances mentioned in subsection (4) exists, an employer, contractor or owner must do all of the following:

(a) if reasonably practicable, provide emergency runaway lanes or retardation barriers that are:

(i) placed at suitable locations; and

(ii) capable of bringing a runaway vehicle to a controlled stop;

(b) maintain and clearly mark the emergency runaway lanes or retardation barriers.

(4) Subsection (3) applies if:

(a) both of the following circumstances exist:

(i) the grade of the haulage road:

(A) for articulated bottom-dump trucks exceeds 6%; or

(B) for non-articulated end-dump trucks exceeds 8%; and

(ii) a sharp bend in the haulage road exists that creates a risk to the operator of a vehicle; or

(b) the chief mines inspector directs that the employer, contractor or owner comply with subsection (3).

Boundary approach limit

54(1) In this section, **"boundary approach limit"** means the minimum distance that an excavation in an open pit mine may approach a boundary between two adjoining properties.

(2) If workings on adjoining properties controlled by more than one owner approach each other, the employers, contractors or owners must jointly determine the following to protect the health and safety of workers:

(a) the boundary approach limit; and

(b) the method of mining to be used in the area adjacent to the boundary approach limit.

(3) If the employers, contractors or owners cannot agree on the size of the boundary approach limit mentioned in subsection (1), the employers, contractors or owners must ensure that:

(a) in the case of unconsolidated materials:

(i) the boundary approach limit on each side of the boundary between two adjoining properties is not less than one-half the depth of the open pit mine; and

(ii) all material that sloughs off within the area mentioned in subclause (i) is left to form a natural slope and is not removed for any reason; and

(b) in the case of consolidated materials, the boundary approach limit on each side of the boundary between two adjoining properties is at least five metres.

Benches

55 If falling material may endanger a worker as a result of the height of a working face or the nature of the material, the employer or contractor must ensure that the mine is provided with benches at suitable levels.

Maximum working face height

56 An employer or contractor must ensure that the height of a working face does not exceed the maximum height of the loading equipment used plus two metres, unless permitted by the chief mines inspector.

PART VII
Work Practices and Procedures

Interpretation of Part

57 In this Part, **"raise climber"** means a mechanically operated platform that is:

(a) suspended from a track;

(b) powered by air motors or electric motors; and

(c) used in a raise:

(i) to transport workers and materials; or

(ii) as a temporary staging from which workers may perform mining procedures.

Guarding ore passes, manways, raises, etc.

58(1) If reasonably practicable, an employer or contractor must ensure that:

(a) the top of every ore pass, manway or other opening into which a worker could step or fall is:

(i) covered with a securely installed covering; or

(ii) guarded by an adequate barrier; and

(b) the top of every raise or other opening to a level into which powered mobile equipment could fall is protected by a barrier that has been designed by a professional engineer and built to the design specifications.

(2) If a manway is being repaired or is unsafe for travel, an employer or contractor must ensure that:

(a) access to the manway is restricted; and

(b) the top and bottom of the manway is posted with warning signs or permanent markings clearly indicating whether the manway is open or closed to workers.

Protection of workers pulling chutes

59(1) If a worker is required to pull a chute, the employer or contractor must ensure that:

(a) the volume of any liquid entering a mine opening used for the passage of ore, waste or other material by gravity is minimized to the extent that is reasonably practicable;

(b) a mechanical locking device is installed on power operated chute gates so that the gates may be locked in either the open or closed position; and

(c) the chute is designed so that a power failure will not cause the chute gates to open.

(2) An employer or contractor must ensure that no worker pulling a chute is positioned so that the worker's safe exit is impeded by an uncontrolled discharge of liquid or solid material from the chute.

(3) If a worker is required or permitted to work in a chute or at a worksite that may be affected by the flow of material from the chute, the employer or contractor must ensure that:

(a) the power supply to a conveyor or gate that controls the flow of material into the chute is disconnected, locked out and tagged; and

(b) subject to subsection (4), gates are locked in the closed position to prevent the flow of material.

(4) If it is necessary for a worker to work with a chute open, the employer or contractor must ensure that a suitable bulkhead is installed above the worker to divert or arrest the flow of material.

If material is hung up

60(1) Subject to subsection (2), if material is hung up in a mine opening that is used for the passage of ore, waste or other material by gravity, the employer or contractor must ensure that no worker is required or permitted to enter the opening until a competent person authorized by the employer or contractor:

(a) examines the stability of the hang-up;

(b) determines the method of safely removing the hang-up; and

(c) supervises the removal of the hang-up.

(2) An employer or contractor may permit a worker who is supervised by the authorized person mentioned in subsection (1) to enter a mine opening mentioned in subsection (1) for the purpose of removing the hang-up.

Loading at drawpoint

61 Except if remote-controlled powered mobile equipment is used, an employer must ensure that the operator of powered mobile equipment that is being used to remove material from a drawpoint does not move the equipment beyond a point subtending a 45^{o} angle back from the brow of the drawpoint to the back of the bucket once the brow is open.

Diamond drill holes

62(1) In this section, **"point of intersection"** means the point at which a diamond drill hole intersects with a drift.

(2) An employer or contractor must ensure that the location of every diamond drill hole is marked on the appropriate working plan.

(3) If blasting is to be conducted within eight metres of a diamond drill hole, an employer or contractor must securely fence off or guard the collar of the drill hole and any other possible point of intersection to prevent worker access to any point of intersection.

(4) The employer or contractor must mark the collar of a diamond drill hole and each point of intersection with a single capital letter "H" measuring 300 millimetres by 300 millimetres in clearly visible paint, placed within one metre of the collar or point of intersection.

Open pit precautions

63(1) At an open pit mine, the employer or contractor must ensure that:

(a) all loose material is scaled or trimmed from the side of the open pit mine where a worker is required or permitted to be present;

(b) except for berms, all equipment, unconsolidated material, rocks and construction materials are kept at least two metres from the edge of the open pit mine; and

(c) the slope of any pile of unconsolidated material adjacent to the open pit mine is at an angle not steeper than the least of:

(i) one horizontal to one vertical; and

(ii) the natural angle of repose.

(2) An employer or contractor must ensure that no vehicle is operated, and no vehicle or heavy load is located, near the edge of an open pit mine so as to affect the stability of the walls of the open pit mine.

(3) If unconsolidated material is being worked at an open pit mine, the employer or contractor must ensure that there is no undermining of the working face.

(4) If an open pit mine is being worked in benches, the employer or contractor must ensure that any accumulation of loose rock on a bench that may endanger a worker is removed.

Stagings

64(1) If wooden stagings are used, the employer or contractor must ensure that:

(a) the stagings are designed to support at least three times the load to which it may be subject;

(b) the planks are sound and free of defects; and

(c) the planks are not painted or treated to obscure the grain.

(2) When constructing a staging, the worker must ensure that the planks are nailed or otherwise secured to prevent the planks from slipping off their supports.

Steeply inclined raises

65(1) Subject to subsection (3), an employer or contractor must ensure that a raise that is inclined at more than 50E from the horizontal and is to be driven more than 20 metres along the slope is divided into at least two compartments, one of which is maintained as a ladderway and equipped with fixed ladders.

(2) An employer or contractor must ensure that the timbering in a raise described in subsection (1) is installed:

(a) as near to the working face as is reasonably practicable; and

(b) so that the distance between the working face and top of the timbering does not exceed eight metres.

(3) If a raise climber or similar equipment is used, a raise that is inclined at more than 50E from the horizontal may be driven more than 20 metres along the slope without being divided into compartments.

Raise climbers

66(1) An employer, contractor or owner must ensure that:

(a) a raise climber is designed, constructed, installed, operated and maintained to safely perform any task for which it is used; and

(b) a raise climber platform is designed by a professional engineer to withstand the expected load.

(2) An employer or contractor must ensure that a raise climber:

(a) is provided with a durable and clearly legible indication of the load rating that is readily accessible to the operator at the control station;

(b) has at least two independent means of braking, each of which is:

(i) capable of stopping the raise climber and holding it in place; and

(ii) designed to be tested independently of the other; and

(c) has an adequate and suitable means of communication between the worker operating the controls and the worker on the raise climber platform, if they are different persons.

(3) Except where the track on which a raise climber operates is being extended, the employer or contractor must ensure that a raise climber has a stop block installed to prevent the raise climber from being taken beyond the end of the track.

(4) An employer or contractor must ensure that:

(a) the raise climber service area is designed and operated to prevent workers from exiting the raise climber while it is below the open raise; and

(b) an emergency procedure is developed, and the means to carry out the procedure are available, to remove workers safely from a raise climber that is stalled at a position other than at the raise climber service area.

Electrically powered raise climbers

67(1) An employer or contractor must ensure that an electrically powered raise climber:

(a) is operated at a voltage less than 750 volts;

(b) is protected by a ground fault interrupt system;

(c) has a conspicuous and accessible control at the raise climber service area to isolate the power from the raise climber;

(d) has a control switch on the raise climber to isolate the power from the motor; and

(e) has a means of disconnecting and locking out the main power supply.

(2) If electric detonators are being used, an employer or contractor must ensure that the power supply to an electrically powered raise climber is disconnected while a round in the raise is being charged with explosive.

Inspection of raise climbers

68(1) At the commencement of each shift, an employer or contractor must ensure that the brakes of a raise climber are inspected and tested by a competent worker to ensure that the brakes are in a safe working condition.

(2) Before a raise climber is started, an employer or contractor must ensure that a competent worker makes a complete visual inspection of the raise climber and the surrounding area to ensure that no worker is endangered by the start-up of the raise climber.

(3) An employer or contractor must ensure that a raise climber is inspected weekly by a competent person to identify any defects or unsafe conditions.

Inspection of critical parts

69(1) In this section, **"critical part"** means each part of a raise climber that, if it failed, would cause the uncontrolled descent of the raise climber.

(2) An employer or contractor must ensure that the critical parts of a raise climber are subjected to a thorough inspection, including non-destructive testing, under the supervision of a professional engineer:

(a) before the raise climber is first put into service;

(b) during every major overhaul; and

(c) at least once in every 4,000 hours of use or every 12 months, whichever occurs first.

Raise climber log book

70 An employer or contractor must:

(a) provide a raise climber log book for each raise climber and ensure that the raise climber log book is kept readily available;

(b) ensure that the details of each inspection required pursuant to section 68, including any defects discovered as a result of the inspection, are recorded in the raise climber log book by the person who conducted the inspection; and

(c) countersign the entries made pursuant to clause (b) on a regular basis.

Operation of raise climbers

71(1) An employer or contractor must:

(a) designate a worker to operate a raise climber;

(b) ensure that the designated operator is trained in the safe operation of the raise climber; and

(c) ensure that no worker other than a designated operator operates a raise climber.

(2) An operator of a raise climber must not operate the raise climber unless:

(a) the operator has determined the weight of the load; and

(b) the load is less than the rated load for the operating conditions.

Raise climber as only means of exit

72 If a raise climber provides the only means of exit from a worksite, the employer or contractor must ensure that no worker is required or permitted to remain in that worksite if the raise climber is removed from the worksite for any reason.

Dredges

73(1) An employer or contractor must ensure that a dredge used at a mine is equipped with:

(a) adequate and suitable fire-fighting equipment;

(b) adequate guard rails to prevent any worker from falling into the water;

(c) a suitable gangplank for exit to a permanent walkway;

(d) a ladder on each side of the dredge that extends from the deck to the water level for rescue purposes;

(e) an adequate means of exit from the engine room and control cabin; and

(f) an effective means of communicating with workers on the dredge.

(2) If a worker is required or permitted to be on a dredge that is not connected to the shore by a walkway, the employer or contractor must ensure that at least two suitable boats, one based at the dredge and the other based at the shore, are available for immediate use.

(3) An employer or contractor must ensure that no flammable materials, other than lubricant and fuel necessary for 24 hours of operation, are stored on a dredge.

(4) The employer or contractor must ensure that every dredge put into service on or after the coming into force of these regulations is equipped with lightning protection system that conforms to the requirements of Canadian Standards Association standard CAN/CSA-B72-M87 (Reaffirmed 1998), Installation Code for Lightning Protection Systems.

(5) The employer or contractor must ensure that a dredge put into service before the coming into force of these regulations and not equipped in accordance with subsection (4) is not used during an electrical storm.

Blast furnaces and smelters

74(1) If there is a blast furnace or smelter at a mine, the employer or contractor, in consultation with the committee, must:

(a) develop and implement a work plan for the operation of the blast furnace or smelter to ensure the health and safety of workers who work at or near the blast furnace or smelter;

(b) make a copy of the work plan readily available to workers who work at or near the blast furnace or smelter; and

(c) ensure that all workers and self-employed persons comply with the work plan.

(2) A work plan for the operation of a blast furnace or smelter must be in writing and include provisions for:

(a) supervision of the operation;

(b) training of workers;

(c) adequate safety equipment;

(d) any necessary limits on the use of equipment at or near the blast furnace or smelter;

(e) prevention of any dangerous spilling or splashing of molten metal or material;

(f) warnings to be given and precautions to be taken when molten metal or material is to be moved;

(g) control of any contact of molten metal or material with cold, damp surfaces; and

(h) an effective maintenance program for equipment and vehicles used at or in connection with the blast furnace or smelter.

PART VIII
Shaft-Sinking Operations

General duty

75 An employer, contractor or owner must ensure that all shafts in a mine are designed, constructed and maintained to safely bear the loads that may reasonably be anticipated to be placed on them.

Notice of shaft-sinking operation

76 As soon as is reasonably possible but not later than 90 days before a shaft-sinking operation commences, an employer, contractor or owner must give notice of the shaft-sinking operation by submitting to the chief mines inspector:

(a) the drawings and specifications for:

(i) the sinking procedure to be used;

(ii) the shaft lining program;

(iii) the equipment to be used in the sinking process, including dump doors; and

(iv) the shaft collar; and

(b) the primary and secondary signal systems to be used during a shaft-sinking operation.

Sinking shaft in sedimentary strata

77(1) If a shaft is to be sunk in an area underlain by water-bearing or brine-bearing sedimentary strata, the employer, contractor or owner must give written notice to the chief mines inspector of any intention to drill any hole for the purpose of consolidating a shaft site by a grouting or freezing method.

(2) A notice required by subsection (1) must:

(a) be given as soon as is reasonably possible but not later than 90 days before drilling begins;

(b) include the location of the proposed shaft and the number and depth of the holes to be drilled; and

(c) if subsection (3) applies, include the radius and specifications of the pillar to be left around the shaft.

(3) If a shaft is to be sunk in an area underlain by water-bearing or brine-bearing sedimentary strata, the employer, contractor or owner must ensure that:

(a) a substantial pillar is left around the shaft at each working horizon that is adequate to protect the shaft from any damage resulting from movement of the strata; and

(b) a professional engineer determines the appropriate radius and other specifications of the pillar to meet the requirements of clause (a).

Shaft collar

78 An employer, contractor or owner must ensure that every shaft or raise opening at the surface is provided with a collar that is:

(a) designed and constructed in accordance with sound engineering practices to prevent any person or equipment from falling into the shaft or raise;

(b) made of concrete or equivalent material; and

(c) if reasonably practicable, secured to the bedrock.

Design of shaft-sinking equipment

79(1) An employer, contractor or owner must ensure that the conveyance used in the shaft sinking, its components, the hoisting system and mountings, and the crosshead are designed, constructed, installed, operated and maintained so that the conveyance is capable of transporting workers safely.

(2) Without limiting the generality of subsection (1), if a shaft is being sunk, an employer, contractor or owner must ensure that:

(a) the conveyance measures at least 1 070 millimetres from the floor of the conveyance to the top of the side of the conveyance; and

(b) the suspension members of the conveyance are securely attached to the hoist rope.

(3) If the distance between the shaft collar and the shaft bottom is greater than 60 metres, the employer or contractor must ensure that:

(a) a suitable crosshead is used at the point of attachment of the suspension members to the hoist rope; and

(b) the crosshead:

(i) lands on at least two chairs at the bottom crosshead stop to prevent distortion of the crosshead;

(ii) is equipped with a safety device for attaching the conveyance to the crosshead so that the crosshead cannot jam in the shaft compartment without stopping the conveyance; and

(iii) is of a type that encloses the conveyance unless the shaft compartment is tightly lined and the conveyance is barrel-shaped.

(4) An employer or contractor shall not require or permit persons to be transported in a conveyance during a shaft-sinking operation unless the requirements of subsections (1) to (3) are met.

Shaft lining

80(1) If a shaft is to be lined with timber, an employer or contractor must ensure that:

(a) the timber is suitable and of adequate strength; and

(b) the lining is installed and maintained to a distance of not less than 15 metres from the bottom of the shaft.

(2) If a shaft is to be lined with concrete or steel and concrete, an employer, contractor or owner must:

(a) ensure that the lining is of suitable construction and is strong enough to withstand the maximum load that may reasonably be anticipated;

(b) specify a reasonable maximum distance to be permitted between the lower extremity of the lining and the shaft bottom and notify the chief mines inspector of that distance; and

(c) ensure that the lining, whether temporary or permanent, is installed and maintained to a distance from the bottom of the shaft that is not less than the distance specified pursuant to clause (b).

Doors

81(1) During a shaft-sinking operation, an employer or contractor must ensure that dump doors meeting the requirements of subsection (2) are installed at the conveyance dumping position.

(2) The dump doors required by subsection (1) must:

(a) prevent the conveyance from being dumped while the dump doors are open;

(b) prevent any material from falling down the shaft while the conveyance is being dumped; and

(c) be equipped with devices that mechanically latch the dump doors out of the shaft compartment automatically when the dump doors are fully open.

(3) During shaft-sinking operations, an employer or contractor must ensure that service doors are:

(a) installed at the collar; and

(b) equipped with devices that mechanically latch the service doors out of the shaft compartment automatically when the service doors are fully open.

(4) An employer or contractor must ensure that the doors required by subsections (1) and (3) are closed while a conveyance is:

(a) being loaded with tools or materials; or

(b) being unloaded.

(5) Except when a closed crosshead that provides equivalent protection for persons is in use, an employer or contractor must ensure that the doors required by subsections (1) and (3) are closed while persons are entering or leaving a conveyance.

Signal lights

82 An employer or contractor must ensure that dual lights are installed at the hoist operator's position that activate automatically to indicate to the hoist operator that:

(a) the crosshead and conveyance are descending together from the dumping position; and

(b) the dump doors and service doors are closed or open.

Multi-deck stage

83 If a multi-deck stage is used during a shaft-sinking operation, an employer, contractor or owner must ensure that:

(a) the multi-deck stage is:

(i) designed by a professional engineer; and

(ii) constructed, installed, operated and maintained in accordance with the design mentioned in subclause (i); and

(b) any ropes used with the multi-deck stage meet the load factor requirements set out in section 160.

Open hooks prohibited

84 During a shaft-sinking operation, an employer or contractor must ensure that no open hooks are used to suspend any staging, working platform, conveyance or other equipment in the shaft.

Means of escape

85(1) Subject to subsection (2), during a shaft-sinking operation, an employer or contractor must ensure that a suitable manway is constructed and maintained in the shaft from the collar to the sinking stage.

(2) An employer or contractor may install an independently-powered escape conveyance in a shaft in place of a manway, but the conveyance must be fully operational before the shaft exceeds a depth of 30 metres.

(3) The employer or contractor must provide an auxiliary ladder that:

(a) extends from the permanent ladder or the sinking stage to the bottom of the shaft; and

(b) is located and attached so that it can be promptly lowered to any point at which workers are working.

Procedure before hoisting a sinking bucket

86 During shaft-sinking operations, an employer or contractor must ensure that:

(a) a sinking bucket is not moved from the top or bottom of a shaft until the worker in charge of the sinking bucket has steadied the sinking bucket;

(b) a sinking bucket is not moved from the bottom of a shaft until the worker in charge of the sinking bucket has examined the sinking bucket and has removed any mud or other material that may be sticking to it; and

(c) before a sinking bucket containing loose rock or material is moved, no loose rock or material projects above the rim of the sinking bucket.

Riding in sinking bucket

87(1) During shaft-sinking operations, no employer or contractor shall require or permit any person:

(a) to ride on the rim or outside of a sinking bucket; or

(b) subject to subsection (2), to ride in a sinking bucket that contains ore, waste or any other materials.

(2) Small items, including tools, may be carried in a sinking bucket if:

(a) it is necessary to do so; and

(b) adequate precautions are taken to ensure the safety of workers being transported in the sinking bucket.

(3) An employer or contractor must ensure that, during shaft-sinking operations:

(a) the sinking bucket used to transport workers is in the charge of a competent worker authorized by the employer or contractor; and

(b) no person other than an authorized competent worker gives the signals for the movement of a sinking bucket used to transport workers.

(4) A worker being transported in a sinking bucket must obey the instructions of the authorized competent worker in charge of the sinking bucket.

Lowering sinking bucket to bottom of shaft

88 Subject to section 89, if a sinking bucket is being lowered to the bottom of a shaft during shaft-sinking operations, the employer or contractor must ensure that:

(a) the sinking bucket is stopped at a distance of not less than five metres and not more than 10 metres from the bottom of the shaft and, beyond that point, lowered slowly and only on a separate signal from the worker in charge of the sinking bucket; and

(b) while the crosshead is being chaired and released, the hoist is operated at creep speed only.

Lowering workers after blast

89 During shaft-sinking operations, on the first trip in which workers are transported down a shaft after a blasting operation, the employer or contractor must ensure that:

(a) the sinking bucket does not transport more workers than are necessary to make a proper examination of the parts of the shaft that might have been affected by the blast;

(b) subject to clause (c), the sinking bucket is not lowered beyond a point in the shaft beyond which the health or safety of workers may be endangered and, in any case, is not lowered beyond a point that is less than 15 metres above the top of the blasting set or the multi-deck stage; and

(c) beyond the point mentioned in clause (b), the sinking bucket is lowered slowly and only on a separate signal from the worker in charge of the sinking bucket.

Overhead protection

90 During shaft-sinking operations, if work in the shaft is to be carried out at more than one elevation at the same time, the employer or contractor must ensure that workers in the lower elevations are protected from the danger of falling objects or materials by installing a secure covering that:

(a) extends over a sufficient portion of the shaft to afford adequate protection to the workers below; and

(b) is capable of withstanding the maximum load that may reasonably be anticipated.

Working below shaft mucking machine

91 An employer or contractor must not require or permit a worker to work on or below a shaft mucking machine unless:

(a) the shaft mucking machine is secured in position by an elevating system that is capable of supporting the full load of the machine; and

(b) any ropes used with the shaft mucking machine meet the load factor requirements set out in section 160.

PART IX
Shaft Safety and Shaft Inspections

Notice of shaft design changes

92 Before making any significant change in the design, construction or layout of a shaft or any change in the design or construction of equipment used in a shaft, an employer, contractor or owner must:

(a) as soon as is reasonably possible, give notice of the proposed change by submitting to the chief mines inspector:

(i) all details of the proposed change; and

(ii) any drawings and specifications that the chief mines inspector considers necessary; and

(b) ensure that the proposed change mentioned in clause (a) is designed by a professional engineer.

Lining of compartments

93(1) Except during shaft-sinking operations, the employer or contractor must ensure that every shaft is lined at all levels and at the collar to protect workers from falling material and to keep workers from coming into contact with a conveyance or counterweight.

(2) A lining required by subsection (1):

(a) must be constructed of material that is strong enough to contain any falling material or supplies within the shaft;

(b) must, if material or supplies are transported in the cage compartment:

(i) extend above the collar and each level by a distance equal to the height of the conveyance plus two metres; and

(ii) extend below the collar and each level by a distance of at least two metres; and

(c) may contain an opening in the side through which materials or workers are loaded on or off the conveyance.

(3) An employer or contractor must ensure that there is a substantial enclosure above the shaft within the headframe to prevent inadvertent worker access to the shaft and to protect workers in the headframe from falling material.

(4) If a shaft constructed after 1978 contains a skip compartment and a cage compartment, the employer or contractor must ensure:

(a) that the skip compartment is separated from the cage compartment by a substantial partition that extends the length of the shaft; or

(b) that workers and materials are not transported in the shaft at the same time.

(5) If a counterweight is used in a shaft, the employer or contractor must ensure that the counterweight operates in a separate compartment or is guarded so that the counterweight does not endanger workers at pass points or at any level or other point of access to the shaft.

Manways

94 If a shaft containing a conveyance is equipped with a manway, an employer, contractor or owner must ensure that:

(a) the manway is separated from the hoisting or counterweight compartments of the shaft by:

(i) a substantial heavy mesh screen with a maximum opening of five centimetres; or

(ii) another suitable partition that will prevent:

(A) a falling object from entering the manway; and

(B) an object in the manway from intruding into the hoisting or counterweight compartment; or

(b) access to the manway is controlled so that the manway cannot be used while material is being hoisted in the shaft.

Rescue from hoist - shaft without manway

95(1) If a worker may be transported by a hoist in a shaft that is not equipped with a manway, the employer, contractor or owner must:

(a) develop procedures for the rescue of a worker trapped in a conveyance in the shaft;

(b) provide equipment that is adequate and suitable for the procedures mentioned in clause (a); and

(c) subject to subsection (2), annually test the procedures and equipment required by clauses (a) and (b).

(2) If the use of an off-site portable emergency hoist is an element of the procedures developed pursuant to subsection (1), the employer, contractor or owner must ensure that the portable hoist is tested on site:

(a) at each shaft every five years; and

(b) after any alteration in the headframe that may affect the operation of the portable hoist.

Access to shafts

96 At each level or other point of access to the workings from the shaft, an employer or contractor must ensure that the following are provided:

(a) a safe travelway to the workings from the hoisting compartment;

(b) a safe travelway from each shaft manway to the workings;

(c) adequate standing room adjacent to the shaft.

Guarding of shaft openings

97(1) Subject to subsections (2) to (4), an employer, contractor or owner must ensure that every shaft opening is securely fenced, covered or otherwise guarded to prevent workers, material or equipment from falling into the shaft.

(2) Except where the hoisting compartment at a shaft station is securely closed off, an employer or contractor must ensure that a substantial gate is installed at each shaft opening at the surface, at each level and at each loading pocket.

(3) An employer or contractor must ensure that a gate required by subsection (2):

(a) is designed and constructed to withstand the impact of a vehicle, other than powered mobile equipment;

(b) has a clearance beneath its lower edge that is not greater than 40 millimetres; and

(c) is kept closed except:

(i) when the conveyance is being loaded or unloaded at the shaft station; or

(ii) during shaft station maintenance.

(4) If it is necessary to temporarily remove from a shaft opening a fence or cover required by subsection (1) or a gate required by subsection (2), the employer or contractor must ensure that:

(a) the shaft opening is otherwise guarded or access to it is restricted; and

(b) the fence, cover or gate is replaced as soon as is reasonably practicable.

Shaft obstructions

98(1) In this section, **"shaft obstruction"** means:

(a) any equipment with moveable parts that, when installed in a shaft, may interfere with the free passage of the conveyance; or

(b) any door installed in a shaft that, when fully or partially closed, may interfere with the free passage of the conveyance.

(2) If there is a shaft obstruction, the employer or contractor must ensure that:

(a) any moveable part or door is restrained from projecting into the shaft by a positive locking device; and

(b) dual position-indicating lights that meet the requirements of subsection (3) are installed at the hoist operator's position.

(3) For the purposes of clause (2)(b):

(a) the dual position-indicating lights must:

(i) include:

(A) a red light that turns on when any moveable part or door is not locked in a safe position; and

(B) a green light that turns on when there is no moveable part or door projecting into the shaft compartment; and

(ii) be designed and installed so that the green light does not turn on until a protruding moveable part or door is fully retracted; and

(b) the switches that turn on the red and green lights must be activated directly by the moveable part or door that constitutes the shaft obstruction.

(4) Before a shaft obstruction is installed, the employer or contractor must:

(a) prepare a procedure for safely working with shaft obstructions;

(b) record the procedure in the hoist operator's log book; and

(c) post copies of the procedure in appropriate locations near the shaft.

Devices for landing conveyance

99(1) An employer or contractor must ensure that all chairs:

(a) are designed by a professional engineer; and

(b) are installed and maintained to safely land the conveyance.

(2) If chairs are used for the purpose of landing a conveyance at any point in a shaft other than at the lowest point of travel, the employer or contractor must ensure that the chairs:

(a) are installed:

(i) to fall clear and remain clear of the shaft compartment when the conveyance is raised off the chairs; and

(ii) so that the chairs do not distort the conveyance; and

(b) are operable only from outside the conveyance.

Barrier to water in shaft bottom

100 Except during shaft-sinking operations or sump cleaning operations, an employer or contractor must ensure that a barrier or other suitable device is installed in the shaft to prevent a conveyance from being lowered into water in the bottom of the shaft.

Isolating the shaft station

101 The employer, contractor or owner must ensure that each shaft station in a multi-level mine can be secured from the workings by doors that are designed, constructed, installed and maintained so that any seepage of air from the workings is kept as low as is reasonably achievable.

Weekly shaft inspection

102 An employer or contractor must ensure that each shaft, including the walls, lining, guides and compartments, and all equipment within each shaft, is inspected by a competent person at least weekly to determine whether the shaft and its components and equipment are in safe working condition.

Annual headframe inspection

103 An employer or contractor must ensure that the headframe of a shaft, including the foundation, backlegs, sheave deck, drum deck, suspension deck, dump, bin and bin supports, is inspected by a competent person at least annually.

Shaft inspection log book

104 An employer or contractor must:

(a) provide a shaft inspection log book for each shaft and ensure that the book is kept readily available to the hoist operator and to workers conducting shaft inspections or shaft maintenance;

(b) ensure that the details of each inspection made, investigation conducted, defect repaired or unsafe condition corrected are recorded in the shaft inspection log book by the person who made the inspection, conducted the investigation, repaired the defect or corrected the unsafe condition; and

(c) countersign the entries made pursuant to clause (b) on a regular basis.

Working in shaft

105(1) An employer or contractor must ensure that:

(a) no worker works or conducts an inspection in a shaft or in a part of a headframe not isolated from the shaft while hoisting operations are in progress, unless the hoisting operations are necessary for doing that work or conducting that inspection;

(b) no worker works or conducts an inspection in a shaft or in any shaft station, loading pocket, pump station or other opening into the shaft or headframe unless the worker is protected against:

(i) accidental contact with a moving conveyance; and

(ii) being struck by a falling object;

(c) no worker enters or crosses a compartment of a shaft in which hoisting operations are being carried on, except for the purpose of entering or leaving the conveyance in that compartment; and

(d) no worker works below a loading pocket unless the loading pocket has been adequately secured to prevent any inflow of material.

(2) Before any work or inspection mentioned in subsection (1) is performed and before a worker enters or crosses a compartment mentioned in clause (1)(c), an employer or contractor must ensure that:

(a) operational procedures are developed to protect worker health and safety;

(b) a competent person notifies the hoist operator that the work or inspection is about to begin or that a worker is about to enter or cross the compartment, as the case may be; and

(c) the hoist operator implements the procedures established pursuant to clause (a).

(3) The employer or contractor must:

(a) ensure that the notification mentioned in clause (2)(b) is recorded in the hoist operator's log book by the hoist operator; and

(b) countersign the entries made pursuant to clause (a) on a regular basis.

(4) If a worker is required or permitted to be below a staging or suspended work platform in a shaft or raise, or to be on a staging or suspended work platform that is being moved, the employer or contractor must ensure that the staging or suspended work platform is equipped with a secondary suspension system that will prevent the staging or platform from falling if the primary suspension system fails.

(5) While a staging or suspended work platform is being moved, the employer or contractor must ensure that only the workers who are required to move the staging or platform are required or permitted to be on it.

PART X
Hoists and Hoisting

DIVISION 1
General Requirements

General duty re hoists

106 An employer, contractor or owner must ensure that all hoists and related equipment:

(a) are designed, installed, operated and maintained to safely bear the loads they are expected to bear; and

(b) meet the requirements set out in Divisions 1 and 2 of this Part.

General duty re ropes

107 An employer, contractor or owner must ensure that all shaft ropes:

(a) are safe for the loads they are expected to bear; and

(b) meet the requirements set out in Division 3 of this Part.

General duty re log books, record books

108 An employer or contractor must ensure that the log books and records required by this Part with respect to a hoist or rope:

(a) are kept at the place of employment where the hoist or rope is located; and

(b) are readily available to those persons required by these regulations to make entries in those log books and records.

Hoisting machinery log book

109 An employer or contractor must:

(a) provide a hoisting machinery log book for each hoist in a mine;

(b) ensure that a report is recorded in the hoisting machinery log book for:

(i) every inspection or examination that is conducted on the mechanical components of the hoist, whether specifically required by these regulations or not;

(ii) every failure or accident involving mechanical components of the hoist, the hoisting rope, conveyance or any other part of the hoisting, dumping or loading equipment;

(iii) any action taken as a result of a matter mentioned in subclause (i) or (ii); and

(iv) any maintenance, correction or repair work carried out on mechanical components of the hoist, the hoisting rope, conveyance or any other part of the hoisting, dumping or loading equipment; and

(c) countersign the entries made pursuant to clause (b) at least weekly.

Electrical hoisting equipment log book

110 An employer or contractor must:

(a) provide an electrical hoisting equipment log book for each electrical hoist in a mine;

(b) ensure that a report is recorded in the electrical hoisting equipment log book for:

(i) every inspection or examination that is conducted on the electrical components of the hoist and all related equipment, whether specifically required by these regulations or not;

(ii) every failure or accident involving the electrical components of the hoist and all related equipment;

(iii) any action taken as a result of a matter mentioned in subclause (i) or (ii); and

(iv) any maintenance, correction or repair work carried out on the electrical components of the hoist and all related equipment; and

(c) countersign the entries made pursuant to clause (b) at least weekly.

Rope record book

111(1) An employer or contractor must provide a rope record book for each hoisting compartment.

(2) An employer or contractor must ensure that all entries made in the rope record book pursuant to these regulations are countersigned within one week of the entry being made.

Hoist operator's log book

112(1) An employer or contractor must provide a hoist operator's log book for each hoist.

(2) An employer or contractor must ensure that the following information is recorded in the hoist operator's log book:

(a) any inspection, examination, test or maintenance of brakes and clutches conducted pursuant to section 196;

(b) for each working shift, a report of the condition of the signalling apparatus;

(c) any special instructions received from a person who conducts an inspection involving the safety of persons, signed by the person issuing the instructions;

(d) a report of the test of overwind and underwind devices conducted pursuant to section 197, reviewed and signed by the hoisting operator assuming duty for the next shift;

(e) the results of the trial trip tests conducted pursuant to clause 161(2)(b) and section 198;

(f) a notation to the hoist operator assuming duty for the next shift of any special circumstance or matter affecting the operation of the hoist or the safety of persons;

(g) a report of any action taken pursuant to a report recorded in the hoist operator's log book;

(h) the times when the hoist operator started and finished a shift.

(3) An employer or contractor must:

(a) ensure that the details of each inspection, examination, test, or maintenance, correction or repair action required pursuant to this section are recorded in the hoist operator's log book and signed; and

(b) countersign the entries made pursuant to clause (a) at least weekly.

Mine hoist certificate

113(1) Before a hoist is put into service at a mine for the first time, the employer, contractor or owner must ensure that a mine hoist certificate with respect to the hoist has been obtained from a professional engineer who is competent in the design of mine hoists.

(2) The mine hoist certificate mentioned in subsection (1) must set out:

(a) the maximum permissible total rope pull for the conditions under which the hoist is to be operated;

(b) the maximum permissible suspended load;

(c) in the case of a friction hoist, the maximum permissible unbalanced load; and

(d) the maximum number of persons that may be transported on the conveyance, calculated in accordance with subsection (3).

(3) The maximum number of persons that may be transported on a conveyance is the number N calculated in accordance with the following formula:

$$N = \frac{85\% \times R}{90}$$

where R is the rated load of the conveyance expressed in kilograms.

(4) An employer, contractor or owner must ensure that:

(a) a copy of the mine hoist certificate is posted at the hoist operator's position on the hoist; and

(b) the information required pursuant to clauses (2)(a) to (d), as set out in the mine hoist certificate, is posted at each level in the shaft station.

Certificate re modifications

114 An employer or contractor must ensure that no modifications to increase the hoisting capacity of a hoist are made unless a certificate has been obtained from a professional engineer who is competent in the design of mine hoists, certifying that, if the modifications were made to the hoist, the hoist and related equipment:

(a) would be safe for the purpose of transporting workers, material and equipment; and

(b) would meet the requirements of these regulations.

Putting hoist into service

115(1) Before a hoist is put into service in a mine for the first time, or before a hoist is put back into service after significant modifications have been made to it, the employer or contractor must:

(a) give notice of intention to put the hoist into service by submitting the following to the chief mines inspector:

(i) the specifications for the hoist and related equipment;

(ii) drawings showing the general arrangement of the hoist and headframe;

(iii) a copy of the mine hoist certificate for the hoist;

(iv) details of any modification made to the hoist and a copy of the certificate required by section 114;

(b) ensure that:

(i) commissioning tests are conducted to determine whether the hoist is in safe working condition and meets the requirements of these regulations; and

(ii) a professional engineer certifies the test results;

(c) ensure that a competent person:

(i) examines, with an approved non-destructive test method, all of the following for flaws:

(A) all new or significantly modified hoist drums, shafts and brake components;

(B) all new or significantly modified sheaves and sheave wheel shafts;

(C) all new or significantly modified conveyance and counterweight attachments, pins and drawbars; and

(ii) conducts tests to determine whether or not all safety devices and controls in the hoisting system are working properly; and

(d) notwithstanding section 12, ensure that records of the results of all tests required by this subsection are kept indefinitely.

(2) At least three days before commissioning tests required by clause (1)(b) are conducted, an employer or contractor must notify the chief mines inspector of the time at which the tests are to be conducted.

(3) Before a hoist is put back into service after it has been out of service for a period of 15 months or more, the employer or contractor must notify the chief mines inspector of the measures that have been taken to ensure that the hoist is in safe working condition.

Putting automatic controls into service

116 Before automatic controls are installed in a hoist and put into service for the first time or before automatic controls on a hoist are put back into service after significant modifications have been made to them, the employer or contractor must give notice of intention to operate the hoist on automatic controls by submitting to the chief mines inspector:

(a) the details of the automatic control installation;

(b) a certificate from the professional engineer who oversaw the installation and testing of the automatic controls certifying that the automatic controls are safe for use; and

(c) the operating procedures to be followed when the hoist is operated on automatic control.

Preventive maintenance program

117 An employer or contractor must develop a preventive maintenance program for each hoist that requires and sets out the procedure for an inspection every five years of:

(a) the main linkage and support points;

(b) the deflection sheave; and

(c) all other key components of the hoist.

Friction clutches prohibited

118 On and after the coming into force of these regulations, an employer, contractor or owner must ensure that no hoist fitted with a friction clutch is installed in a shaft.

DIVISION 2
Standards for Hoisting Machinery

Interpretation of Division

119 In this Division, **"limit of travel"** means the upper and lower boundaries of the shaft within which a conveyance is allowed to operate.

Hoist drums

120(1) Subject to subsection (5), an employer or contractor must ensure that a cylindrical drum on a hoist is equipped with:

(a) grooves that properly fit the rope in use; and

(b) flanges:

(i) of sufficient height to contain all of the rope on the drum; and

(ii) of sufficient strength to withstand any loads imposed by the rope.

(2) An employer or contractor must ensure that any conical portion of a hoist drum is equipped with grooves to prevent the rope from slipping on the drum or from coiling unevenly.

(3) An employer or contractor must ensure that a hoist drum and a sheave are arranged so that the rope properly coils across the face of the drum and winds smoothly from one layer to another without cutting into the rope layer beneath.

(4) An employer or contractor must ensure that:

(a) except in the case of an emergency hoist not stored under load, a hoist drum has sufficient rope-carrying capacity to permit hoisting from the lower and the upper limit of travel in the shaft with not more than three layers of rope on the drum at any time; and

(b) there is a minimum of three turns of rope on the drum when the conveyance is at the lowest point of travel in the shaft.

(5) An employer or contractor may use a hoist with a smooth drum during shaft-sinking operations, preliminary development operations or other operations of a temporary nature if, at least 30 days before the hoist is put into service for one of those operations, the employer or contractor gives to the chief mines inspector:

(a) notice of the intention to use a hoist with a smooth drum; and

(b) details of the method to be used for tensioning the hoisting rope.

Diameter of drum, friction pulley

121(1) Subject to subsection (2), an employer or contractor must ensure that the diameter of the hoist drum is equal to or greater than:

(a) 80 times the diameter of the hoisting rope in use, if the diameter of the rope is 26 millimetres or more; or

(b) 60 times the diameter of the hoisting rope in use, if the diameter of the rope is less than 26 millimetres.

(2) In the case of shaft-sinking operations or preliminary development operations, an employer or contractor must ensure that the diameter of the hoist drum is equal to or greater than:

(a) 60 times the diameter of the hoisting rope in use, if the diameter of the rope is 26 millimetres or more; or

(b) 48 times the diameter of the hoisting rope in use, if the diameter of the rope is less than 26 millimetres.

(3) In the case of a friction hoist, an employer or contractor must ensure that the diameter of the friction pulley is equal to or greater than:

(a) 100 times the diameter of the rope, if the hoist is equipped with locked coil ropes; or

(b) 80 times the diameter of the rope, in any other case.

Head sheaves and deflecting sheaves

122 An employer or contractor must ensure that:

(a) the diameter of a head sheave and a deflecting sheave is not less than the minimum diameter of a hoist drum, determined in accordance with section 120 for the same rope and function;

(b) the grooving of a head sheave and a deflecting sheave is the correct size for the diameter of the rope; and

(c) the head sheave and the deflecting sheave are properly aligned.

Hoist brake systems

123(1) An employer or contractor must ensure that no hoist is used unless the hoist is equipped with two sets of mechanical brakes that operate independently from each other to stop and hold the hoist drum or friction pulley.

(2) An employer or contractor must ensure that each set of hoist brakes are designed, installed and maintained:

(a) to safely stop and hold the hoist drum or friction pulley when the conveyance is carrying its maximum permitted load and operating at its maximum permitted speed;

(b) to be tested separately from the hoist operator position, whether the hoist is moving or is stationary;

(c) so that all linkages and brake pistons operate within design limits when applying normal braking effort;

(d) so that full braking torque may be exerted at any time;

(e) to prevent any movement of the hoist if a predetermined limit is exceeded; and

(f) to permit ready identification of brake wear or slack linkage.

(3) An employer or contractor must ensure that at least one set of brakes required by this section is designed, installed and maintained:

(a) to apply directly to the drum to immediately stop and hold the hoist drum or friction pulley; and

(b) to apply automatically if:

(i) the safety circuit of the hoist is interrupted; or

(ii) the pressure in the hydraulic or pneumatic brake actuating system drops below normal.

(4) An employer or contractor must ensure that no hoist used to transport workers is equipped with a foot-operated brake unless the foot-operated brake is an auxiliary electrical device.

(5) An employer or contractor must ensure that the brakes of a hoist installed on or after the coming into force of these regulations are designed, installed and maintained to decelerate the drum at between 1.5 and 3.7 metres per second per second in circumstances in which:

(a) braking is initiated by an interrupted safety circuit; and

(b) the hoist:

(i) is normally used to transport persons; and

(ii) is operating at full speed in the shaft.

Hoist with clutched drum

124 An employer or contractor must ensure that, on a drum hoist equipped with a clutched drum:

(a) the clutch is interlocked with the brake so that the clutch:

(i) can be disengaged only when the brake on the drum is fully applied; and

(ii) is fully engaged before the brake can be released; and

(b) the controls for engaging and disengaging the clutch are equipped with:

(i) guards to prevent the inadvertent operation of the clutch; and

(ii) a device that indicates to the hoist operator whether or not the clutch is fully engaged.

Hoist with automatic controls

125(1) If a hoist is capable of being operated under automatic control, the employer or contractor must ensure that the hoist is equipped with all of the following:

(a) a device that permits changing from manual to automatic controls;

(b) suitable back-out devices that operate only when the hoist is under manual control;

(c) an alarm that sounds when an emergency stop occurs.

(2) If a hoist is designed to be operated automatically either by controls located at shaft stations or by controls located inside the conveyance, the employer or contractor must ensure that the switch used to change over control between the shaft station and the conveyance is operable only at the shaft station at which the conveyance is stopped.

(3) Except if a call system is in operation, the employer or contractor must ensure that a control installed at a shaft station for selecting the conveyance destination and initiating hoist movement is operable only when the conveyance is stopped at that station.

(4) An employer or contractor must ensure that any control used to initiate a jogging of a conveyance is not operable from inside the conveyance.

(5) An employer or contractor must ensure that a control that is installed at a shaft station or landing station and that is used to initiate hoist movement other than a jogging movement:

(a) is operable only when the shaft gate at that level is closed;

(b) is located so that the control can be operated from inside the conveyance when the conveyance is stopped at the shaft station or other landing station; and

(c) incorporates a five-second delay between the operation of the device and the actual movement of the conveyance.

(6) An employer or contractor must ensure that a control that is installed in a conveyance and that is used to control hoist movement other than a jogging movement is:

(a) operable only when the conveyance doors are closed; and

(b) capable of initiating an emergency stop of the conveyance.

Depth indicator

126(1) An employer or contractor must ensure that a hoist is equipped with a depth indicator that continuously, accurately and clearly shows to the hoist operator at all times:

(a) the position of the conveyance;

(b) any locations in the shaft where a reduction in speed is directed by the employer or contractor for any reason;

(c) the positions of the overwind and underwind safety devices required pursuant to section 127 for the conveyance and the counterweight;

(d) the limits of travel beyond which the conveyance must not be moved; and

(e) the position of each service door, dump door and crosshead landing chair.

(2) An employer or contractor must ensure that each hoisting system is equipped with a suitable device to indicate to the hoist operator any failure of the drive to the depth indicator.

Overwind, underwind and overspeed protection

127(1) An employer or contractor must ensure that each hoist is equipped with safety devices to protect the conveyance or counterweight against:

(a) overwinding;

(b) underwinding, except during shaft-sinking operations or as otherwise approved;

(c) approaching a limit of travel at excessive speed; and

(d) travelling at a speed that is more than 15% greater than the normal operating speed.

(2) An employer or contractor must ensure that a safety device required by subsection (1):

(a) interrupts the hoist safety circuit when the safety device is activated;

(b) is driven directly by the hoist drum or friction pulley when the safety device is mechanically activated;

(c) continues to operate when the hoist drum stops;

(d) prevents the paying out of excess rope during shaft-sinking operations; and

(e) is set to gradually decelerate the hoist and bring the conveyance to a safe stop before the conveyance, the counterweight or a rope attachment can reach any permanent obstruction in the shaft or headframe.

(3) An employer or contractor must ensure that a hoist is equipped with a device to audibly warn the hoist operator when the conveyance is at a location in the shaft where manual braking must be commenced to permit the conveyance to be stopped normally.

Headframe height

128 An employer or contractor must ensure that each headframe is of sufficient height to provide an overwind distance that exceeds the greater of:

(a) twice the stopping distance of the conveyance or the counterweight travelling at the maximum speed permitted by the hoist controls; and

(b) three metres.

Overwind safety devices - conveyance without safety catches

129(1) If a conveyance is not equipped with safety catches, the employer or contractor must:

(a) subject to section 130, provide arrestors and a means of preventing the conveyance from falling back down the shaft that are designed and installed so that, if the conveyance or counterweight breaks away from the rope during an overwind, it will fall back the shortest practicable distance before it is arrested; and

(b) install a track limit switch in each shaft hoisting compartment that meets the requirements of subsection (2).

(2) A track limit switch must be:

(a) located above the normal upper limit of travel of the conveyance; and

(b) positioned so that, in the event of an overwind, the switch will be triggered directly by the conveyance or the counterweight to interrupt the hoist safety circuit and bring the hoist to a safe stop before the conveyance, counterweight or rope attachments can reach any permanent obstruction in the shaft or headframe.

Detaching hooks - overwound conveyance

130 Except during shaft-sinking operations, if a conveyance is suspended from two or more ropes on a drum hoist, the employer or contractor must ensure that the conveyance is equipped with detaching hooks that will:

(a) detach the conveyance from the winding rope if the conveyance is overwound in the headframe; and

(b) support the conveyance to prevent it from falling.

Skip used to transport workers

131 If a hoist is used to transport a worker in a skip, the employer or contractor must ensure that:

(a) if a worker may be at risk, the hoist is equipped with a safety device that will prevent the skip from being hoisted to the dumping position while the worker is being carried;

(b) except during shaft-sinking operations, the hoist is equipped with a device that will automatically give an audible or visible warning to the worker in charge of the skip when the safety device mentioned in clause (a) is activated;

(c) the safety device mentioned in clause (a) is designed to fail to safety; and

(d) the hoist operator's position is equipped with a device that automatically gives an audible or visible warning that the safety device mentioned in clause (a) has been activated.

Hoist back-out device

132(1) An employer or contractor must ensure that a hoist is equipped with a manually operated back-out device that meets the requirements of subsection (2) to enable a conveyance to be removed from an overwound or underwound position.

(2) The back-out device required by subsection (1) must be equipped so that:

(a) the hoist moves only in the proper direction; and

(b) the brakes holding the conveyance in an overwound or underwound position cannot be released until the driving torque has developed sufficiently to ensure movement in the proper direction.

Safety devices for friction hoists

133(1) An employer or contractor must ensure that a friction hoist is equipped with the following safety devices:

(a) a device that will stop the conveyance as quickly as is safely practicable when the slippage occurring between the drum of the hoist and the hoisting ropes exceeds the amount predetermined by a professional engineer;

(b) a device that will compensate for any alteration in the effective position of a safety device that is caused by rope creep or slippage, but that only makes an adjustment when the hoist is at rest and the brakes are applied;

(c) a device that will initiate an emergency stop if any abnormal movement of a tail rope loop occurs;

(d) a device that will stop the hoist if a broken wire protrudes from a hoisting rope.

(2) An employer or contractor must ensure that a friction hoist is equipped with tapered guides or other approved devices that are:

(a) located above and below the limits of travel of the conveyance; and

(b) arranged to brake, stop and hold an overwound conveyance if the other safety devices fail.

Safety devices for hoists

134(1) In this section, **"safety circuit"** means a combination of suitable protective devices and protective circuits that, when activated, will:

(a) set the brakes of the hoist;

(b) remove power from the hoist motor;

(c) stop the hoist and conveyance safely under all permissible conditions of load, speed and direction of travel; and

(d) require a manual reset before the conveyance can be moved.

(2) An employer or contractor must ensure that a hoist is equipped with a safety circuit that:

(a) is designed to fail to safety;

(b) is installed and maintained to provide protection at all times; and

(c) operates at a minimum practicable voltage.

(3) An employer or contractor must ensure that the safety circuit of a hoist activates automatically when:

(a) there is a failure of the power supply or a drop in voltage sufficient to affect the safe operation of the hoist;

(b) there is an abnormal overload on the hoist motor;

(c) there is a short circuit in the hoist electrical system, the hoist safety circuit or the hoist control system; or

(d) a safety device required by these regulations has been activated.

(4) An employer or contractor must ensure that a hoist is provided with a manually operated emergency stop switch that is:

(a) within easy reach of the hoist operator when he or she is at the hoist controls; and

(b) installed:

(i) at each location from which the hoist can be remotely controlled;

(ii) at the skip dump; and

(iii) at the loading pocket.

(5) An employer or contractor must ensure that a hoist is provided with an ammeter that:

(a) is located so as to be clearly visible to the hoist operator; and

(b) at all times indicates the load on the hoist drive motor.

(6) An employer or contractor must ensure that every computer-controlled hoist controller installed or modified is equipped with:

(a) a memory-type fault annunciator that:

(i) detects and displays the operation of any protective device required by this section; and

(ii) indicates which device mentioned in subclause (i) activated first; and

(b) an uninterrupted power supply.

Adjustment or alteration of a hoist safety circuit

135 An employer or contractor must authorize only a qualified person to adjust or alter a safety device on a hoisting installation.

Load safety factors - conveyance

136(1) An employer, contractor or owner must ensure that the static safety factor used in the design of a conveyance and for the determination of the rated load of a conveyance is not less than 10.

(2) An employer, contractor or owner must ensure that any part of a conveyance or counterweight that is installed on or after the coming into force of these regulations is capable of withstanding at least four times the maximum allowable design stresses mentioned in subsection 138(3) without permanent distortion while the conveyance or counterweight is in service and carrying the rated load.

Maximum load

137 An employer or contractor must obtain, with respect to a conveyance, a certificate of a professional engineer that sets out:

(a) the maximum load that may be carried on, in or under the conveyance;

(b) in the case of a multi-deck conveyance, the maximum load of each deck; and

(c) any restrictions that must be observed related to the operating conditions.

Conveyances used to transport workers

138(1) An employer or contractor must ensure that a conveyance used to transport workers that is installed after the coming into force of these regulations meets the requirements of this section.

(2) An employer or contractor must ensure that a conveyance used to transport workers is designed by a professional engineer.

(3) The maximum allowable design stresses for a conveyance used to transport workers must be those that are established by sound engineering practices and that include consideration for the effects of:

(a) any impact load that might be imposed on the conveyance;

(b) any dynamic load that might be imposed on the conveyance;

(c) stress concentration factors;

(d) corrosion;

(e) metal fatigue; and

(f) the use of dissimilar materials.

(4) A conveyance used to transport workers must:

(a) be made of sheet steel at least three millimetres thick or other material of equivalent strength;

(b) have a roof made of steel plate at least five millimetres thick or other material of equivalent strength;

(c) have an internal height that is greater than 2.1 metres and a clearance at the door that is greater than 1.8 metres;

(d) if reasonably practicable, have an exit in the roof through which workers can pass and that can be opened either from the inside or the outside of the conveyance; and

(e) be adequately ventilated.

(5) The doors of a conveyance used to transport workers must be:

(a) of solid construction except for a viewing window;

(b) of adequate strength to withstand normal shock loads; and

(c) designed and installed so that:

(i) there is only enough clearance at the floor to allow the doors to be opened and closed;

(ii) the doors are high enough so that the opening above the doors will not endanger workers by permitting falling objects or materials to enter the conveyance;

(iii) the doors can be closed when workers or materials, other than rolling stock or similarly large items, are being transported; and

(iv) the doors cannot be opened outward from the conveyance.

(6) An employer or contractor must ensure that a conveyance used to transport workers that is installed before the coming into force of these regulations is designed by an engineer and meets the following requirements:

(a) the deck on which workers ride is completely covered by a roof that:

(i) extends over the full area of the deck; and

(ii) is adequately constructed to protect workers from overhead hazards;

(b) the sides of the deck on which workers ride:

(i) extend from the floor to the roof of the conveyance; and

(ii) are suitably constructed to prevent a worker from coming into contact with the sides of the shaft timbering or other installations in the shaft;

(c) the deck on which workers ride is equipped with doors that:

(i) extend from the floor to the roof of the deck; and

(ii) are designed and installed so that the doors cannot be opened outward from the conveyance.

Requirements where sinking buckets used

139 If a sinking bucket is used for a purpose other than shaft sinking, the employer or contractor must ensure that:

(a) dump doors and service doors meeting the requirements of section 81 are installed and maintained at the collar; and

(b) a suitable landing or platform is provided at each working level to enable the safe loading and unloading of the sinking bucket.

Safety catches for single rope hoists

140(1) On a hoist installed on or after January 1, 1979, an employer or contractor must ensure that a conveyance used to transport workers that is attached to a single hoisting rope is equipped with effective safety catches that will engage with the guides and bring the conveyance safely to rest if the hoisting rope breaks or becomes detached.

(2) Subsection (1) does not apply:

(a) during shaft-sinking operations and preliminary operations using a sinking bucket;

(b) during shaft maintenance; or

(c) with respect to a conveyance being used in an emergency to remove workers from the mine.

(3) Before a conveyance equipped with safety catches is first used to transport workers, the employer or contractor must ensure that a competent person conducts a free-fall test to ensure that the safety catches function properly.

(4) A free-fall test required by subsection (3) must involve the sudden releasing of a conveyance that is at rest and contains its maximum load.

(5) An employer or contractor must ensure that:

(a) each day, a competent person inspects the safety catches for cleanliness, proper adjustment and proper operating conditions; and

(b) every three months and after any repairs are made to the safety catches, a competent person tests the safety catches by blocking the conveyance and releasing the rope tension on the conveyance to determine whether the catches grip the guides adequately and correctly.

(6) An employer or contractor must ensure that the results of the inspection or test mentioned in subsection (5) are recorded in the hoisting machinery log book by the person who carried out the inspection or test.

Shaft guides and safety catches

141 If safety catches are installed on the conveyance, the employer or contractor must ensure that:

(a) the guides, guide attachments and shaft timbering or other lining are of sufficient strength to withstand the forces that may reasonably be anticipated to be applied if the safety catches are engaged;

(b) the components are suitably designed, installed and maintained to enable the catches to arrest the conveyance at any point in the shaft; and

(c) the guide dimensions and alignment are maintained to limit the lateral acceleration of the conveyance to a safe level.

Multiple rope drum hoists

142 If a conveyance is suspended by two or more ropes on a drum hoist, the employer or contractor must ensure that:

(a) the ropes are of approximately equal size and strength; and

(b) the rope tension is equalized.

Conveyance suspension system

143(1) An employer or contractor must ensure that the following have a static safety factor of 10 when new:

(a) each component of the suspension system between a conveyance or counterweight and a hoisting rope or balance rope;

(b) each connection between components of a conveyance.

(2) An employer or contractor must ensure that none of the components of the suspension system used between a hoisting rope or balance rope and a conveyance is of welded construction.

Methods of attaching ropes

144(1) An employer or contractor must ensure that:

(a) each hoisting rope and each balance rope of a hoist is securely attached to the conveyance or the counterweight by a closed device that will not inadvertently disconnect; and

(b) on a drum hoist, the hoisting rope from the conveyance or counterweight is securely attached to the drum of the hoist.

(2) An employer or contractor must ensure that the following are approved by a professional engineer:

(a) the method of attaching a rope mentioned in subsection (1) on any new installation;

(b) a proposed modification to an existing rope attachment.

Examination and testing of rope attachments

145 If the rope attachments of a hoisting rope or balance rope are first installed or are re-installed after they have been disassembled, the employer or contractor must ensure that, before the hoist is put into operation, a competent worker:

(a) examines the rope attachments connecting the hoisting rope or balance rope to the conveyance or counterweight and the hoisting rope to the drum to determine whether or not they are defective;

(b) makes any necessary adjustments to the attachments mentioned in clause (a); and

(c) records the results of the examination and any adjustments made in the hoisting machinery log book.

Rope clearance, alignment

146(1) An employer or contractor must ensure that:

(a) if two or more balance ropes are used to balance a conveyance, suitable devices are installed to separate the loops of the ropes when the hoist is in operation; and

(b) no balance rope rubs on any steelwork in the shaft.

(2) If guide ropes or rubbing ropes are used, the employer or contractor must ensure that adequate provision is made for the correct alignment and unrestricted vertical movement of the lower ends of those ropes.

(3) If there is water, spillage or other material in a shaft sump, the employer or contractor must ensure that:

(a) there is sufficient clearance between any balance rope and the material in the shaft sump to permit the rope to run freely; and

(b) any guide rope or rubbing rope and any associated rope attachment or tensioning device is clear of the material at the bottom of the shaft.

Mechanical hoist system inspections

147(1) An employer or contractor must ensure that:

(a) all mechanical components of a hoist system, including safety devices, are inspected weekly by a competent worker for defects and unsafe conditions to ensure that the hoist is capable of safe operation; and

(b) a thorough annual visual examination of each conveyance and its joints and welds is carried out by a competent worker.

(2) With respect to a friction hoist, an employer or contractor must ensure that:

(a) every rope tread is examined by a competent worker as often as is necessary to ensure that the rope tread is maintained in good condition; and

(b) at least once every six months:

(i) every rope tread is measured by a competent worker; and

(ii) safety devices are re-calibrated to account for any reduction in tread diameter.

(3) If a defect or unsafe condition that may create a hazard to a worker is identified in an inspection or examination conducted pursuant to subsection (1) or (2), the employer or contractor must ensure that, in addition to meeting the requirements of section 30, the defect is repaired or the unsafe condition is corrected:

(a) by a competent worker, in the case of the hoist system and its components; and

(b) by a qualified worker, in the case of safety devices.

(4) An employer or contractor must ensure that every repair, adjustment or alteration to a hoist system is made only by a competent person authorized by the employer or contractor.

(5) An employer or contractor must ensure that a written record of any inspection, examination, repair or other activity carried out pursuant to this section is recorded in the hoisting machinery log book by the person who carried out the activity.

Hoist system inspection

148(1) An employer or contractor must ensure that the hoist system, all electrical components, electrical safety devices and electrical signalling devices are inspected weekly by a qualified worker.

(2) If a defect or unsafe condition that may create a hazard to a worker is identified in an inspection conducted pursuant to subsection (1), the employer or contractor must ensure that, in addition to meeting the requirements of section 30, the defect is repaired or the unsafe condition is corrected by a qualified worker.

(3) An employer or contractor must ensure that every repair, adjustment or alteration to a component mentioned in subsection (1) is made only by a qualified person authorized by the employer or contractor.

(4) An employer or contractor must ensure that a written record of any inspection, repair or other activity carried out pursuant to this section is recorded in the electrical hoisting equipment log book by the person who carried out the activity.

DIVISION 3
Ropes

Manufacturer's certificate

149 An employer or contractor must ensure that no shaft rope is installed or used in a shaft unless the employer or contractor has a certificate from the manufacturer for that shaft rope that sets out the following:

(a) the manufacturer's name and address;

(b) the manufacturer's rope number;

(c) the date of manufacture of the rope;

(d) the diameter of the rope;

(e) the weight of the rope;

(f) the length of the rope;

(g) the class of core used in the rope;

(h) the percentage by mass of lubricant in the core of the rope;

(i) the trade name of the interior lubricant mentioned in clause (h);

(j) the number of strands in the rope;

(k) the number of wires in each strand;

(l) the diameter of the wires;

(m) the breaking stress of the material of which the wires are made;

(n) the results of the standard torsion test of the wires;

(o) the breaking load of the rope as determined by loading to destruction in a tensile testing machine.

Rope test certificate

150 An employer or contractor must ensure that no shaft rope is put into service unless:

(a) a representative sample that is not less than 2.5 metres in length has been tested in a destructive test by an approved rope testing laboratory; and

(b) the approved rope testing laboratory mentioned in clause (a) has issued a rope testing certificate setting out:

(i) the breaking load of the rope;

(ii) the breaking load extension of the rope;

(iii) the results of the torsion test of the wires; and

(iv) the condition of the wires and the rope lubricant.

Information to be recorded in rope record book

151 An employer or contractor must ensure that the following information is recorded in the rope record book required by section 111:

(a) with respect to each rope used in a hoisting compartment:

(i) the information set out in the manufacturer's certificate required by section 149;

(ii) the name of the supplier from whom the rope was purchased;

(iii) the date of purchase;

(iv) the mine identification number for the rope; and

(v) a history of the rope, setting out:

(A) with respect to each installation of the rope in a location other than in the present location, the date on which the rope was installed in the other location and the date on which the rope was removed from that location;

(B) the date on which the rope was installed in its present location;

(C) with respect to each occasion on which the rope was shortened, the date on which the rope was shortened and the length of rope removed;

(D) the date and the results of each breaking test, electromagnetic test or other approved test; and

(E) with respect to each occasion on which the rope was taken out of service, the date on which the rope was taken out of service and the reasons for taking the rope out of service;

(b) the weight of the conveyance and rope attachments;

(c) the maximum load that may be carried in the conveyance;

(d) the weight or tension applied to each guide rope or rubbing rope used in the hoisting compartment;

(e) with respect to each hoisting rope used in the hoisting compartment:

(i) the maximum length of the rope below the sheave; and

(ii) the maximum weight of the rope below the sheave;

(f) with respect to each balance rope, guide rope or rubbing rope used in the hoisting compartment:

(i) the length of the rope;

(ii) the weight of the rope; and

(iii) the weight attached or tension applied to the rope;

(g) the static load factor of each rope, determined in accordance with section 159:

(i) in the case of a hoisting rope, at the conveyance suspension and at the head sheave with the rope fully let out;

(ii) in the case of a balance rope, at the conveyance suspension point with the conveyance at its upper limit of travel; and

(iii) in the case of a guide rope or rubbing rope, at the suspension point.

Sending information to chief mines inspector

152(1) If a rope is installed in a hoisting compartment, the employer or contractor must forward to the chief mines inspector the information mentioned in clauses 151(1)(a) to (g), except the information mentioned in paragraph 151(1)(a)(v)(E), with respect to that rope as soon as possible after the rope is installed.

(2) If an electromagnetic test or any other approved test of a rope is required by this Division, the employer or contractor must forward a report of the test, including graphs and interpretations, to the chief mines inspector within 30 days after the test.

Used ropes

153(1) An employer or contractor must ensure that no shaft rope that has been used previously is put into service unless:

(a) the rope has been properly examined by a competent person immediately before it is put back into service and has been found to be in safe working condition;

(b) if possible, two standard test pieces, one from each end of the rope, have been tested to destruction by an approved rope testing laboratory and have been found to be in safe working condition;

(c) the rope has been tested electromagnetically for loss of metal and broken wires and has been found to be in safe working condition;

(d) the rope has been properly maintained during its previous use and storage;

(e) a record of the previous use, maintenance and testing of the rope is available; and

(f) the chief mines inspector has given written permission for the rope to be used.

(2) If a used hoisting rope is put back into service on a friction hoist, the employer or contractor must ensure that, in addition to meeting the requirements of section 164, each week for four weeks following being put back into service a competent worker measures and records on a graph:

(a) the stretch of each hoisting rope; and

(b) the number of hoisting cycles completed with each hoisting rope.

Splicing prohibited

154 An employer or contractor must ensure that no rope is used as a shaft rope if the rope has been spliced.

Rope reversal prohibited

155 An employer or contractor must ensure that no shaft rope is reversed.

Lubrication of ropes

156 An employer or contractor must ensure that a competent worker:

(a) lubricates every hoisting rope, other than a jacketed or plastic-impregnated rope, as often as is necessary to maintain the rope in safe working condition; and

(b) if lubrication is applied manually, records the application of the lubricant mentioned in clause (a) in the hoisting machinery log book.

Storage of ropes

157 An employer or contractor must ensure that rope stored on reels:

(a) is stored in a manner to minimize migration of the rope lubricant; and

(b) is not exposed to conditions that will permit corrosion of the rope.

Automatic fire suppression system

158(1) If an automatic hoist lubrication system is installed on the hoisting ropes, the employer, contractor or owner must ensure that:

(a) the head ropes are protected by an automatic fire suppression system; and

(b) a fire suppression system activation alarm is installed at the hoist operator position.

(2) Not later than 180 days after the coming into force of these regulations, an employer, contractor or owner must comply with the requirements of this section with respect to an automatic lubrication system that was installed before the coming into force of these regulations.

Calculation of load factor

159(1) The load factor for a hoisting rope on a drum hoist is the value L calculated in accordance with the following formula:

$$L = \frac{B \times N}{C + M + R}$$

where:

B is the breaking load of the weakest hoisting rope as set out in the manufacturer's certificate;

N is the number of hoisting ropes used on the drum hoist;

C is the combined weight of the conveyance and the rope attachments;

M is the maximum weight of the load permitted to be carried in the conveyance; and

R is the combined weight of the hoisting ropes that are suspended below the head sheave and the balance ropes, if any, that are suspended below the conveyance.

(2) The load factor for a hoisting rope on a friction hoist is the value L calculated in accordance with the following formula:

$$L = \frac{B \times N}{C + M + R}$$

where:

B is the breaking load of the weakest hoisting rope as set out in the manufacturer's certificate;

N is the number of hoisting ropes used on the friction hoist;

C is the combined weight of the conveyance and the rope attachments;

M is the maximum weight of the load permitted to be carried in the conveyance; and

R is the combined weight of the hoisting ropes that are suspended from the conveyance side of the friction drum and the balance ropes, if any, that are suspended below the conveyance.

(3) The load factor of a balance rope, a guide rope or a rubbing rope is the value L calculated in accordance with the following formula:

$$L = \frac{B}{W}$$

where:

B is the breaking load of the rope as set out in the manufacturer's certificate; and

W is:

(a) in the case of a guide rope or rubbing rope, the total weight of the rope plus the weight hung on the bottom of the rope; and

(b) in the case of a balance rope, the maximum weight of the balance rope hanging below the conveyance.

Minimum permitted load factor

160(1) The load factor for a hoisting rope when newly installed on a drum hoist as calculated pursuant to subsection 159(1) must not be less than:

(a) 8.5 when the conveyance is at the sheave wheel; and

(b) when the conveyance is at the lowest point of travel:

(i) 6.5 when the conveyance is being used to transport workers and is not equipped with safety catches that meet the requirements of section 140; and

(ii) 5.25 in any other case.

(2) The load factor for a hoisting rope when newly installed on a friction hoist as calculated pursuant to subsection 159(2) must not be less than the greater of:

(a) 6.5; and

(b) the value L determined in accordance with the following formula:

$$L = 8.1 - [0.00152 \times Q]$$

where Q is the maximum length of rope in metres suspended below the friction drum or head sheave.

(3) The load factor for a balance rope as calculated pursuant to subsection 159(3) must not be less than 7.0 when the rope is newly installed.

(4) The load factor for a guide rope or a rubbing rope as calculated pursuant to subsection 159(3) must not be less than 5.0 when the rope is newly installed.

Cleaning and examination of rope connections, attachments

161(1) An employer or contractor must ensure that a competent worker:

(a) at least daily, visually examines the connections and rope attachments used to make connections between:

(i) each hoisting rope or balance rope and a conveyance; and

(ii) each hoisting rope and a hoist drum; and

(b) cleans and thoroughly examines:

(i) at least monthly, each swivel attachment; and

(ii) at least every six months, each connection and rope attachment mentioned in clause (a), other than a swivel attachment.

(2) After any connection or rope attachment mentioned in clause (1)(a) is altered, adjusted or dismantled and reassembled, the employer or contractor must ensure that:

(a) the connection or rope attachment is thoroughly examined by a competent worker to ensure that it is safe; and

(b) the conveyance is not used for transporting workers until the hoist is tested:

(i) by making two complete trips with the conveyance bearing the maximum permissible suspended load set out in section 113; or

(ii) by another method approved by the chief mines inspector.

(3) An employer or contractor must ensure that the hoist operator records the results of the test required by clause (2)(b) in the hoist operator's log book.

(4) An employer or contractor must ensure that each connection and rope attachment mentioned in clause (1)(a) is subjected to a non-destructive test:

(a) before it is put into service initially; and

(b) at intervals not exceeding five years.

(5) With respect to each rope attachment and mechanical tensioning device installed in conjunction with a guide rope or rubbing rope, an employer or contractor must ensure that a competent worker:

(a) at least weekly, visually examines the attachment or device; and

(b) at least every six months, thoroughly cleans and examines the attachment or device.

(6) An employer or contractor must ensure that the competent worker who carries out any of the examinations required by this section records the results of the examination in the hoisting machinery log book.

Daily inspection of hoisting and balance ropes

162 An employer or contractor must ensure that, at least daily, a competent worker:

(a) inspects the exterior of each hoisting rope and balance rope while the ropes are operating at a maximum speed of 90 metres per minute to note:

(i) any visible damage or distortion in the rope; and

(ii) the condition of the rope dressing; and

(b) records the details of the inspection mentioned in clause (a) in the hoisting machinery log book.

Monthly inspection of hoisting ropes - drum hoists

163(1) With respect to a drum hoist, an employer or contractor must ensure that, at least monthly, a competent worker:

(a) inspects the portion of the hoisting rope that is not on the drum when the conveyance is at its lowest stopping point;

(b) inspects the portion of the hoisting rope that normally remains on the drum when the conveyance is at its lowest stopping point; and

(c) records the details of the inspections mentioned in clauses (a) and (b) in the hoisting machinery log book.

(2) An inspection pursuant to clause (1)(a) must include:

(a) the cleaning of a portion of the rope, with a different portion cleaned for each monthly inspection; and

(b) an examination of the condition of the cleaned portion of the rope, including:

(i) measuring any reduction in diameter; and

(ii) an examination for any corrosion, distortion, broken wires or wear on the rope.

(3) An inspection pursuant to clause (1)(b) must include an examination of the rope:

(a) for any significant crushing;

(b) for any deterioration of the rope; and

(c) to determine whether the rope is properly wound on the drum.

(4) If, as a result of an inspection pursuant to subsection (1), there is a finding of corrosion, broken wires, an appreciable reduction in diameter or an appreciable amount of wear, the competent worker must monitor the condition of the rope to ensure that the rope is capable of safe operation by re-examining the portion of the rope in which the problem is found at intervals of time that are sufficient to protect the health and safety of workers.

Monthly inspection of ropes - friction hoists

164 With respect to a friction hoist, an employer or contractor must ensure that, at least monthly, a competent worker:

(a) measures and records on a graph the stretch of each hoisting rope and the number of hoisting cycles completed with each hoisting rope;

(b) measures and records the diameter of each hoisting rope at suitable locations on the rope;

(c) examines the condition of each hoisting rope, including examining for any corrosion, distortion, broken wires or wear on the ropes;

(d) examines the balance rope at suitable locations on the rope, including the areas adjacent to the attachments and in the loop when the conveyance is at a shaft station, and observes the condition of the rope, including examining any corrosion, distortion, broken wires or wear on the ropes; and

(e) records the details of the examinations mentioned in clauses (a) to (d) in the hoisting machinery log book.

Testing of hoisting ropes - drum hoists

165(1) Subject to section 167, with respect to a drum hoist, an employer or contractor must ensure that, at least every six months, each hoisting rope is examined by an approved electromagnetic testing service or another approved method to determine whether or not the rope is in safe operating condition.

(2) With respect to a drum hoist, an employer or contractor must, every six months, remove from the lower end of each hoisting rope above the attachment a portion of the rope that is not less than three metres in length.

(3) An employer or contractor must ensure that:

(a) the third and each subsequent portion of rope removed pursuant to subsection (2) is tested by an approved rope testing laboratory;

(b) a summary of each test conducted in accordance with clause (a) is recorded in the rope record book; and

(c) a test certificate is obtained from an approved rope testing laboratory, retained, and a copy forwarded to the chief mines inspector.

Testing of hoisting ropes - friction hoists

166(1) With respect to a friction hoist, an employer or contractor must ensure that a competent worker:

(a) at suitable intervals of time, examines and adjusts each hoisting rope:

(i) to maintain the desired torque balance of the rope; and

(ii) in multi-rope installations, to maintain equal tension among the ropes;

(b) subject to section 167, at least every six months, electromagnetically tests each hoisting rope using an approved electromagnetic testing service or another approved method; and

(c) at least every 12 months:

(i) changes the position of each hoisting rope within the clamps or attachments if it is practicable to do so; or

(ii) if the position change mentioned in subclause (i) is not practicable, thoroughly examines the hoisting rope within the clamps or attachments:

(A) after dismantling and thoroughly cleaning the attachment between the rope and the conveyance or counterweight; or

(B) if the procedure described in paragraph (A) is not reasonably practicable, by another approved method.

(2) If the attachment between a hoisting rope and the conveyance or counterweight is disassembled, the employer or contractor must ensure that the attachment is not reassembled unless the rope is in satisfactory condition.

(3) An employer or contractor must ensure that the competent worker who conducts any inspection, test or other action pursuant to this section records the details in the hoisting machinery log book.

More frequent testing - hoisting ropes with diminished breaking load

167(1) If a test of a hoisting rope determines that the rope has lost more than 7% of its original breaking load, the employer or contractor must ensure that, at three-month intervals, the rope is electromagnetically tested using an approved electromagnetic testing service or another approved method.

(2) If extrapolation of the results of a test of a hoisting rope indicates that the rope will lose more than 10% of its original breaking load before the next required test, the employer or contractor must ensure that the rope is examined by an approved electromagnetic testing service or another approved method at intervals of time that are frequent enough to ensure that the rope has not lost more than 10% of its original breaking load.

Annual inspection - hoisting ropes and balance ropes

168(1) An employer or contractor must ensure that a competent worker:

(a) inspects each hoisting rope and balance rope in accordance with this section as often as is necessary to ensure that the rope is capable of safe operation, but at least every 12 months; and

(b) records the details of the inspection mentioned in clause (a) in the hoisting machinery log book.

(2) An inspection pursuant to subsection (1) must include:

(a) the cleaning of portions of the hoisting and balance ropes at 30-metre intervals throughout the length of the ropes; and

(b) an examination of the condition of the cleaned portions of the ropes, including:

(i) measuring any reduction in diameter of the hoisting ropes;

(ii) an examination for any corrosion, distortion, broken wires or wear on the hoisting and balance ropes; and

(iii) if necessary, opening corroded portions of the balance rope to examine the interior of the rope.

Annual inspection - guide ropes and rubbing ropes

169(1) An employer or contractor must ensure that a competent worker:

(a) inspects each guide rope and rubbing rope in accordance with this section as often as is necessary to ensure that the rope is capable of safe operation, but at least every 12 months; and

(b) records the details of the inspection mentioned in clause (a) in the hoisting machinery log book.

(2) An inspection pursuant to subsection (1) must include:

(a) the cleaning of portions of the rope at 30-metre intervals throughout the length of the rope, including every conveyance meeting point, shaft station, discharge point and loading point; and

(b) an examination of the condition of the cleaned portions of the rope, including:

(i) measuring any reduction in diameter; and

(ii) an examination for any corrosion, distortion, broken wires or wear on the rope.

Testing and adjustment of balance ropes, guide ropes and rubbing ropes

170(1) Subject to subsections (2) to (6), an employer or contractor must ensure that, at least every 12 months, an approved electromagnetic testing service examines each balance rope, guide rope and rubbing rope with an electromagnetic testing device or another approved method to determine whether the rope is in safe operating condition.

(2) Subsection (1) does not apply to guide ropes and rubbing ropes located in potash mines.

(3) If a test of a balance rope in accordance with subsection (1) determines that the rope has lost more than 7% of its original breaking load, the employer or contractor must ensure that an approved electromagnetic testing service examines the rope with an electromagnetic testing device or another approved method:

(a) at least every six months; or

(b) at any other interval of time directed by the chief mines inspector.

(4) If extrapolation of the results of a test of a balance rope indicates that the rope will lose more than 10% of its original breaking load before the next test required pursuant to these regulations, the employer or contractor must ensure that an approved electromagnetic testing service examines the rope with an electromagnetic testing device or another approved method:

(a) at least every three months; or

(b) at any other interval of time directed by the chief mines inspector.

(5) Subject to subsection (6), an employer or contractor must ensure that each guide rope and rubbing rope used in a potash mine is in safe operating condition:

(a) by ensuring that:

(i) at least every 36 months each rope is examined by an approved electromagnetic testing service with an electromagnetic testing device or another approved method; and

(ii) at least every 12 months each rope is cleaned and checked for decrease in diameter every 30 metres; or

(b) by ensuring that at least every 12 months each rope is examined by an approved electromagnetic testing service with an electromagnetic testing device or another approved method.

(6) If extrapolation of the results of a test of a guide rope or rubbing rope located in a potash mine indicates that the rope will lose more than 20% of its original breaking load before the next test required pursuant to these regulations, the employer or contractor must ensure that an approved electromagnetic testing service examines the rope with an electromagnetic testing device or another approved method:

(a) at least every 12 months; or

(b) at any other interval of time directed by the chief mines inspector.

(7) If reasonably practicable, an employer or contractor must ensure that, at least every five years, each guide rope and rubbing rope is lifted through a distance that is at least 1.5 times the headframe capping length.

(8) If there is uneven wear in a guide rope, the employer or contractor must ensure that the rope is turned through a suitable angle at suitable intervals of time to equalize the wear around the diameter of the rope.

(9) An employer or contractor must record the details of an inspection or action required pursuant to this section in the hoisting machinery log book.

Unusual rope condition

171 If an unusual condition is identified in a shaft rope that does not constitute a sufficient reason to discard the rope pursuant to section 172, 173 or 174, the employer or contractor must:

(a) immediately notify the chief mines inspector of the unusual condition; and

(b) ensure that examinations of the rope are conducted at appropriate intervals of time along the length of the rope to ensure the safety of workers.

Hoisting rope discard criteria

172(1) An employer or contractor must ensure that any hoisting rope used in a shaft is discarded after the rope has been in service for two years unless:

(a) the chief mines inspector approves the use of the rope for a further period; or

(b) the rope is discarded sooner pursuant to subsection (2).

(2) An employer or contractor must ensure that a hoisting rope used in a shaft is discarded if, in any part of the rope:

(a) it is determined by any of the following methods that the breaking load has decreased to less than 90% of the original breaking load:

(i) an electromagnetic test;

(ii) a calculation based on the observed reduction of diameter of the rope;

(iii) a test to destruction;

(iv) extrapolation to the current date from measurements of loss of breaking load plotted against time;

(b) the extension of a test piece has decreased to less than 60% of its original extension when the test piece is tested to destruction;

(c) the number of broken wires, excluding filler wires, in a section of rope equalling the length of one lay, is greater than 5% of the total number of wires;

(d) an examination reveals a marked increase in the number of broken wires per unit length since the previous examination;

(e) a visual examination, an approved electromagnetic test or another approved method indicates the presence of a defect that may endanger the safety of a worker;

(f) significant corrosion or distortion is evident; or

(g) the rate of stretch begins to show a significant increase over the normal rate of stretch noted during the rope's service.

Balance rope discard criteria

173(1) An employer or contractor must ensure that any balance rope used in a shaft is discarded after the rope has been in service for three years unless:

(a) the chief mines inspector approves the use of the rope for a further period; or

(b) the rope is discarded sooner pursuant to subsection (2).

(2) An employer or contractor must ensure that a balance rope used in a shaft is discarded if, in any part of the rope:

(a) it is determined by any of the following methods that the breaking load has decreased to less than 85% of the original breaking load:

(i) an approved electromagnetic test or another approved method;

(ii) a calculation based on the observed reduction of diameter of the rope;

(iii) a test to destruction;

(iv) extrapolation to the current date from measurements of loss of breaking load plotted against time;

(b) the extension of a test piece has decreased to less than 60% of its original extension when the test piece is tested to destruction;

(c) the number of broken wires, excluding filler wires, in a section of rope equalling the length of one lay, is greater than 5% of the total number of wires;

(d) a visual examination, an approved electromagnetic test or another approved method indicates the presence of a defect that may endanger the safety of a worker; or

(e) significant corrosion or distortion is evident.

Guide rope, rubbing rope discard criteria

174 An employer or contractor must ensure that a guide rope or rubbing rope used in a shaft is discarded if, in any part of the rope:

(a) it is determined by any of the following methods that the breaking load has decreased to less than 75% of the original breaking load:

(i) an approved electromagnetic test or another approved method;

(ii) a calculation based on the observed reduction of diameter of the rope;

(b) the extension of a test piece has decreased to less than 60% of its original extension when the test piece is tested to destruction;

(c) the number of broken wires, excluding filler wires, in a section of rope equalling the length of one lay, is greater than 5% of the total number of wires;

(d) an outer wire or rod has lost 40% or more of its radial depth;

(e) a visual examination, an approved electromagnetic test or another approved method indicates the presence of a defect that may endanger the safety of a worker; or

(f) significant corrosion or distortion is evident.

Notice of hoisting rope discard

175(1) If a hoisting rope is taken out of service, the employer or contractor must, within 180 days, give written notice of that fact to the chief mines inspector.

(2) A written notice required by subsection (1) must include:

(a) the date on which the rope is taken out of service;

(b) the reasons for taking the rope out of service; and

(c) the disposition of the rope.

Special testing of discarded hoisting ropes

176 If, in the opinion of the chief mines inspector, special testing of a discarded hoisting rope is in the interest of better mine hoisting practice, the chief mines inspector may require the employer or contractor:

(a) to have specimens cut from the rope at locations specified by the chief mines inspector; and

(b) to send the specimens to an approved rope testing laboratory.

Removal of ropes after hoisting ceases

177 If a shaft or shaft compartment is abandoned for hoisting purposes, the employer or contractor must ensure that the hoisting ropes are removed from the hoist immediately.

DIVISION 4

Qualifications of Hoist Operators and Workers in Charge of Conveyances

Interpretation of Division

178 In this Division, **"hoist operator's certificate"** means a hoist operator's certificate issued pursuant to section 183.

Qualifications of hoist operator

179 No person shall act as a hoist operator, and no employer or contractor shall require or permit a person to act as a hoist operator, unless:

(a) the person is competent to act as a hoist operator;

(b) the person:

(i) holds a valid hoist operator's certificate issued pursuant to section 183; or

(ii) holds a valid temporary authorization to operate a hoist issued pursuant to section 181;

(c) the person holds a valid annual medical certificate issued pursuant to section 185;

(d) the person has adequate knowledge of the language normally used at the mine;

(e) the person has:

(i) a minimum of three years' mining experience; or

(ii) a combination of training and experience that, in the opinion of the chief mines inspector, is equivalent to three year's mining experience;

(f) the person's employer or contractor certifies in writing that the person:

(i) has at least 150 hours of combined:

(A) training; and

(B) hoisting experience under the supervision of a certified hoist operator;

(ii) a combination of training and experience that, in the opinion of the chief mines inspector, is equivalent to the requirements set out in subclause (i); and

(iii) has been trained in the procedures that the person will be expected to perform as a hoist operator at the mine; and

(g) the person is authorized by the person's employer or contractor to act as a hoist operator.

Suspension of authorization to operate hoist

180 If an employer or contractor suspends or revokes an authorization to act as a hoist operator, the employer or contractor shall immediately inform the chief mines inspector of the suspension or revocation and the reasons for it.

Temporary authorization to operate hoist

181(1) An employer or contractor may issue a written temporary authorization to operate a hoist to a worker who:

(a) has mining experience that, in the opinion of the employer or contractor, is adequate for undertaking the duties of a hoist operator;

(b) has demonstrated practical knowledge that, in the opinion of the employer or contractor, is adequate with respect to the following:

(i) the hoisting system, including safety devices;

(ii) signalling procedures and the hoist signalling system for the hoist that the worker is to operate;

(iii) emergency procedures;

(iv) the provisions of these regulations pertaining to hoists;

(c) has been trained in the procedures that the worker will be expected to perform; and

(d) holds a valid annual medical certificate issued pursuant to section 185.

(2) A temporary authorization to operate a hoist expires on the earlier of the following dates, unless it is revoked or suspended pursuant to section 180:

(a) 90 days after the date of issue;

(b) the day on which the worker is issued a hoist operator's certificate.

(3) An employer or contractor shall not renew a temporary authorization to operate a hoist unless at least 60 days have passed since the expiration of the temporary authorization.

Hoist operator's examination

182(1) A person is eligible to take the hoist operator's examination if:

(a) the person has been recommended by his or her employer or contractor to the chief mines inspector; and

(b) the employer or contractor of that person provides a written notice to the chief mines inspector stating that:

(i) the person meets the qualifications set out in section 179; or

(ii) the employer or contractor will undertake to ensure that the person meets the qualifications set out in section 179 before the employer or contractor authorizes the person to act as a hoist operator.

(2) The chief mines inspector may set an examination to test the knowledge, with respect to the following subjects, of a person who wishes to obtain a hoist operator's certificate:

(a) legal requirements and standards applicable to hoists;

(b) construction and specifications of the type of hoist to be operated;

(c) safety devices used on hoists and safety practices and procedures to be followed in operating a hoist;

(d) safety inspections and hoist tests;

(e) the hoist signalling system for the hoist that the person is to operate;

(f) signalling procedures;

(g) the responsibilities of a hoist operator;

(h) recording test results and observations of abnormal circumstances in the hoist operator's log book;

(i) emergency procedures;

(j) practices and procedures to be followed in using a hoist to transport workers.

(3) The chief mines inspector may permit a person who fails the hoist operator's examination to make another attempt after a period of not less than 30 days after the date of the previous attempt.

Hoist operator's certificate

183(1) The chief mines inspector may issue a hoist operator's certificate to a person if:

(a) that person has passed the hoist operator's examination within six months prior to the date of issuance of the hoist operator's certificate; and

(b) the chief mines inspector has received a written letter from that person's employer clearly identifying any specialized procedures for which the person has or has not received training.

(2) The chief mines inspector may impose any terms and conditions on the hoist operator's certificate that the chief mines inspector considers appropriate.

(3) No hoist operator shall fail to comply with any term or condition imposed on the hoist operator's certificate pursuant to subsection (2).

(4) Subject to section 184, a hoist operator's certificate expires five years after the date of issue.

Revocation or suspension of hoist operator's certificate

184(1) The chief mines inspector may, at any time, revoke or suspend a hoist operator's certificate if the hoist operator fails to comply with any term or condition of the hoist operator's certificate or, in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

(2) The chief mines inspector must inform the hoist operator and the employer or contractor immediately in writing of the revocation or suspension of the hoist operator's certificate and the reasons for the revocation or suspension.

(3) If a hoist operator's certificate is revoked pursuant to this section, any person in possession of the revoked hoist operator's certificate, or a copy of the revoked hoist operator's certificate, shall immediately return it to the chief mines inspector.

Annual medical certificate

185(1) If an employer or contractor wishes to authorize a worker as a hoist operator, the employer or contractor must:

(a) arrange for the worker to undergo an annual medical examination by a duly qualified medical practitioner during the worker's normal working hours and reimburse the worker for any part of the cost of the medical examination that the worker cannot otherwise recover; and

(b) ensure that a medical certificate is prepared by the duly qualified medical practitioner who conducted the medical examination pursuant to clause (a) that states that the person is fit to discharge the duties of a hoist operator.

(2) Subject to subsection (3), a medical certificate obtained pursuant to subsection (1) is valid for a period of one year after the date of issue.

(3) A duly qualified medical practitioner may at any time recall a hoist operator for re-examination and may cancel or renew the medical certificate based on the duly qualified medical practitioner's assessment of the hoist operator's fitness to discharge the duties of a hoist operator.

(4) If a worker cannot attend a medical examination mentioned in subsection (1) during the worker's normal working hours, an employer must credit the worker's attendance at the examination outside normal working hours as time at work and ensure that the worker does not lose any pay or other benefits.

(5) A medical examination arranged pursuant to subsection (1) must include any medical procedures that are necessary for the duly qualified medical practitioner to determine if the worker is fit to discharge the duties of a hoist operator.

Hoist operator's hours of work

186(1) Subject to subsections (3) to (5), an employer or contractor must ensure that no hoist operator works more than 12 hours in any period of 24 consecutive hours.

(2) For the purposes of subsection (1), any non-hoisting time worked by the hoist operator before commencing hoisting work must be counted as time worked.

(3) If a hoist operator reaches the end of a 12-hour shift and no authorized hoist operator replacement is available to take over the hoisting duties, an employer or contractor may permit the hoist operator to work one additional hour in a period of 24 consecutive hours.

(4) During an emergency or during repair work to the shaft, an employer or contractor may permit a hoist operator who has worked 12 hours to work one additional hour in a period of 24 consecutive hours.

(5) If a mine does not operate more than 12 hours in a 24-hour period, an employer or contractor may permit a hoist operator to work for an additional period that is sufficient to make possible the transporting of workers at the beginning and end of a shift.

(6) Nothing in this section exempts an employer or contractor from complying with the hours of work provisions of *The Labour Standards Act* and the regulations made pursuant to that Act.

DIVISION 5
Operation of Hoists

General duty re maximum load

187 An employer or contractor must ensure that no hoist is loaded in excess of the maximum permissible suspended load set out in the mine hoist certificate for the hoist.

General duty re rated load of conveyance

188 If a hoist is being operated, an employer or contractor must ensure that:

(a) the rated load of the conveyance is not exceeded; and

(b) no operating restrictions set out in the mine hoist certificate are contravened.

General duty re maximum number of persons

189 An employer or contractor must ensure that no hoist is used to transport a greater number of persons than the maximum number of persons set out in the mine hoist certificate.

Transporting workers - conveyance requirements

190(1) Except during a shaft-sinking operation or during an emergency that may endanger the health or safety of a worker, an employer or contractor must ensure that no worker is transported in a conveyance that does not meet the requirements of section 138.

(2) Subject to subsection (3), if a worker is being transported in a conveyance, the employer or contractor must ensure that:

(a) the hoist is not operated unless the doors of the conveyance are securely closed; and

(b) the conveyance doors are not opened until a full stop has been made at the intended destination.

(3) The requirements set out in subsection (2) do not apply if:

(a) during a shaft inspection, other precautions are implemented that are effective to protect the health and safety of the worker being transported in the conveyance; or

(b) the conveyance remains unintentionally stopped at a point other than at a shaft station and the employer or contractor must implement an emergency procedure to safely remove the worker from the conveyance.

Transporting workers with materials or equipment

191(1) Subject to subsections (2) to (4), an employer or contractor must ensure that no worker is transported in a conveyance that is being used at the same time for hoisting materials or equipment.

(2) An employer or contractor may permit a worker to be transported in a conveyance while personal hand tools or other personal equipment are being transported if:

(a) suitable precautions are taken to prevent injury to any person in the conveyance; and

(b) the combined load does not exceed 85% of the maximum permissible suspended load as set out in the mine hoist certificate.

(3) An employer or contractor may permit a worker to be transported in a conveyance while materials or equipment other than personal hand tools or other personal equipment are being transported if:

(a) in the case of a multi-deck conveyance:

(i) the worker is carried on a deck that does not contain any material or equipment;

(ii) the material or equipment is adequately secured;

(iii) the material or equipment being transported will not interfere with the removal of a worker from the conveyance in the event of an emergency; and

(iv) the combined load does not exceed 85% of the maximum permissible suspended load set out in the mine hoist certificate; or

(b) in the case of a single-deck conveyance:

(i) the worker is required to control the material or equipment; and

(ii) precautions are implemented that are necessary to protect the health and safety of the worker.

(4) If a skip is used to transport a worker, the employer or contractor must ensure that the hoist travels at a speed that does not exceed the lesser of:

(a) five metres per second; and

(b) one-half of the hoist's normal speed.

Workers in charge of conveyance

192(1) An employer or contractor must:

(a) designate a worker to be in charge of a conveyance when the conveyance is operating under manual control;

(b) ensure that the names of the workers designated pursuant to clause (a) are readily available for the information of workers; and

(c) ensure that no worker, other than a worker designated pursuant to clause (a), is in charge of a conveyance that is under manual control.

(2) An employer or contractor shall not designate a worker pursuant to clause (1)(a) unless the worker has been trained in hoisting signals and the matters set out in subsection (3).

(3) An employer or contractor must ensure that a worker designated pursuant to clause (1)(a) who is in charge of a conveyance operating under manual control:

(a) maintains discipline in the conveyance while persons are being transported;

(b) enforces the maximum load for the conveyance, as set out in the certificate required pursuant to section 137;

(c) notifies the hoist operator if a heavy or irregularly shaped load is to be transported; and

(d) gives any necessary hoist signals to the hoist operator.

(4) If workers are underground in an area served by a hoist operated by manual control, the employer or contractor must ensure that when the worker in charge of the conveyance is not riding in or on the conveyance:

(a) the worker is readily available at all times within the sound of the shaft signals; or

(b) the fire control and emergency response plan developed pursuant to section 383 contains suitable provisions to ensure the conveyance is made available in the event of an emergency.

Transporting workers - worker conduct

193(1) An employer or contractor must ensure that workers being transported in a conveyance:

(a) do not engage in any behaviour that may adversely affect the health or safety of a worker; and

(b) obey the instructions of the worker in charge of the conveyance.

(2) At all times while being transported in a conveyance, a worker:

(a) must not engage in any behaviour that may adversely affect the health or safety of a worker; and

(b) must obey the instructions of the worker in charge of the conveyance.

Operation by manual control

194 An employer or contractor must ensure that no hoist operating under manual control is operated unless a hoist operator is at the controls of the hoist at all times while the hoist is in motion.

Operation by automatic control

195(1) At all times while workers are underground in an area served by a hoist that is being operated by automatic control, the employer or contractor must ensure that the hoist operator is not engaged in duties that prevent the operator from returning to the hoist controls within five minutes.

(2) If a hoist is being operated by automatic control, the employer or contractor must ensure that only the hoist operator operates the device that permits changing the hoist from manual to automatic control.

(3) At the time when a hoist is put into operation by automatic control and after that at least once every 24 hours while the hoist is being operated by automatic control, the employer or contractor must ensure that the hoist operator:

(a) tests the hoist brakes; and

(b) remains at the controls long enough to observe that the hoist is functioning properly under the automatic control.

(4) If a hoist operated by automatic control makes an emergency stop, the employer or contractor must ensure that the hoist operator:

(a) takes action appropriate to the emergency; and

(b) switches the hoist to manual control until:

(i) the reason for the emergency stop has been determined;

(ii) the fault has been corrected; and

(iii) sufficient hoisting cycles have been completed to ensure that the system is operating normally.

Inspection of hoist brakes

196 An employer or contractor must ensure that, on each shift before a conveyance operating under manual control is moved, the hoist operator:

(a) determines whether or not the hoist brakes are in proper working condition:

(i) in the case of a mechanical hoist, by testing the brakes of the drums against the normal starting power of the engine; and

(ii) in the case of an electric hoist, by testing the brakes against the normal starting current;

(b) in the case of a drum hoist fitted with a clutch, does not unclutch any drum of the hoist until the test mentioned in clause (a) is complete and the hoist operator determines that the brakes are in proper working condition;

(c) in the case of a drum hoist fitted with a friction clutch, tests the holding power of the clutch while the brake of the corresponding drum is kept on and the brake of the other drum is kept off:

(i) in the case of a mechanical hoist, against the normal starting power of the engine; or

(ii) in the case of an electric hoist, against the normal starting current;

(d) immediately reports any defects or unsafe conditions with respect to the hoist brakes to the employer or contractor; and

(e) records the results of each test required by this section in the hoist operator's log book.

Overwind and underwind testing

197 An employer or contractor must ensure that a hoist operator:

(a) tests the overwind and underwind safety devices required by sections 127 and 129 at least daily when the hoist is in operation; and

(b) records the results of the tests mentioned in clause (a) in the hoist operator's log book.

Testing after hoist stoppage

198(1) After every stoppage of a hoist for repairs or for any other purpose in which the stoppage lasts for more than two hours, the employer or contractor must ensure that, before any worker is raised or lowered in the conveyance, the hoist operator:

(a) tests the safety of the hoist by moving the conveyance one complete trip up and down the working portion of the shaft; and

(b) records the results of the test in the hoist operator's log book.

(2) Subsection (1) does not apply if a hoist is sitting idle on automatic.

Clutch and brake use

199(1) An employer or contractor must ensure that the hoist operator does not unclutch a hoist drum until the brake test required by section 196 is completed and no defect or unsafe condition is found.

(2) Before either drum of a double drum hoist is unclutched, an employer or contractor must ensure that the brakes are applied on both drums.

(3) Subject to subsection (4), an employer or contractor must ensure that, while a hoist drum is unclutched, no worker is required or permitted to:

(a) enter a conveyance; or

(b) work on or under a conveyance.

(4) Subsection (3) does not apply:

(a) during shaft-sinking operations; or

(b) if the conveyance is first secured in position by chairing, blocking or having a positive locking device inserted into the drum.

(5) An employer or contractor must ensure that no conveyance is lowered from an unclutched drum.

(6) An employer or contractor must ensure that the hoist operator does not leave the controls of a hoist under manual control unless:

(a) the brakes are set;

(b) the clutches are engaged or the conveyance on an unclutched drum is chaired or blocked; and

(c) the power supply to the hoist controls is disconnected.

Transporting materials and equipment in shaft

200(1) If materials or equipment are being transported in a conveyance, the employer or contractor must ensure that:

(a) the materials or equipment are loaded and secured so as to prevent them from shifting during transport; and

(b) if any materials or equipment project above or below the conveyance, those materials or equipment are securely fastened so that they cannot:

(i) come into contact with the sides of the shaft, the timber supports or other conveyance or shaft equipment; or

(ii) cause damage to any ropes.

(2) An employer or contractor must ensure that:

(a) adequate precautions are taken to secure any materials or equipment slung from a rope or conveyance; and

(b) no open hooks are used to suspend materials or equipment in a shaft.

(3) An employer or contractor must ensure that a competent worker:

(a) inspects, before use, any sling, chain or other rigging to be used for lowering any material or equipment in a shaft;

(b) removes from service any rigging that is kinked, damaged or otherwise faulty; and

(c) supervises the slinging of any material or equipment in a shaft.

Use of chairs

201(1) An employer or contractor must ensure that chairs are not used for landing a conveyance while workers are being transported in the conveyance.

(2) An employer or contractor must ensure that chairs are not put into operation unless the proper chairing signal has been given to the hoist operator.

DIVISION 6
Hoist Signalling Systems

Submission of hoist signalling system plans

202 An employer or contractor must ensure that, before any signalling system is installed, the hoist signalling system plans are submitted to the chief mines inspector.

Hoist signalling system - general requirements

203(1) An employer or contractor must ensure that a hoist signalling system that complies with this Division is installed at every shaft with a hoist.

(2) The hoist signalling system must:

(a) permit the worker in charge of the conveyance and the hoist operator to exchange control signals;

(b) enable clear, audible signals to be given that are separate and distinct for each shaft compartment; and

(c) be arranged so that the hoist operator can return a signal to the worker giving the signal.

(3) An employer or contractor must ensure that the hoist signalling system is installed at:

(a) the collar;

(b) every working level; and

(c) every other landing station in regular use in the shaft.

Location of movement signal

204 An employer or contractor must ensure that the signal for movement of a conveyance is located within easy reach of a worker in the conveyance.

Operation of return signal

205 The hoist operator must return the signal to a worker in a conveyance who gave the signal if the worker is to be lowered or raised in the conveyance.

Communication with hoist operator

206(1) In this section, **"signal line"** means a cord that, when pulled, rings a bell at the hoist operator's position and any other place in the shaft where a bell is located.

(2) Except during a shaft-sinking operation, an employer or contractor must ensure that there are two separate and effective means of communication between the hoist operator and any part of the shaft.

(3) At least one of the means of communication required pursuant to subsection (2) must be a voice communication system.

(4) If a signal line is used as a means of communication, an employer or contractor must ensure that the signal line is installed in each working compartment of each shaft in a manner that permits signals to be communicated to the hoist operator from any portion of the shaft.

Cage call system

207 If a cage call system is installed, an employer or contractor must ensure that:

(a) the signals for the system do not sound at the hoist operator's position; and

(b) the control for the signal of the cage call system:

(i) is separate from the hoist signal system; and

(ii) is clearly marked "cage call system".

Signalling procedures

208 An employer or contractor must:

(a) develop and implement a signalling procedure between the hoist operator and the worker in charge of the conveyance;

(b) ensure that the signalling procedure mentioned in clause (a) is properly used;

(c) ensure that the signals used in the signalling procedure required pursuant to clause (a) are those set out in Table 1; and

(d) ensure that a copy of the signalling procedure is posted:

(i) in the hoist room;

(ii) at the shaft collar; and

(iii) at every landing station in use in the shaft.

Signal method and order

209 If sound signals are used to control the movement of a conveyance, an employer or contractor must ensure that the hoist operator and the worker in charge of a conveyance:

(a) give the sound signals at distinct intervals of time; and

(b) give and return the signals in the following order:

(i) cautionary signal;

(ii) directory signal; and

(iii) executive signal.

Signalling and operating procedures when hoisting workers

210(1) If sound signals are used to control the movement of a conveyance, on receipt of the cautionary signal that a worker is to be raised or lowered, the hoist operator must:

(a) return the cautionary signal;

(b) not move the conveyance until the executive signal is received; and

(c) not leave the hoist controls until the worker has been safely raised or lowered.

(2) If the worker who is signalling movement is to be raised or lowered, the worker must give the signal from within the conveyance.

(3) The hoist operator must:

(a) not move the conveyance within a period of five seconds after receiving an executive signal that a person is to be raised or lowered; and

(b) complete the required raising or lowering without interruption unless a stop signal or emergency signal is received.

(4) If a hoist operator is unable to act within one minute after receiving the executive signal, the hoist operator must not move the conveyance until he or she again receives a complete set of signals as set out in clause 209(b).

Special signals

211(1) In addition to the signals required by this Part, an employer or contractor must develop:

(a) signals to designate all regular shaft conveyance landing stations; and

(b) signals to designate all hoisting movements not set out in Table 1.

(2) An employer or contractor must ensure that each signal mentioned in subsection (1) is readily distinguishable from other signals.

(3) An employer or contractor must ensure that all signals mentioned in subsection (1) and an adequate description of their application to movements are posted:

(a) in the hoist room;

(b) at the shaft collar; and

(c) at each conveyance landing station in use in the shaft.

Prohibition on talking to hoist operator

212 An employer or contractor must ensure that:

(a) except in an emergency or for the purpose of training, no person speaks to the hoist operator while the hoist is being operated manually; and

(b) a sign stating the prohibition mentioned in clause (a) is posted in a position plainly visible to anyone approaching the hoist operator.

Precautions after inadvertent stop

213(1) Subject to subsection (2), an employer or contractor must ensure that the hoist operator does not move the conveyance until a proper signal is received.

(2) If a conveyance has inadvertently stopped at a place in the shaft from which a signal cannot be given, the hoist operator may move the conveyance:

(a) if persons are in the conveyance, when the hoist operator is authorized to do so by the employer or contractor; or

(b) if persons are not in the conveyance, when:

(i) the reason for the inadvertent stop has been determined to the satisfaction of the hoist operator;

(ii) any fault has been corrected; and

(iii) the hoist operator is satisfied that it is safe to move the conveyance.

Who may give signals to hoist operator

214 Unless the hoist system is operating under automatic control, an employer or contractor must ensure that:

(a) except in an emergency, only workers who are designated pursuant to clause 192(1)(a) give signals to the hoist operator;

(b) a worker authorized to give a signal to the hoist operator is at the same level as the conveyance when giving the signal; and

(c) no unauthorized worker interferes with the hoist signalling system.

PART XI
Storage, Transportation and Use of Explosives

DIVISION 1
Interpretation and General Requirements

Interpretation of Part

215 In this Part:

(a) **"black powder"** means a deflagrating or low-explosive granular compound of sulphur, charcoal and an alkali nitrate;

(b) **"cartridge"** means an individual closed shell, bag or tube containing an explosive;

(c) **"designated storage area"** means a storage area designated pursuant to section 222;

(d) **"detonating cord"** means a flexible linear explosive charge consisting of a core of powdered explosive enclosed in textile and plastic coverings;

(e) **"federal Act"** means the *Explosives Act* (Canada);

(f) **"federal regulations"** means the *Explosives Regulations*, *Consolidated Regulations of Canada*, 1978, chapter 599;

(g) **"initiate"** means the process of causing an explosive to detonate;

(h) **"mishole"** means a blast hole in which a charge or part of a charge failed to detonate on initiation;

(i) **"primer"** means a unit, package or cartridge of explosive used to initiate other explosives, and which contains a detonator or detonator cord;

(j) **"safety fuse"** means a core of black powder enclosed within various layers of textiles, plastic, asphalt and wax that is designed to burn at a rate of approximately 132 seconds per metre;

(k) **"safety fuse assembly"** means an initiating device consisting of:

(i) a pre-cut length of safety fuse with an anti-static staple;

(ii) a high strength detonator affixed to one end of the device; and

(iii) an igniter cord connector affixed to the other end of the device.

General duty

216 An employer or contractor must ensure that all explosives are handled, used, stored, transported and disposed of in a safe manner.

Smoking prohibited

217 No employer or contractor shall permit any person to smoke:

(a) while handling, using, storing, transporting or disposing of explosives; or

(b) while the person is within eight metres of any place where explosives are stored or handled.

Identification of explosives

218 An employer or contractor must ensure that no explosives are used unless the following information from the supplier is plainly printed or marked on the outer packaging or shipping box of the explosive:

(a) the number of the factory licence issued to the manufacturer of the explosive pursuant to the federal regulations;

(b) the date of manufacture of the explosive;

(c) the strength of the explosive.

Classes of explosives

219 An employer or contractor must ensure that no explosive is used underground unless it is an explosive mentioned in Fume Class 1 as established by the Explosives Regulatory Division of the Department of Natural Resources of the Government of Canada, as amended from time to time or approved by the chief mines inspector.

Manufacture of explosives

220 An employer or contractor must ensure that no explosives are manufactured at a mine unless the mine is a licensed factory as defined in the federal Act.

DIVISION 2
Storage of Explosives

Interpretation of Division

221 In this Division, **"permit"** means a permit issued pursuant to section 224.

Designated storage area

222 An employer or contractor may designate any of the following as places in which explosives may be stored:

(a) a magazine or day box that meets the requirements of subsection 229(1);

(b) a storage area that meets the requirements of subsection 224(6);

(c) a vehicle that:

(i) meets the requirements of sections 233 and 234; and

(ii) is parked in an area that is designated by the employer or contractor as an area in which a vehicle transporting explosives may be parked.

Storage in magazine, day box or vehicle

223(1) Subject to subsection (2), an employer or contractor must ensure that:

(a) all explosives, detonators and detonating cords that are not required for immediate use are stored in a magazine that is constructed in accordance with sections 225 and 226; and

(b) the quantity of explosives, detonators and detonating cords stored in a magazine does not exceed the maximum quantity specified in the permit for that magazine, and in no case shall the quantity exceed:

(i) in the case of a magazine located on the surface, the amount necessary to operate the mine for one year; and

(ii) in the case of a magazine located underground, the amount necessary to operate the mine at peak production for eight days.

(2) Subject to subsections (4) and (5), explosives, detonators and detonating cords may be stored temporarily underground:

(a) subject to subsection (3), in a day box; and

(b) in a vehicle designated pursuant to clause 222(c).

(3) If explosives, detonators or detonating cords are stored temporarily underground in a day box pursuant to clause (2)(a), the employer or contractor must ensure that the quantity stored does not exceed 150 kilograms.

(4) An employer or contractor must ensure that:

(a) explosives or detonating cords are not stored in the same magazine or day box in which detonators are stored; and

(b) explosives or detonating cords are not stored in the same area of a vehicle designated pursuant to clause 222(c) in which detonators are stored.

(5) An employer or contractor must ensure that if detonators are stored underground:

(a) they are stored in separate closed containers or magazines; and

(b) except if they are stored in a vehicle designated pursuant to clause 222(c), they are not located within eight metres of:

(i) a magazine containing explosives; or

(ii) a day box containing explosives.

(6) If explosives, detonators or detonating cords are removed from storage for use, the employer or contractor must ensure that any unused explosives, detonators or detonating cords are returned to a magazine, day box or vehicle designated pursuant to clause 222(c) by the end of the shift.

(7) An employer or contractor must ensure that a copy of all regulations and workplace procedures relating to the safe storage and handling of explosives, detonators and detonating cords in a magazine are posted in each magazine.

Permit required

224(1) No person shall construct a magazine or store explosives in a magazine unless the person holds a valid permit for that magazine.

(2) An employer or contractor may apply to the chief mines inspector for a permit to construct and operate a magazine by submitting to the chief mines inspector:

(a) the plans for the magazine, including information about the proposed site; and

(b) any other information that the chief mines inspector may require.

(3) If the chief mines inspector is satisfied that the plans for a magazine meet the requirements of these regulations, the chief mines inspector:

(a) may issue a permit to authorize the construction and operation of the magazine;

(b) must specify in a permit the maximum quantity of explosives, detonators and detonating cords that may be stored in the magazine; and

(c) may impose any terms and conditions on a permit that the chief mines inspector considers appropriate in the circumstances.

(4) If the chief mines inspector is satisfied that it is appropriate to do so, the chief mines inspector may cancel a permit issued pursuant to this section.

(5) If the amount of explosives, detonators or detonating cords to be stored underground will exceed the amount necessary to operate a mine for 24 hours, an employer or contractor must obtain a permit from the chief mines inspector pursuant to subsection (3) that specifies the method of storage of the explosives, detonators and detonating cords.

(6) If longhole or similar blasting operations are being conducted, an employer or contractor may store the amount of explosives, detonators and detonating cords that can be loaded in 24 hours in a storage area that:

(a) is not a day box or magazine; and

(b) is located in a safe and secure area that is out of the way of any traffic.

Design of magazines

225(1) An employer or contractor must ensure that a magazine located on the surface is designed and constructed in accordance with:

(a) these regulations;

(b) the standards set out in the May 2001 edition of *Storage Standards for Industrial Explosives* published by the Explosives Regulatory Division of the Department of Natural Resources of the Government of Canada; and

(c) any terms and conditions imposed on the permit.

(2) An employer or contractor must ensure that a magazine located on the surface is not heated unless detailed plans and specifications relating to the magazine are prepared relating to the proposed heating and those plans and specification are approved by the Explosives Regulatory Division of the Department of Natural Resources of the Government of Canada.

Electrical fixtures in magazines

226 If a magazine is equipped with an electrical fixture, the employer or contractor must ensure that, with respect to the magazine:

(a) the wiring of the electrical fixture is constructed of moisture-proof armoured cable or rigid conduit;

(b) the light fixture is explosion-proof;

(c) the heating device:

(i) operates at a low surface temperature;

(ii) is suitable for an explosive atmosphere; and

(iii) is protected against operating beyond 125% of capacity;

(d) the lighting circuits do not operate in excess of 10 amps;

(e) the electrical switch and circuit breakers are located outside the magazine in a fire-resistant enclosure; and

(f) the electrical system is protected against lightning strikes.

Magazines located on surface

227(1) If a magazine is located on the surface, the employer or contractor must ensure that:

(a) the magazine is protected by a fire break that extends a minimum of eight metres in all directions from the magazine;

(b) no flammable material is stored within eight metres of the magazine; and

(c) the magazine is conspicuously marked with signs that are posted:

(i) eight metres from the start of each road that approaches the magazine; and

(ii) at least two metres above the ground for ease of visibility.

(2) An employer or contractor must ensure that a magazine on the surface is located so that its distance from any public place is not less than the minimum distance set out in Table 2 for the maximum quantity of the class of explosive to be stored in the magazine, in the case of a magazine:

(a) constructed after the coming into force of these regulations; or

(b) physically moved from one location to another after the coming into force of these regulations.

Design of day boxes

228 An employer or contractor must ensure that any day box is:

(a) constructed in a manner, and of materials, that will prevent any sparking caused by friction;

(b) painted red and conspicuously marked in capital letters "DANGER-EXPLOSIVES"; and

(c) separated from any other day box by at least eight metres.

Location of underground storage

229(1) An employer or contractor must ensure that any magazine or day box used underground in a mine is located in a safe, secure area out of the way of traffic.

(2) An employer or contractor must ensure that no explosive or detonator is stored underground in a mine within 60 metres of any:

(a) shaft station;

(b) hoist room;

(c) refuge station;

(d) electrical substation;

(e) fuel storage area;

(f) workshop; or

(g) lunchroom.

Safety precautions

230(1) An employer or contractor must ensure that:

(a) a magazine or day box is kept clean, dry and free from grit at all times;

(b) any broken cartridges and spilled explosives are cleaned up immediately; and

(c) after the clean-up of any spilled explosives in a magazine, any contaminated area is treated with a suitable neutralizing agent to remove any traces of the explosive.

(2) An employer or contractor must ensure that no ferrous metal is kept or used in any magazine or day box unless the metal is sheathed with a suitable non-sparking material.

(3) An employer or contractor must ensure that no open flame is taken or used within eight metres of any explosive, detonator or detonator cord.

Control of magazines

231(1) An employer or contractor must ensure that each magazine is kept securely locked at all times except during deliveries, withdrawals and inspections conducted pursuant to section 232.

(2) An employer or contractor must ensure that the following information is recorded for each magazine:

(a) the quantity of explosives, detonators and detonating cord kept in the magazine;

(b) the date of delivery of any explosives, detonators or detonating cord to the magazine and the quantity and type delivered;

(c) the date of issuance of any explosives, detonators or detonating cord from the magazine and the quantity and type issued.

(3) An employer or contractor must ensure that, at each magazine, the oldest stock of each type and size of explosive is used first.

Inspection and maintenance

232(1) An employer or contractor must:

(a) appoint a person who holds a valid blaster's certificate issued pursuant to section 248 or a temporary authorization to blast issued pursuant to section 246 to:

(i) conduct a thorough weekly inspection of all magazines and day boxes;

(ii) record the information required by subsection 231(2); and

(iii) submit a written report to the employer or contractor summarizing the results of each inspection; and

(b) countersign the entries made pursuant to subclause (a)(ii).

(2) An employer or contractor must ensure that:

(a) any unsafe condition identified pursuant to subsection (1) or otherwise is corrected as soon as possible; and

(b) all deteriorated explosives are disposed of in a safe manner.

DIVISION 3
Transportation of Explosives

Vehicles

233(1) An employer or contractor must ensure that:

(a) any vehicle used for transporting explosives, detonators or detonating cord is maintained in good mechanical condition; and

(b) any metal parts on a vehicle used for transporting explosives that may come in contact with a container of explosive are covered with a suitable non-sparking material.

(2) An employer or contractor must ensure that any vehicle used for transporting explosives is equipped with:

(a) two 4.5 kilogram multi-purpose dry chemical fire extinguishers that are readily available to the driver of the vehicle;

(b) a battery disconnect; and

(c) if there is the possibility that the vehicle will be used in conditions of reduced visibility, a flashing red light attached to the vehicle in a visible location.

Placards for vehicles

234 An employer or contractor must ensure that any vehicle being used for transporting explosives is equipped with placards that:

(a) are clearly visible and legible; and

(b) are placed:

(i) on each side and each end of the vehicle so that the placards are visible from any direction; and

(ii) on a contrasting background apart from any other marking with which the placards might be confused.

Control of vehicles

235(1) An employer or contractor must ensure that a vehicle being used to transport explosives:

(a) is under the charge of a worker who holds a valid blasting certificate issued pursuant to section 248 or a temporary authorization to blast issued pursuant to section 246; and

(b) is not left unattended unless:

(i) the vehicle is designated by the employer or contractor as a vehicle that may only be used for transporting and holding explosives;

(ii) the vehicle is parked in an area that is designated by the employer or contractor as an area in which a vehicle transporting explosives may be parked; and

(iii) the supervisor records the details of the vehicle's load and location in the shift record.

(2) An employer or contractor must ensure that the driver of a vehicle used to transport explosives:

(a) drives in a careful manner;

(b) drives at a speed that is reasonable for the prevailing conditions; and

(c) stops the vehicle before crossing a railway track.

(3) The driver of a vehicle used to transport explosives must:

(a) drive in a careful manner;

(b) drive at a speed that is reasonable for the prevailing conditions; and

(c) stop the vehicle before crossing a railway track.

Passengers

236 An employer or contractor must ensure that no workers travel in or on a vehicle that is being used to transport explosives, other than those workers who are necessary for the handling of the explosives.

Loading and unloading of vehicles

237 If a vehicle is used to transport explosives, the employer or contractor must ensure that:

(a) no other materials are carried in or on the vehicle;

(b) the explosives are safely secured;

(c) the vehicle is not loaded to more than 80% of its rated carrying capacity;

(d) the engine of the vehicle is not left running during loading or unloading of the explosives, unless a device powered by the vehicle's engine is used for the loading or unloading; and

(e) except as permitted pursuant to clause 223(2)(b), any explosives not required for immediate use are returned to a magazine and not left in the vehicle.

Refuelling

238(1) An employer or contractor must ensure that, except in an emergency, no vehicle is refuelled while it is being used to transport explosives.

(2) If a vehicle is refuelled while being used to transport explosives, the employer or contractor must report the details of the occurrence to the committee as soon as possible.

(3) Subsections (1) and (2) do not apply to a vehicle that is used only for the transportation and storage of explosives, detonators or detonating cord.

Manner of transportation - general

239(1) If explosives are transported from a designated storage area to any other designated storage area or to a point of use, the employer or contractor must ensure that the transportation is completed as soon as possible and is carried out or supervised by a competent person authorized for that purpose by the employer or contractor.

(2) If any explosives are delivered to a shaft station or near the shaft collar or other entrance to a mine, the employer or contractor must ensure that the explosives are transported to a designated storage area or point of use as soon as is reasonably possible.

(3) If explosives are being heated while being transported in a vehicle, the employer or contractor must ensure that:

(a) the energy source used to provide energy to the heating device:

(i) does not directly involve the combustion of fuel; and

(ii) is contained in a compartment or enclosure that:

(A) is separate from the explosives; and

(B) is constructed of noncombustible materials;

(b) a barrier is maintained between the explosives and the heating device to prevent the explosives or their containers from coming into contact with the heating device;

(c) all exposed surfaces of the heating device are maintained at a temperature of 100°C or less; and

(d) the temperature in the area surrounding the explosives that is closest to the heating device is monitored at all times while the explosives are being heated.

Transportation in conveyances

240 If a conveyance is being used to transport explosives, the employer or contractor must ensure that:

(a) the operation is conducted or supervised by a person authorized for that purpose by the employer or contractor;

(b) the authorized worker informs the person in charge of the conveyance and the hoist operator that explosives are being transported;

(c) no other material is transported in the conveyance at the same time as explosives are transported; and

(d) no person travels in the conveyance with the explosives, except for the worker in charge of the conveyance and the persons transporting the explosives.

Transportation by locomotive

241(1) If track haulage is used to transport explosives underground, the employer or contractor must ensure that:

(a) if it is reasonably practicable to do so, the locomotive is located at the front of the train transporting the explosives;

(b) if it is not reasonably practicable to locate the locomotive at the front of the train:

(i) the locomotive is located at the rear of the train; and

(ii) a worker is positioned to warn the driver of the locomotive and other workers of any hazard;

(c) the car carrying the explosives is separated from the locomotive battery or trolley by an empty car or a draw-bar of equivalent length; and

(d) no explosives are carried on the locomotive.

(2) If a trolley locomotive is used to transport explosives, the employer or contractor must ensure that the car carrying the explosives is protected against contact with any trolley wire.

Transportation of detonators

242(1) In this section, **"suitable closed container"** means a container that is composed of material that is designed to prevent sparking caused by friction.

(2) An employer or contractor must ensure that detonators are not carried on a vehicle carrying explosives unless the detonators are:

(a) transported:

(i) in suitable closed containers; and

(ii) in quantities not greater than 1,000 detonators; and

(b) kept separate from other explosives.

(3) Detonators may be transported from the nearest designated storage area at a mine to the point of use without placing them in separate closed containers if the detonators are kept separate from other explosives.

(4) An employer or contractor must ensure that primers are prepared:

(a) as near as is practicable to the place where they are to be used;

(b) in a quantity that is sufficient only for the immediate work at hand; and

(c) using only tools of non-sparking material.

DIVISION 4
Use of Explosives

Interpretation of Division

243 In this Division:

(a) **"blaster"** means a person who conducts a blasting operation, with or without the assistance of another person;

(b) **"blaster's certificate"** means a blaster's certificate issued pursuant to section 248;

(c) **"blasting machine"** means a device that provides electrical energy or shock energy for the purpose of energizing a detonator;

(d) **"bootleg"** means a remnant of a blast hole that did not properly break when the blast was initiated;

(e) **"firing cable"** means a heavy-gauge reusable wire that connects an electrical power source with an electrical blasting circuit;

(f) **"lead wire"** means a light-gauge disposable wire that connects an electrical power source with a circuit containing electric detonators.

Qualifications of blaster

244 No person shall conduct a blasting operation, and no employer or contractor shall require or permit a person to conduct a blasting operation, unless:

(a) the person is trained and is competent to act as a blaster;

(b) the person:

(i) holds a valid blaster's certificate; or

(ii) holds a temporary authorization to blast issued pursuant to section 246;

(c) the person has adequate knowledge of the language normally used at the mine;

(d) the person has mining experience that is adequate for undertaking the duties of conducting a blasting operation; and

(e) the person is authorized by the person's employer or contractor to act as a blaster.

Suspension of authorization to blast

245 If an employer or contractor suspends or revokes an authorization to act as a blaster, the employer or contractor shall immediately inform the chief mines inspector of the suspension or revocation and the reasons for it.

Temporary authorization to blast

246(1) An employer or contractor:

(a) may issue a written temporary authorization to blast to a worker who, in the opinion of the employer or contractor:

(i) has adequate knowledge of the language normally used at the mine;

(ii) has mining experience and training that is adequate for undertaking the duties of conducting a blasting operation; and

(iii) has demonstrated adequate practical knowledge of explosives and safe blasting procedures; and

(b) must forward to the chief mines inspector a copy of any temporary authorization to blast issued pursuant to clause (a) within 14 days of issue.

(2) A temporary authorization to blast expires on the earlier of the following dates, unless it is revoked or suspended pursuant to section 245:

(a) 180 days after the date of issue;

(b) the day on which the worker is issued a blaster's certificate.

(3) An employer or contractor shall not renew a temporary authorization to blast unless at least 60 days have passed since the expiration of the temporary authorization.

Blaster's examination

247(1) A person is eligible to take the blaster's examination if:

(a) the person has been recommended by his or her employer or contractor to the chief mines inspector; and

(b) the employer or contractor of that person provides a written notice to the chief mines inspector stating the person meets the qualifications set out in section 244.

(2) The chief mines inspector may set an examination to test the knowledge, with respect to the following subjects, of a person who wishes to obtain a blaster's certificate:

(a) legal requirements and standards applicable to blasting and the use of explosives;

(b) the nature and types of explosives and the selection of the appropriate types of explosives;

(c) storage and transportation of explosives;

(d) initiation systems and the selection of the appropriate types of initiation systems;

(e) blasting techniques and practices;

(f) primers;

(g) safety precautions to be used before, during and after blasting;

(h) the methods of loading holes and safety precautions to be used in loading holes;

(i) the firing of shots, the connection of detonator lead wires and firing cables, and the testing of firing circuits;

(j) misfires and faulty firing circuits.

(3) The chief mines inspector may permit a person who fails the blaster's examination to make another attempt after a period of not less than 30 days after the date of the previous attempt.

Blaster's certificate

248(1) The chief mines inspector may issue a blaster's certificate to a person if that person has passed the blaster's examination within six months prior to the date of issuance of the blaster's certificate.

(2) The chief mines inspector may impose any terms and conditions on the blaster's certificate that the chief mines inspector considers appropriate.

(3) No blaster shall fail to comply with any term or condition imposed on the blaster's certificate pursuant to subsection (2).

(4) Subject to section 249, a blaster's certificate expires five years after the date of issue.

Revocation or suspension of blaster's certificate

249(1) The chief mines inspector may, at any time, revoke or suspend a blaster's certificate if the blaster fails to comply with any term or condition of the blaster's certificate or, in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

(2) The chief mines inspector must inform the blaster and the employer or contractor immediately in writing of the revocation or suspension of the blaster's certificate and the reasons for the revocation or suspension.

(3) If a blaster's certificate is revoked pursuant to this section, any person in possession of the revoked blaster's certificate, or a copy of the revoked blaster's certificate, shall immediately return it to the chief mines inspector.

Posting of names

250 An employer or contractor must ensure that the names of the workers authorized to blast pursuant to sections 248 and 246 are readily available for the information of workers.

Procedure before drilling

251(1) Subject to subsection (2), before drilling commences at a working face where blasting has taken place, the employer or contractor must ensure that the working face is washed with water and thoroughly examined for any misholes, bootlegs or residual explosive.

(2) If water cannot be used to wash the working face, the employer or contractor must:

(a) develop a procedure for the safe and effective examination of the working face for misholes, bootlegs or residual explosive; and

(b) ensure that the procedure developed pursuant to clause (a) is carried out before drilling is commenced.

Size of drill holes

252 An employer or contractor must ensure that each drill hole is of a suitable size to permit the free and unobstructed insertion of a cartridge to the bottom of the hole.

No drilling near charged holes

253 An employer or contractor must ensure that no drilling operation is conducted within eight metres of any working face in which one or more holes have been charged with explosive until those charges have been fired.

Drilling in open pit mine

254 If drilling is to be carried out in an open pit mine where blasting has taken place, the employer or contractor must ensure that:

(a) no hole is drilled:

(i) within 300 millimetres of any bootleg; or

(ii) if any part of the hole would be within eight metres of a hole charged with explosive, unless the hole is drilled under the direct supervision of a direct supervisor:

(A) to clear a blocked hole that is not a mishole; or

(B) to make another hole necessary for blasting a mishole in accordance with section 259; and

(b) if mining is by benches, the drilling pattern in alternate benches is staggered at a distance equal to half the interval between adjacent holes in the pattern.

Drilling in fractured rock

255(1) If fractured rock has been produced by blasting, the employer or contractor must ensure that no worker drills within eight metres of any area suspected of containing explosive unless the rock has been thoroughly examined to ensure that it does not have any misholes.

(2) If it is not reasonably practicable to examine the rock in accordance with subsection (1), the employer or contractor must ensure that a remotely controlled drilling procedure is used.

Drilling underground near explosives

256(1) In this section, **"cut bottom"** means the bottom of an arrangement of holes used to provide a space in which the surrounding rock can be blasted.

(2) An employer or contractor must ensure that no drilling takes place underground:

(a) within 150 millimetres of any bootleg;

(b) within 300 millimetres of any cut bottom that has been charged and blasted; or

(c) on any face that contains undetonated explosives, except in accordance with section 259.

Charging holes

257(1) An employer or contractor must ensure that only tools made of non-sparking material are used to charge a hole with explosive.

(2) A worker must use only tools made of non-sparking material to charge a hole with explosive.

Pneumatic charging

258(1) In this section, **"ANFO"** means a mixture of ammonium nitrate and fuel oil that is used as an explosive.

(2) An employer or contractor must ensure that no hole is charged with explosive by pneumatic means unless:

(a) the explosive to be used is a type that is compatible with the use of a pneumatic charger;

(b) only semi-conductive hose manufactured for the purpose is used;

(c) the loading equipment and mobile equipment used for loading the explosive are bonded to ground;

(d) the loading equipment used for loading the explosive is not in electrical contact with the mine grounding system;

(e) if an electrical detonator is to be used in the hole:

(i) plastic or non-conducting liners are not used; and

(ii) the detonator is not placed in the hole until the pneumatic loading of the hole is complete; and

(f) loading of the explosives is carried out by a procedure that will prevent:

(i) any dangerous build-up of static electricity; and

(ii) any hazard from stray electrical currents.

(3) If pneumatic charging methods are used with electric blasting caps, the employer or contractor must ensure that only collar priming is used.

(4) While charging holes by a pneumatic charging method, a blaster:

(a) must keep electric detonators at least eight metres away from the loading operation until all the holes have been charged and the charging device has been disassembled; and

(b) must not handle an electric detonator until any static electricity remaining on the blaster has been effectively discharged.

(5) An employer or contractor must ensure that no ANFO is pneumatically loaded into a plastic liner.

Misholes

259(1) If there is a mishole, the blaster must:

(a) mark the mishole by:

(i) inserting a conspicuous, non-metallic marker at the hole's out end;

(ii) roping off the area around the mishole to prevent unauthorized entry; or

(iii) using any other method authorized by the employer or contractor;

(b) blast the mishole as soon as it is safe to do so in accordance with blasting procedure; or

(c) wash out the explosive by an approved method if the explosive used is water soluble.

(2) If drilling is required, the blaster must notify the direct supervisor before commencing drilling.

(3) The direct supervisor must:

(a) determine the location, direction and depth of any hole necessary for blasting the misfired shot; and

(b) supervise the drilling of holes mentioned in clause (a).

(4) If any mishole remains at the end of a shift, the direct supervisor must record the location of each mishole in the shift record.

(5) If work on a working face is to be discontinued, the employer or contractor must ensure that, as soon as is reasonably practicable:

(a) the material broken at the firing of the last round is cleared from the working face;

(b) the working face is thoroughly examined for explosive in any cut-off hole or mishole;

(c) all bootlegs are painted for identification; and

(d) if the ground support is installed normally, the ground support is installed to the end of the workings.

Safety of workers during blasting

260(1) An employer or contractor must:

(a) develop a written procedure to ensure the safety of workers during blasting operations; and

(b) ensure that the procedure developed pursuant to clause (a) is followed when blasting operations are carried out.

(2) A blaster who carries out a blasting operation must follow the procedure developed pursuant to subsection (1).

(3) Without limiting the generality of subsection (1), a procedure required by that subsection must include provisions dealing with the following matters:

(a) removing persons from the blast area who may be endangered by the blast;

(b) in the case an open pit mine, controlling traffic on roads at the mine site;

(c) effective guarding of entrances to the blasting site to prevent entry of unauthorized persons;

(d) specifying the type of effective warning devices to be used, procedures for operating them and the timing of their use before and during a blast;

(e) providing for an orderly return to work when the worksite is safe after a blast.

(4) The effective guarding mentioned in clause (3)(c) must include posting a person at each entrance to the blast area and requiring each of those persons to remain until relieved by the blaster.

Controlling traffic on public road during surface blasting

261(1) In this section, **"public road"** means any road that is accessible to and intended for use by the public.

(2) If persons on a public road may be at risk during a an open pit mine blasting operation, the employer or contractor must develop and implement a written traffic warning plan that deals with the following matters:

(a) obtaining from the appropriate authority any necessary permission to warn traffic;

(b) the type of warning devices to be used;

(c) the number of workers needed to provide adequate warning;

(d) the procedures to be used by workers to control and warn traffic approaching the danger area.

Connecting underground workings

262 Before a connection is made between two underground workings, the employer or contractor must ensure that:

(a) a thorough examination is made of the workings towards which the active working is advancing to determine whether the other workings are safe and without hazard; and

(b) all approaches to both workings are effectively guarded in accordance with subsection 260(4) during blasting to prevent the unauthorized entry of any person if the distance between the two workings is less than the greater of:

(i) twice the length of the longest drill steel being used; and

(ii) five metres from the bottom of the longest hole.

Safety fuse assemblies

263(1) An employer or contractor must ensure that safety fuse assemblies are:

(a) purchased only as pre-assembled units;

(b) used only to initiate blasts;

(c) of a uniform length; and

(d) equipped with:

(i) an uncapped end that is painted a distinctive colour; and

(ii) an anti-static staple.

(2) An employer or contractor must ensure that safety fuse assemblies are not:

(a) cut to shorten their designed delay time; or

(b) used in confined areas such as chutes, ore passes or drawpoints.

More than one shot fired

264 If more than one shot is to be fired:

(a) the blaster must use igniter cord to ignite the safety fuse; and

(b) the employer or contractor must ensure that a second worker accompanies the blaster if a means other than a remote ignition method is being used to fire the shots.

Firing of charged holes

265(1) An employer or contractor must ensure that:

(a) each hole charged with explosive is fired in its planned sequence; and

(b) if the firing of one hole charged with explosive could affect another hole charged with explosive, all of the charged holes are fired in one operation.

(2) If there are holes charged with explosive at the end of a shift, the employer or contractor must ensure that:

(a) the area in which the holes are located is effectively marked and barricaded to prevent unauthorized entry; and

(b) the direct supervisor records the status of the holes remaining to be fired in the shift record.

Precautions re blasting in stages

266 If blasting is to take place in stages in a drift or a raise, a blaster must allow sufficient time for the following to occur before blasting another part of the round:

(a) the drift or raise must be clear of fumes; and

(b) the rock must cool to a point where there is no danger of premature detonation by heated ground.

Returning to scene of blast

267(1) If a blast is initiated with a safety fuse assembly, the blaster must ensure that no person returns to the scene of the blast until 30 minutes have elapsed after detonation.

(2) If there is reason to believe that there has been a mishole in a blasting operation, or the blaster is unable to count the shots, the blaster must ensure that no person returns to the scene of the blast until 60 minutes have elapsed after the lighting of the fuse or the closing of the blasting circuit.

(3) If reblasting occurs, the blaster must ensure that no person returns to the scene of the blast until 30 minutes have elapsed after the reblast.

(4) If a blast is initiated with electric delay action detonators and two or more shots were fired, the blaster must ensure that no person returns to the scene of the blast until 10 minutes have elapsed after the blast.

Repair of faulty circuit

268 In the case of a blast initiated by electrical detonators, if no shot is heard and a faulty circuit is indicated, the employer or contractor must ensure that the circuit is only repaired after the blaster has ensured that:

(a) the blasting machine is disconnected from the power source;

(b) the blasting switch is locked in the open position; and

(c) the lead wires are short-circuited.

Ventilation after blasting underground

269(1) An employer or contractor must ensure that:

(a) blasting operations underground are scheduled so that the exposure of workers to dust, fumes and smoke is kept as low as possible; and

(b) subject to subsection (2), adequate ventilation is provided to remove any harmful gas or fumes before a worker returns to a worksite underground after a blasting operation.

(2) Unless the conditions after a blasting operation can be predicted with reasonable accuracy, an employer or contractor must examine the worksite with an approved testing device to ensure that the worksite is safe for workers to re-enter.

Initiation by electrical means required

270 An employer or contractor must ensure that blasting is initiated only by electrical means in the following cases:

(a) if a shaft is being sunk;

(b) if a raise is being driven;

(c) if the area to be blasted is unusually wet;

(d) in chutes, ore passes or drawpoints and other confined spaces where escape by a worker is not readily available.

Blasting machines

271(1) In the case of a blast initiated by electrical means, the employer or contractor must ensure that only an approved blasting machine is used.

(2) An employer or contractor must ensure that a blasting machine is:

(a) stored in a location that is suitable to protect the machine from damage; and

(b) maintained regularly to ensure the proper functioning of the machine.

Initiating blasting from power distribution system

272(1) If the source of energy for initiating a blast is an electrical power distribution system, the employer or contractor must ensure that:

(a) the blasting circuit has an isolating transformer; and

(b) the firing device opens the circuit by gravity.

(2) The employer or contractor must ensure that an electrical power distribution system blasting switch:

(a) has the live side located in a fixed, locked box;

(b) is accessible only to the blaster and a worker authorized to conduct maintenance on the blasting device; and

(c) has a lightning gap that:

(i) is at least 1.5 metres between the blasting switch and the service switch; and

(ii) is only closed by a twist plug and cable assembly immediately before firing.

Blasting multiple areas with single electrical source

273 If blasting is to be initiated simultaneously in more than one area of a mine by a single source of electricity, the employer or contractor must ensure that:

(a) all workers are checked out of the affected areas before blasting;

(b) the initiation of the blast is under the direct supervision of a direct supervisor; and

(c) each branch circuit is isolated by a locking switch that automatically short circuits the branch circuit.

Blaster's duties - underground blasting with electricity

274 If blasting underground is initiated by electrical means, the blaster must ensure that:

(a) the lead wires of the electrical detonators are short-circuited at all times, except when the charges are to be fired;

(b) each firing cable and the lead wires of an electrical detonator are suspended individually and not allowed to make contact with any metallic object or power cable;

(c) the bare wire connector of the firing cable or of the lead wires of an electrical detonator does not touch any part of the worksite;

(d) the connected lead wire of an electrical detonator or a firing cable does not make contact with any electrical source or any material that conducts electricity;

(e) firing cables are clearly distinguishable from other wires;

(f) firing cables are used for blasting purposes only;

(g) the connecting ends of all lead wires, firing cables and electric detonators:

(i) are short-circuited until the final connection is made between the firing location and the blasting site;

(ii) remain short-circuited until all workers, other than the blaster, are removed to a place of safety;

(iii) are connected and the short circuits removed sequentially starting from the blasting face to the firing location; and

(iv) following a blast, are short-circuited sequentially starting from the firing location to the blasting face;

(h) firing cables used to initiate a blast at one worksite are not used to initiate a blast at another worksite until all proper precautions are taken to ensure that no firing cable has any connection with the lead wires from the first worksite;

(i) the electrical circuit is tested with an approved circuit-testing device and found to be satisfactory before the shot is fired;

(j) no worker is required or permitted to enter a place where a charge has been fired until:

(i) the firing cables are disconnected from the blasting machine and are short-circuited; or

(ii) in the case of a blasting operation using a power distribution system, the branch circuit is locked in the open position and the firing cables are short-circuited; and

(k) no electrical detonator is stored or placed within eight metres of an energized electrical conductor, except a firing cable being used in a blasting operation, unless precautions are taken to prevent premature initiation.

Blaster's duties - surface blasting with electricity

275 If blasting at the surface is initiated by electrical means, the blaster must ensure that:

(a) the lead wires of electrical detonators are short-circuited at all times, except when the charges are to be fired;

(b) firing cables are used for blasting purposes only;

(c) the electrical circuit is tested with an approved circuit-testing device and found to be satisfactory before a shot is fired; and

(d) the short circuit in the firing cable is replaced immediately after the firing cables are disconnected from the blasting machine.

Vehicles near charged holes

276(1) An employer or contractor must ensure that no vehicle or part of a vehicle, except a vehicle that is used to transport explosives, and no machine or equipment or part of a machine or equipment is operated within eight metres of the collar of a hole that is charged with explosive or that is being charged with explosive.

(2) An employer or contractor must ensure that an area where a hole is charged with explosive or is being charged with explosive is clearly marked to warn persons that entry is prohibited to unauthorized vehicles.

Protection against lightning

277(1) An employer or contractor must ensure that adequate precautions are taken to prevent any premature discharge of explosive due to lightning.

(2) If explosives are being fired by electrical means at an open pit mine or during a shaft-sinking operation at an underground mine, the employer or contractor must warn the blaster as soon as possible of the approach of an electrical storm.

(3) If explosives are being fired by electrical means at an open pit mine or during a shaft-sinking operation at an underground mine and an electrical storm is approaching, the employer or contractor must ensure that:

(a) all lead wires are short-circuited;

(b) all charging operations are stopped; and

(c) all workers:

(i) are withdrawn from any area where:

(A) charges have been loaded or connected; or

(B) there are supplies of explosives; and

(ii) remain at a safe distance until the danger from the electrical storm has passed.

(4) If an electrical storm is approaching, the employer or contractor must ensure that:

(a) any magazine located on the surface is closed; and

(b) all workers:

(i) are withdrawn from the area around the magazine; and

(ii) remain at a safe distance until the danger from the electrical storm has passed.

Protection against radio frequency hazards

278(1) If a radio-frequency transmitter is located within the general vicinity of a mine, the employer or contractor must ensure that no worker is required or permitted to use electrical detonators within the appropriate minimum distance set out in Tables 1 to 8 of the Institute of Makers of Explosives, Safety Library Publication No. 20, *Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electrical Detonators (Blasting Caps)*, December 1988, Washington, D.C.

(2) An employer or contractor must ensure that warning signs are posted as necessary requiring all mobile radio-frequency transmitters to be turned off while the transmitters are within 30 metres of an electrical blasting area that is located on the surface.

Blasting at adjacent mines

279 If blasting is to be carried out at two or more adjacent open pit mines or two or more underground mines that have connected workings, the employer or contractor must establish a mutually acceptable blasting time and procedure that will protect the health and safety of the workers at all of the mines.

Use of explosives re thermal conditions

280 An employer or contractor must ensure that:

(a) explosives are used according to the thermal conditions recommended by the manufacturer; and

(b) no explosive is used to blast rock or other material if there is a risk of premature detonation of the explosive by reason of the temperature of the rock or other material.

Cartridges

281(1) An employer or contractor must ensure that no explosive is removed from the original wrapping of a cartridge.

(2) No worker shall remove any explosive from the original wrapping of a cartridge.

Defective explosives, detonators

282(1) An employer or contractor must give notice to the chief mines inspector as soon as is reasonably possible when a defective explosive or detonator is discovered.

(2) The notice required by subsection (1) must include the name and address of the manufacturer of the explosive or detonator and the details of the discovery.

(3) An employer or contractor must ensure that any explosive or detonator that has become defective as a result of the passage of time or the method of storage:

(a) is not used; and

(b) is removed and disposed of in a safe manner in accordance with the manufacturer's recommendations.

(4) If an employer or contractor wishes to dispose of a significant amount of explosives, other than by detonation or returning the explosives to the supplier, the employer or contractor must first obtain the written approval of the chief mines inspector of the disposal procedure to be used.

Unauthorized removal

283 An employer or contractor must ensure that no unauthorized person removes any explosives, detonators or detonating cord from a mine.

PART XII
Lung-function Tests

Lung-function tests required for workers in a dust exposure occupation

284(1) In this section, **"dust exposure occupation"** means regular employment:

(a) underground; or

(b) in any part of a mine where ore or waste material is crushed, ground or screened by a process other than by a wet process.

(2) If a worker is regularly employed in a dust exposure occupation, an employer must:

(a) arrange for the worker to have lung-function tests during the worker's normal working hours:

(i) every 24 months, if the worker works in a potash mine; and

(ii) every 12 months, if the worker works in any other type of mine; and

(b) reimburse the worker for any part of the cost of the lung-function tests that the worker cannot otherwise recover.

(3) Lung-function tests arranged pursuant to subsection (2) must include the following tests:

(a) forced vital capacity;

(b) forced expiratory volume at one second.

(4) If a worker cannot attend the lung-function tests during the worker's normal working hours, an employer must credit the worker's attendance at the tests outside normal working hours as time at work and ensure that the worker does not lose any pay or other benefits.

(5) A worker who attends lung-function tests pursuant to this section is not precluded from requesting a medical examination pursuant to section 345 or 358 of the OHS regulations.

PART XIII
Lighting in Mines

Lighting re underground at a mine

285 At an underground mine, an employer, contractor or owner must provide suitable and adequate stationary lights that are located:

(a) in every underground shaft station that is in regular use;

(b) in every underground permanent workshop and garage that is in regular use;

(c) in every underground hoist room;

(d) in every underground permanent electrical substation;

(e) in every underground permanent fixed refuge station;

(f) in every underground fuel station that is in regular use; and

(g) at any other place underground where lighting is necessary because of the nature of the work being done or the equipment being used.

Emergency lighting underground at a mine

286 If a failure of the regular lighting system would be likely to create conditions dangerous to the health or safety of workers underground, an employer or contractor must provide suitable and adequate emergency lighting for the worksite.

Open flame prohibited

287 An employer or contractor must ensure that no open flame is used for illumination underground.

Cap lamps

288(1) If a worker goes underground, the employer or contractor must:

(a) provide the worker with a suitable and adequate cap lamp; and

(b) ensure that the worker keeps the cap lamp in his or her close personal possession at all times while working underground.

(2) An employer or contractor must ensure that a cap lamp used by a worker underground is capable of providing adequate illumination for the duration of that worker's shift.

Auxiliary lighting

289 If a worker must assess ground conditions underground at a distance greater than the effective range of the worker's cap lamp, the employer or contractor must provide auxiliary lighting suitable and adequate for the worker to safely carry out the assessment.

Lighting re open pit mine

290 If operations are conducted at an open pit mine during darkness, an employer or contractor must provide suitable and adequate lights that are located:

(a) at every place at the mine where vehicles regularly dump material over the edge of an embankment that is more than three metres high; and

(b) at any other place at the mine where lighting is necessary because of the nature of the work being done or the equipment being used.

PART XIV
Air Quality and Ventilation Underground at a Mine

Air quality underground

291(1) An employer or contractor must develop and implement a written program to monitor the quality and quantity of the air in all parts of an underground mine except in those areas barricaded or fenced off.

(2) The air quality program mentioned in subsection (1) must:

(a) be developed in consultation with the committee; and

(b) contain a description of:

(i) the locations to be monitored;

(ii) the frequency at which the locations are to be monitored; and

(iii) the type of equipment to be used and how the equipment is to be calibrated.

(3) An employer or contractor must ensure that:

(a) a competent person is responsible for measuring the air quality at the mine;

(b) the person mentioned in clause (a) records the result of each measurement; and

(c) the records of the air quality program are readily available to workers.

Airborne contaminants

292(1) In this section, **"uncombined silica"** means silica that is not combined chemically with any other element or compound.

(2) An employer or contractor must take all reasonably practicable steps to minimize the dissemination of dust into any active mining area underground at a mine.

(3) Except as otherwise provided in these regulations, to the extent that is reasonably practicable, an employer or contractor must ensure that in any underground part of a mine where workers work or pass:

(a) the concentration of airborne carbon monoxide does not exceed 25 parts per million at any time;

(b) the concentration of airborne carbon dioxide does not exceed 5 000 parts per million at any time;

(c) the concentration of airborne nitrogen dioxide does not exceed two parts per million at any time; and

(d) the oxygen content is not less than 19.5% and not more than 23%, by volume at any time.

(4) If mining is carried out underground in strata containing uncombined silica in a crystalline form, an employer or contractor must:

(a) so far as is reasonably practicable, minimize the dissemination of dust into the general mine air during the construction, use and maintenance of every ore pass;

(b) provide an effective means to spray water within a suitable distance of the working face of every drift or raise to suppress any dust;

(c) ensure that the spray mentioned in clause (b) is used for a minimum of 15 minutes after any blasting operation is complete; and

(d) provide every drill with a water jet, spray or other suitable attachment to prevent dust from escaping and ensure that the attachment is used at all times during a drilling operation.

Flammable gas underground

293(1) A worker who detects or suspects flammable gas underground must:

(a) cease any work or activity that may ignite the gas; and

(b) immediately notify the employer or contractor.

(2) If flammable gas is detected in a dangerous concentration underground, an employer or contractor must:

(a) take immediate steps to protect the health and safety of any worker who may be at risk;

(b) designate the area as a fire hazard in accordance with section 352;

(c) identify the source of the gas; and

(d) control the hazard.

General requirement for underground ventilation

294(1) Sections 65 to 67 of the OHS regulations do not apply underground.

(2) Subject to subsection (3), an employer, contractor or owner must, in every underground mine:

(a) ensure adequate ventilation;

(b) provide a mechanical ventilation system that is suitable and adequate to protect workers against inhalation of a contaminant of a kind and quantity that is likely to be hazardous to workers;

(c) ensure that the mechanical ventilation system required by clause (b) is maintained and properly used; and

(d) if reasonably practicable, ensure that the mechanical ventilation system required by clause (b) is equipped with a device that will provide an audible or visual warning when the system is not working effectively.

(3) Any area in an underground mine that is barricaded or fenced off is not required to be ventilated.

Failure of mechanical ventilation

295(1) In this section, **"stop"**, with respect to a mechanical ventilation system, does not include a stop that is caused by a brief interruption of the power supply.

(2) Subject to subsection (3), if the mechanical ventilation system underground at a mine fails or stops, the employer or contractor must ensure:

(a) that all persons are withdrawn from the affected area; and

(b) that no worker enters the affected area until:

(i) the mechanical ventilation system has been restored;

(ii) the affected area has been inspected by a competent person authorized by the employer or contractor; and

(iii) the employer or contractor determines that the affected area is safe and that work may proceed.

(3) If a mechanical ventilation system underground fails or stops or if its effect is reduced to the extent that worker health or safety may be affected, and if the employer or contractor determines that no immediate danger exists, work may continue if the employer or contractor ensures that:

(a) any activity that produces harmful contaminants underground is curtailed; and

(b) the quality of the air is monitored to ensure worker health and safety.

Maintenance on mechanical ventilation system

296 An employer or contractor must ensure that adequate provision is made to provide suitable and adequate protection to workers conducting maintenance on a mechanical ventilation system underground while the mechanical ventilation system is stopped for maintenance.

Ventilation near workings

297 An employer or contractor must ensure that:

(a) each underground working face is adequately ventilated; and

(b) if ventilation to an underground working face is provided by an auxiliary fan and ducts, the end of the duct is within 38 metres of the working face.

Non-ventilated areas

298(1) An employer or contractor must ensure that every entrance to a non-ventilated area is barricaded and a sign posted that:

(a) is placed in a conspicuous location;

(b) is legible;

(c) prohibits unauthorized entry; and

(d) if possible, identifies any specific hazard.

(2) An employer or contractor shall not permit a worker to enter or work in a non-ventilated area unless the employer or contractor has ensured that the non-ventilated area has been inspected and tested by a competent person who determines that:

(a) the air quality meets the standards described in subsection 292(3); and

(b) there is no other hazard.

PART XV
Haulage

DIVISION 1
Equipment

Interpretation

299 In this Part, **"gross vehicle weight"** means:

(a) the combined weight of a vehicle and the load carried on that vehicle; or

(b) the combined weight of two or more vehicles coupled or joined together and the combined weight of the loads carried on each of those vehicles.

Vehicles used on a grade or ramp

300 If a vehicle is operated on a grade or ramp underground, an employer or contractor must ensure that the vehicle is designed, constructed and maintained for that use.

Lights

301(1) Subject to subsections (2) and (3), an employer, contractor or supplier must ensure that every vehicle, other than a locomotive, is equipped with the following:

(a) lights that:

(i) provide illumination in the direction of travel; and

(ii) if reasonably practicable, show the width of the vehicle or unit of powered mobile equipment;

(b) subject to subsection (2), red rear lights.

(2) Rear lights are not required to be red if the vehicle is designed for bi-directional use.

(3) An employer, contractor or supplier must ensure that every train that operates underground is equipped with a suitable and adequate headlight and red tail light.

Windshields

302 If a vehicle is used on the surface and is equipped with a cab that has a windshield or windows, an employer or contractor must ensure that the windshield or windows are:

(a) constructed of transparent, shatter-proof safety glass or equivalent material;

(b) free from scratches or cracks that would impair the operator's vision; and

(c) equipped with:

(i) a suitable defrosting device; and

(ii) suitable windshield washers and wipers.

Air conditioning

303 An employer or contractor must ensure that the cab of a vehicle is equipped with an air conditioning system if:

(a) the vehicle is used in an open pit mine and has a gross vehicle weight in excess of 50 000 kilograms; or

(b) the chief mines inspector determines that the operator of the vehicle is regularly exposed to heat stress or dust that may affect the worker's health or safety.

Communication system

304 An employer or contractor must ensure that all vehicles that are used in an open pit mine are equipped with a two-way communication system.

Non-application of section 160 of OHS regulations

305 Section 160 of the OHS regulations does not apply to vehicles that are designed for bi-directional use.

Auxiliary steering on vehicles over 4 000 kilograms

306(1) Subject to subsection (2), an employer, contractor or supplier must ensure that every vehicle is equipped with an auxiliary device that will enable an operator to steer the vehicle long enough to bring it to a safe stop if:

(a) the vehicle has a gross vehicle weight in excess of 4 000 kilograms;

(b) the steering mechanism in the vehicle depends on power; and

(c) the loss of power to the steering mechanism might prevent the vehicle from being steered manually.

(2) Subsection (1) does not apply to vehicles that have a maximum operating speed of 20 kilometres per hour or less.

(3) If a rubber-tired vehicle uses an auxiliary hydraulic pump to provide emergency steering and is put into service on or after the day on which these regulations come into force, an employer, contractor or supplier must ensure that the hydraulic fluid supplied to the pump is taken from a separate reservoir or from an isolated section of the main reservoir.

(4) An employer or contractor must ensure that, on new vehicles purchased on or after the date on which these regulations come into force, the auxiliary device required by subsection (1):

(a) activates automatically if an automatic engine shutdown occurs; and

(b) activates an audible and visual warning device that warns the operator of impending engine shutdown.

(5) An employer or contractor must ensure that every new rubber-tired vehicle purchased on or after the date on which these regulations come into force is equipped with an engine shutdown override system that allows the operator to temporarily prevent engine shutdown while stopping the vehicle.

Wheel chocks

307(1) In this section, **"wheel chock"** means an external device, usually of triangular configuration, that prevents a rubber-tired wheel from rolling when the device is positioned in contact with the wheel when the wheel is at a standstill.

(2) An employer or contractor must ensure that wheel chocks provided on a rubber-tired vehicle in accordance with this section are capable of holding the vehicle when they are placed beneath the wheels bearing the heaviest portion of the load.

(3) If a rubber-tired vehicle will be regularly operated on a slope greater than 5%, an employer or contractor must ensure that:

(a) if the vehicle has a gross vehicle weight under 4 000 kilograms, the vehicle is equipped with at least one wheel chock; and

(b) if the vehicle has a gross vehicle weight equal to or in excess of 4 000 kilograms, the vehicle is equipped with at least two wheel chocks.

(4) When a rubber-tired vehicle is left unattended on a slope that is greater than 5%, an employer or contractor must ensure that the operator:

(a) parks the vehicle against the wall or berm with the wheels turned to the wall or berm and applies the parking brake;

(b) if the vehicle is equipped with one wheel chock, places the wheel chock snugly and squarely against the centre of the tread of one of the tires bearing the heaviest portion of the load; and

(c) if the vehicle is equipped with two or more wheel chocks, places the wheel chocks snugly and squarely against the centre of the tread of the tires bearing the heaviest portion of the load.

Roll-over protection structures

308(1) If a unit of powered mobile equipment is used underground and the chief mines inspector determines that there is a risk that the unit of powered mobile equipment may roll over, an employer, contractor or supplier must ensure that the unit of powered mobile equipment is equipped with a roll-over protective structure that meets the requirements of subsections 161(2), (3) and (5) of the OHS regulations.

(2) If a unit of powered mobile equipment is equipped with a roll-over protective structure, an employer, contractor or supplier must ensure that the unit of powered mobile equipment is also equipped with:

(a) seat-belts for the operator and for any other worker who is required or permitted to be in or on the unit of powered mobile equipment while the unit of powered mobile equipment is in motion; or

(b) if the work process renders the wearing of seat-belts impracticable, shoulder belts, bars, gates, screens or other restraining devices designed to prevent the operator and any other worker from being thrown outside the roll-over protective structure.

Protection from falling objects

309(1) If an operator of a vehicle, or any other worker who is required or permitted to be in or on a vehicle, is at danger of being struck by a falling object or projectile, an employer or contractor must ensure that, if reasonably practicable, the vehicle is equipped with a suitable and adequate cab, canopy, screen or guard.

(2) The cab, canopy, screen or guard mentioned in subsection (1) must be:

(a) designed by a professional engineer to withstand the force to which it may be exposed; and

(b) installed according to the instructions of a professional engineer.

Brakes and controls - locomotive

310(1) An employer, contractor or supplier must ensure that every locomotive is equipped with:

(a) suitable and adequate service brakes;

(b) a suitable and adequate parking brake; and

(c) a control lever that is installed to prevent the inadvertent detachment of the control lever from the locomotive.

(2) An employer, contractor or supplier must ensure that every storage battery and trolley locomotive is equipped with:

(a) a control lever that is installed to prevent the inadvertent detachment of the control lever from the locomotive when the power is on; and

(b) a control switch that is designed to return to a neutral position when the switch is released.

Brakes - vehicles

311(1) In this section:

(a) **"secondary braking system"** means a braking system that:

(i) is capable of stopping a rubber-tired vehicle in the event of any single failure in the service braking system; and

(ii) may have one or more components in common with the service braking system;

(b) **"service braking system"** means a primary braking system, of any type, that is used for stopping and holding a vehicle.

(2) An employer, contractor or supplier must ensure that every vehicle is equipped with:

(a) a service braking system that is capable of safely stopping and holding a fully loaded vehicle on all expected operating grades;

(b) an effective independently activated parking brake that is capable of holding a fully loaded vehicle on all expected operating grades; and

(c) if the vehicle is purchased on or after the day on which these regulations come into force and has a rated speed in excess of 32 kilometres per hour, a secondary braking system that is capable of safely stopping and holding the fully loaded vehicle on all expected operating grades.

(3) If a new rubber-tired vehicle is purchased for use underground on or after the day on which these regulations come into force, the employer, contractor or supplier must ensure that the vehicle is equipped with a braking system that:

(a) meets the requirements of Canadian Standards Association standard CAN/CSA-M424.3-M90, *Braking Performance - Rubber-Tired, Self-Propelled Underground Mining Machines*; or

(b) is approved by the chief mines inspector.

(4) If the gross vehicle weight of a rubber-tired vehicle used to transport ore or waste at an open pit mine exceeds 25 000 kilograms and is equipped with air or air-over hydraulic brakes, an employer, contractor or supplier must ensure that the vehicle is also equipped with:

(a) in addition to the normal operating air supply, an adequate source of emergency energy capable of applying the service brakes to safely stop and hold a fully loaded vehicle on all expected operating grades; and

(b) an alarm that will warn the operator when the available air pressure drops to the lowest safe operating pressure.

(5) If the gross vehicle weight of a rubber-tired vehicle used to transport ore or waste at an open pit mine exceeds 25 000 kilograms and is equipped with hydraulically operated brakes, an employer, contractor or supplier must ensure that it is also equipped with:

(a) a brake hydraulic system that is divided into two or more separate and independently operated circuits, each of which is capable of safely stopping and holding the fully loaded vehicle on all expected operating grades; and

(b) an alarm that will warn the operator of a failure in the brake hydraulic circuit.

Brakes - mobile conveyor underground

312(1) An employer or contractor must develop and implement a written procedure for the safe traversing of mobile conveyors over inclines and declines underground.

(2) An employer or contractor must ensure that a mobile conveyor is equipped with a braking system that is capable of securely stopping and holding the conveyor in place:

(a) if the mobile conveyor is purchased on or after the day on which these regulations come into force; or

(b) if the mobile conveyor is purchased before the day on which these regulations come into force and the chief mines inspector determines that there is a risk to workers from a mobile conveyor without brakes.

Brakes - testing

313(1) An employer or contractor must develop and implement a written program to test the brakes of all vehicles.

(2) Subject to subsection (3), the brake testing program mentioned in subsection (1) must describe the tests to be used:

(a) before putting a vehicle into service at a mine;

(b) when testing the braking systems of each vehicle at the beginning of each shift; and

(c) following a major repair to the braking systems of any vehicle.

(3) If a rubber-tired vehicle used to transport material on the surface has a gross vehicle weight in excess of 25 000 kilograms and a rated speed in excess of 32 kilometres per hour, an employer or contractor must ensure that the service brakes are tested annually in accordance with Table 3.

(4) An employer or contractor must ensure that:

(a) the results of the tests required pursuant to clauses (2)(a) and (c) and subsection (3) are recorded in the vehicle maintenance record mentioned in section 316; and

(b) the results of the tests required pursuant to clause (2)(b) are recorded in the vehicle record mentioned in section 316.

DIVISION 2
Vehicle Operation

Operation of vehicles

314(1) An employer or contractor must ensure that only competent workers are required or permitted to operate a vehicle.

(2) An employer or contractor must ensure that the operator of a vehicle:

(a) does not exceed a speed that is reasonable and safe; and

(b) operates the vehicle in a safe manner.

(3) A worker must ensure that he or she:

(a) does not exceed a speed that is reasonable and safe; and

(b) operates the vehicle in a safe manner.

Operation of locomotive underground

315(1) An employer or contractor must ensure that the operator of a locomotive underground:

(a) does not operate the locomotive unless the operator is properly stationed at the controls; and

(b) does not leave the controls unattended unless:

(i) the control lever has been placed in the park position;

(ii) the parking brakes have been set; and

(iii) in the case of a storage battery locomotive, the main switch has been placed in a non-operating position.

(2) An employer or contractor must ensure that:

(a) every locomotive underground is equipped with an audible warning alarm; and

(b) the operator of the locomotive activates the alarm:

(i) before the locomotive moves; and

(ii) when approaching:

(A) a manway;

(B) a place where workers are working; and

(C) any other place designated by the employer or contractor.

Vehicle records

316 An employer or contractor must provide for each vehicle:

(a) a vehicle record; and

(b) a vehicle maintenance record.

Pre-operation inspections

317 An employer or contractor must ensure that:

(a) the details of each pre-operation inspection conducted in accordance with these regulations are recorded in the vehicle record by the person who performed the inspection; and

(b) each vehicle record mentioned in section 316 is kept readily available to the operator of the vehicle or, if reasonably practicable, with the vehicle.

Vehicle maintenance

318 An employer or contractor must ensure that:

(a) all vehicles are maintained and repaired by a competent person; and

(b) the competent person records the details of the maintenance and repairs in the vehicle maintenance record mentioned in section 316.

Pneumatic tires mounted on split-rim assembly

319 In addition to the requirements of section 128 of the OHS regulations, an employer or contractor must ensure that:

(a) only a competent worker is required or permitted to work on a pneumatic tire mounted on a split-rim assembly; and

(b) before removing a vehicle wheel on which a pneumatic tire is mounted on a split-rim assembly:

(i) the tire is deflated to a safe pressure; or

(ii) a written work procedure is implemented that provides protection to the worker equivalent to that provided by the procedure mentioned in subclause (i).

Maintenance of rail tracks

320 An employer or contractor must ensure that every rail track used is maintained in safe working condition.

Maintenance of travelway

321 An employer or contractor must ensure that every travelway is:

(a) maintained in a safe condition; and

(b) free from any obstruction that may interfere with safe travel.

Restricted visibility vehicle

322(1) In this section, **"restricted visibility vehicle"** means a vehicle that restricts the view of the operator because of its design or size.

(2) If a restricted visibility vehicle is used in an open pit mine, an employer or contractor must ensure that no other vehicle approaches the restricted visibility vehicle unless that other vehicle is equipped with an effective means to indicate its presence to the operator of the restricted visibility vehicle.

Remote-controlled vehicles

323(1) In this section:

(a) **"control unit"** means a unit that transmits the operator's instructions to the remote-controlled vehicle;

(b) **"operator"** means a person who operates a remote-controlled vehicle;

(c) **"remote-control system"** means a system that allows an operator to control a remote-controlled vehicle from a distance using electrical impulses or radio signals;

(d) **"remote-controlled vehicle"** means a vehicle that is operated by a remote-control system.

(2) If a remote-controlled vehicle is used, an employer or contractor must develop and implement a written plan for the operation of remote-controlled vehicles.

(3) The plan mentioned in subsection (2) must:

(a) be developed in consultation with the committee; and

(b) address the safe installation, operation and maintenance of remote-controlled vehicles, including the following:

(i) the location of the operator;

(ii) the training of workers to be operators;

(iii) the location and arrangement of controls and safeguards;

(iv) the design and arrangement of transmitters and receivers to prevent inadvertent activation;

(v) the procedure to change an identification code and radio frequency for transmitters and receivers;

(vi) the testing, inspection and maintenance procedures, including the frequency of the testing, inspection and maintenance;

(vii) the extrication of a remote-controlled vehicle from a hazardous location.

(4) An employer or contractor must ensure that:

(a) the operator of a remote-controlled vehicle is in a safe location at all times while the control unit of the vehicle is energized;

(b) the control unit for a remote-controlled vehicle is de-energized when the control unit is not in use;

(c) a control unit operates only one vehicle;

(d) the remote-controlled vehicle is designed so that it will not be activated by any radio signal other than the signal from that vehicle's control unit;

(e) no remote-controlled vehicle accidentally starts by remote control;

(f) a remote-controlled vehicle only moves by remote control when direct pressure is applied to the controls on the control unit for that remote-controlled vehicle;

(g) the remote-controlled vehicle is equipped with a selector switch that enables the operator to operate the vehicle either manually or by remote control;

(h) the control unit is equipped with a device that warns the operator when the control unit is energized; and

(i) the control unit for each remote-controlled vehicle:

(i) is equipped with:

(A) controls that are the same as, or similar to, the manual controls on the remote-controlled vehicle; and

(B) both:

(I) an emergency stop button; and

(II) a tilt switch that, when the control unit is tilted more than 45^{o} from the vertical, deactivates the controls on the remote-controlled vehicle and applies the brakes; and

(ii) is designed to ensure that:

(A) the control unit will not activate detonators; and

(B) only an authorized person can change the identification code or radio frequency of the control unit or the receiver on the vehicle.

Traffic control plan

324(1) If a worker is in danger from vehicular traffic, an employer or contractor must develop and implement a written traffic control plan to protect the worker from traffic hazards.

(2) The traffic control plan mentioned in subsection (1) must:

(a) be developed in consultation with the committee; and

(b) set out, if appropriate:

(i) the maximum allowable speed of any vehicle in use;

(ii) the maximum operating grades;

(iii) the location and type of control signs;

(iv) the route to be taken by vehicles and units of powered mobile equipment;

(v) the priority to be established for classes of vehicles;

(vi) the location and type of barriers, restricted areas or safety stations;

(vii) the procedure to be used in case of an emergency; and

(viii) the duties of workers and the employer or contractor.

(3) An employer or contractor must ensure that:

(a) workers are trained in the traffic control plan developed pursuant to subsection (1); and

(b) the traffic control plan developed pursuant to subsection (2) is made readily available for reference by workers.

Clearance for underground haulage

325(1) If a train is used underground, an employer or contractor must ensure that:

(a) a clearance of at least 450 millimetres is maintained between:

(i) the sides of the travelway or any obstruction; and

(ii) the locomotive or any car in the train; and

(b) either:

(i) a clearance of at least 600 millimetres is maintained between:

(A) one side of the travelway or any obstruction; and

(B) the locomotive or any car in the train; or

(ii) safety stations are cut every 30 metres in the travelway.

(2) If workers and vehicles, other than a locomotive, regularly use the travelway located underground, an employer or contractor must ensure that either:

(a) a total clearance of at least two metres is maintained between the sides of the travelway and the vehicle; or

(b) safety stations are cut every 30 metres in the travelway.

(3) If a vehicle, other than a locomotive, is used underground, an employer or contractor must ensure that a total clearance of at least 1.5 metres is maintained between:

(a) the sides of the haulage-way or any obstruction; and

(b) the vehicle.

(4) If a worker rides in the cab of a vehicle, an employer or contractor must ensure that a clearance of at least 300 millimetres is maintained between the roof of the travelway and the top of the cab.

(5) If a worker rides in a vehicle not fitted with a cab, an employer or contractor must ensure that a clearance of at least 1.2 metres is maintained between the roof of the travelway and the seat provided for that worker.

Safety stations

326(1) If a safety station is required pursuant to a provision of these regulations, an employer or contractor must ensure that the safety station is:

(a) clearly and conspicuously marked;

(b) clean and free of obstructions; and

(c) cut perpendicular to the travelway or as close to perpendicular as is practicable.

(2) An employer or contractor must ensure that a safety station excavated on or after the date on which these regulations come into force:

(a) is at least 1.2 metres deep;

(b) is at least 1.5 metres wide; and

(c) has a height that is at least the greater of:

(i) two metres; and

(ii) the height of the travelway.

(3) If on or after the date on which these regulations come into force a ramp that has a grade that is greater than 5% is constructed underground, an employer, contractor or owner must ensure that safety stations are cut every 30 metres on the ramp, except where an intersecting excavation provides protection equal to a safety station.

Seat-belts

327(1) In this section, **"brakeperson"** means a worker who assists the locomotive operator.

(2) Subject to subsections (3) and (4), an employer or contractor must ensure that no worker is transported on a vehicle underground unless the worker:

(a) is provided with a suitable seat;

(b) is seated; and

(c) if reasonably practicable, is secured by a seat-belt or other restraining device that is designed to prevent the worker from being thrown from the vehicle while it is in motion.

(3) If it is not reasonably practicable for a worker to be secured in a vehicle underground by a seat-belt or other restraining device, an employer or contractor must ensure that other suitable precautions are taken to minimize the risk to the worker of being thrown from the vehicle.

(4) A brakeperson who is riding on the back of a train is not required to be seated or to be secured by some other restraining device.

(5) If an open vehicle is used to transport a worker, an employer or contractor must ensure that no part of the worker's body protrudes beyond the side of the vehicle.

(6) Subject to subsections (3) and (4), an employer or contractor must ensure that the operator of a vehicle does not put it into motion unless all workers on the vehicle are seated.

(7) Subject to subsections (3) and (4), a worker must be seated and must use any seat-belt or other restraining device required in a vehicle pursuant to these regulations or pursuant to any other regulations made pursuant to the Act.

Transportation of workers

328(1) An employer or contractor must ensure that a worker is transported on a train only if a locomotive is at the leading end of the train.

(2) If the working face of a ramp is more than 90 metres below the top of the ramp entrance, an employer or contractor must provide suitable transportation for any worker who must travel the ramp.

DIVISION 3
Dump and Stockpiles

Interpretation of Division

329 In this Division:

(a) **"dump"** means a pile or heap of ore, coal or waste at a mine that:

(i) exceeds three metres in height; and

(ii) is not intended for reclamation;

(b) **"dump block"** means a safeguard positioned to prevent a vehicle from backing over the edge of a dump when dumping a load;

(c) **"stockpile"** means a pile or heap or ore, coal or waste at a mine that:

(i) exceeds three metres in height; and

(ii) is intended for reclamation.

Mine dump

330(1) An employer or contractor must develop a written dump plan at least 14 days before commencing construction of the dump, roads and ramps that are part of the dumping operation.

(2) The dump plan mentioned in subsection (1) must:

(a) be developed in consultation with the committee;

(b) be submitted to the chief mines inspector; and

(c) describe:

(i) the proposed location of the dump, roads and ramps;

(ii) the grades of each road and ramp;

(iii) the location of dump berms and dump blocks;

(iv) the location of restricted areas; and

(v) the safety procedures to be implemented, including signalling procedures.

(3) An employer or contractor must ensure that a dump plan developed pursuant to subsection (1) is made readily available to workers at the mine.

(4) An employer or contractor must ensure that a dump is designed by a professional engineer if at least one of the following circumstances exists:

(a) the dump plan contemplates a total dump volume in excess of one million cubic metres;

(b) the dump plan contemplates a dump height in excess of 50 metres;

(c) the dump plan contemplates a dump area in excess of five hectares;

(d) the dump is to be located on a natural or trimmed slope that is steeper than 20^{o} from the horizontal plane;

(e) the dump plan contemplates that waste material will be dumped or placed in a watercourse having a potential peak flow that is greater than one cubic metre per second, once in every 200 years;

(f) the proposed dump location may pose a hazard to a building, road, power transmission line, pipeline or major watercourse.

Dumping procedures

331(1) An employer or contractor must ensure that any dump located at a mine is:

(a) constructed in accordance with a dump plan developed pursuant to section 330;

(b) maintained in a stable and safe condition; and

(c) capable of supporting any vehicle intended for use on the dump.

(2) If a bank is more than three metres high, an employer or contractor must ensure that no material is dumped over the edge of the bank or within three metres of the crest of the dump berm unless:

(a) in the case of a truck, there is:

(i) a dump block sufficient to prevent the truck from going over the dump edge;

(ii) a dump berm and a competent dump signaller to direct the truck operator; or

(iii) a dump berm that is continually maintained; and

(b) in the case of a rubber-tired front-end loader, there is:

(i) a dump berm; or

(ii) a dump block.

(3) If a dump berm or dump block is installed at a dump, an employer or contractor must ensure that:

(a) the height of the berm or block is the lesser of:

(i) 75% of the height of the largest tire found on any vehicle used for dumping; or

(ii) the maximum height over which a truck is capable of dumping; or

(b) the block is:

(i) designed by a professional engineer; and

(ii) securely anchored.

Stockpiles

332(1) If material is to be stored in a stockpile, an employer or contractor, in consultation with the committee, must:

(a) develop a work plan for the operation of the stockpile to ensure the health and safety of workers who work on or near the stockpile;

(b) make a copy of the work plan readily available to workers at the stockpile; and

(c) ensure that all workers and self-employed persons comply with the work plan.

(2) A work plan for the operation of a stockpile must be in writing and must include provisions for:

(a) supervision of the operation;

(b) training of workers;

(c) any necessary limits on the use of equipment on or near the stockpile;

(d) control of:

(i) the formation of dangerous slopes; and

(ii) the undermining of the stockpile; and

(e) control of drawpoints and dumping operations.

DIVISION 4
Conveyors

General requirements for conveyors

333(1) An employer or contractor must ensure that no worker:

(a) rides on a conveyor belt; or

(b) except as provided in subsection (2), crosses a belt conveyor that has not been locked out.

(2) A worker may cross a belt conveyor on a walkway that:

(a) has guardrails; and

(b) is:

(i) at least 600 millimetres wide if the walkway was installed before July 1, 1997; or

(ii) at least 900 millimetres wide if the walkway was installed on or after July 1, 1997.

(3) If a worker may be at risk from being caught in a pinch point at the head, tail, drive or tension pulleys of a belt conveyor, an employer or contractor must ensure that:

(a) the pinch point is protected by an effective safeguard; and

(b) the safeguard extends at least one metre beyond the pinch point.

(4) An employer or contractor must ensure that a belt conveyor is equipped with a belt-slip detection device designed to stop the drive motor in the case of belt blockage or belt slippage if the belt conveyor is:

(a) used underground; or

(b) installed in a building and is more than 15 metres long.

(5) If an elevated conveyor crosses over a place where a worker may pass or work, an employer or contractor shall ensure that suitable precautions are taken to prevent materials on the conveyor from falling on the worker.

Start-up warning device required

334(1) An employer or contractor must ensure that a belt conveyor is equipped with an effective start-up warning device:

(a) if a conveyor is started by remote control; or

(b) if any portion of the conveyor is not visible to the worker starting the conveyor.

(2) The start-up warning device mentioned in subsection (1) must:

(a) subject to subclause 336(2)(b), be located at suitable intervals along a conveyor; and

(b) have a mechanism that provides a 10-second delay between the sounding of the warning and the start-up of the conveyor.

Pull cords

335 Subject to subsections 336(1) and (2), an employer or contractor must ensure that:

(a) the belt conveyor is equipped with controls that must be reset manually after an emergency stop and before the conveyor can be restarted;

(b) every accessible section of the belt conveyor is equipped with a pull cord or other device approved by the chief mines inspector that is capable of stopping the conveyor in the case of an emergency; and

(c) the pull cord mentioned in clause (b):

(i) reaches from the head pulley to the tail pulley; and

(ii) is located to maximize its effective use.

Temporary extensible belt conveyor

336(1) If a temporary extensible belt conveyor is used underground, an employer or contractor must ensure that:

(a) the conveyor is equipped with pull cords or emergency stop controls that are located at the drive unit, the delivery end and, if reasonably practicable, the return end;

(b) the pull cord or emergency stop controls mentioned in clause (a) are located to maximize their effective use;

(c) subject to subsection (2), no worker works on a section of the conveyor that is not protected by pull cords or emergency stop controls unless that worker has stopped and locked out the conveyor;

(d) at each entrance to a room where the conveyor is located, notices are posted that:

(i) are conspicuous and legible; and

(ii) inform workers of the requirements of clause (c); and

(e) a start-up warning device that meets the requirements of clause 334(2)(b) is located at the drive unit, the delivery end and, if reasonably practicable, at the return end.

(2) If aligning the belt of a temporary extensible belt conveyor requires the belt to be in motion, an employer or contractor must:

(a) develop a procedure in consultation with the committee designed to keep workers out of direct contact with any moving part of the belt conveyor while the workers are aligning the belt, and ensure that workers are trained in the procedure; or

(b) ensure that the belt conveyor is equipped with an alternative approved device that is capable of stopping the belt conveyor in the case of an emergency.

Conveyor belts used underground at a mine

337(1) An employer or contractor must ensure that a conveyor belt that is installed underground:

(a) meets the Canadian Standards Association standard CAN/CSA-M422-M87, *Fire-Performance and Antistatic Requirements for Conveyor Belting*, types A1, A2, B1-a, or C; or

(b) is fire-resistant belting that is accepted by the US Mines Safety and Health Association under Code of Federal Regulations, Title 30, Part 18.

(2) An employer or contractor must ensure that a suitable and adequate automatic fire suppression system that meets the requirements of section 357 is installed at the conveyor drive pulley if either of the following types of belting is used on a conveyor underground:

(a) type C belting as described in the standard mentioned in clause (1)(a);

(b) belting that meets the requirements of clause (1)(b).

PART XVI
Use of Diesel Engines Underground

DIVISION 1
General

Diesel engine

338(1) An employer or contractor must ensure that no internal combustion engine, other than a diesel engine, is used underground.

(2) An employer or contractor must ensure that non-rail-bound diesel powered vehicles purchased on or after the date on which these regulations come into force and intended for use underground:

(a) meet Canadian Standards Association standard CAN/CSA-M424.2-M90, *Non-Rail-Bound Diesel-Powered Machines for Use in Non-Gassy Underground Mines*, excluding the requirements in sections 4.5, 5.3 and 5.4 of that standard; or

(b) are approved.

Form A to be completed

339(1) An employer or contractor must ensure that Form A is completed for each diesel engine to be used underground.

(2) The form mentioned in subsection (1) must be:

(a) completed before the diesel engine is put to use underground; and

(b) retained until the diesel engine is no longer in use underground.

Fuel

340(1) An employer or contractor must ensure that any diesel fuel used underground has:

(a) a flash point that is greater than 52°C; and

(b) a sulphur content that comprises less than 0.05% of the weight of the diesel fuel.

(2) An employer or contractor must ensure that no volatile fuel, including gasoline, is used in the starting mechanism of a diesel engine.

Fuel transfer

341 An approved portable container may be used to fuel a diesel engine underground only if the employer or contractor ensures that:

(a) the amount of fuel transferred from the fuel station to the engine is less than 50 litres; and

(b) the container is returned to the fuel station as soon as is reasonably practicable, but in any event, not later than the end of the shift during which the container was used.

Engine to be shut off

342(1) An employer or contractor must ensure that all diesel engines underground are shut off in each of the following circumstances:

(a) when the diesel engine is being fuelled; and

(b) when a diesel-powered vehicle has not been used for more than 10 minutes.

(2) An employer or contractor must ensure that no diesel-powered vehicle is left unattended with the engine running.

Diesel engine inspection and maintenance

343 An employer or contractor must:

(a) develop and implement a written maintenance program for diesel engines used underground that is designed to minimize exhaust emissions by keeping the diesel engines operating at peak performance;

(b) ensure that all diesel engines are inspected and maintained by a qualified person for defects and unsafe conditions as often as is necessary to ensure that:

(i) the diesel engines are in good operating condition; and

(ii) the diesel engine emissions do not exceed the emission limits set out in the maintenance program developed pursuant to clause (a); and

(c) ensure that a record of any inspection or maintenance activity carried out pursuant to clause (a) or (b) is recorded:

(i) in the case of a vehicle, in the vehicle maintenance record mentioned in section 316; and

(ii) in all other cases, in a maintenance record.

DIVISION 2
Diesel Engine Emissions

General duty - emissions

344 An employer, contractor or owner must ensure that diesel engine emissions underground are kept as low as is reasonably achievable.

Adequate airflow required

345(1) In this section:

(a) **"adequate airflow"** means:

(i) in the case of one diesel engine operating underground in a single ventilation circuit:

(A) the airflow recommended by CANMET for a particular diesel engine model; or

(B) a minimum of 3.8 cubic metres per minute for each rated kilowatt of that diesel engine; and

(ii) in the case of more than one diesel engine operating underground in a single ventilation circuit, the sum of the airflows set out in subclause (a)(i) for each engine;

(b) **"CANMET"** means the Canada Centre for Mineral and Energy Technology Branch of the Department of Natural Resources of the Government of Canada.

(2) An employer or contractor must ensure that no diesel engine is used underground that does not have adequate airflow.

(3) If the adequate airflow in any ventilation circuit underground is interrupted for any reason, an employer or contractor must ensure that the operator of each diesel engine stops operating the engine as soon as is reasonably possible in that part of the mine.

Contamination limits re diesel engine emissions

346 An employer or contractor must ensure that no diesel engine is used underground if the carbon monoxide in the undiluted exhaust emissions of a diesel engine exceeds 1 500 parts per million of air, measured before the exhaust passes through the exhaust gas scrubber required by section 347.

Exhaust gas scrubber

347(1) An employer or contractor must ensure that every diesel engine used underground is equipped with an exhaust gas scrubber.

(2) If reasonably practicable, the exhaust gas scrubber mentioned in subsection (1) must reduce carbon monoxide emissions by at least 90%.

Testing - non-particulate exhaust emissions

348(1) If diesel powered equipment operates underground, an employer or contractor shall develop and implement a written testing program that tests the following:

(a) at suitable locations representative to the exposure of workers:

(i) the airflow around the diesel powered equipment where a worker is usually present to ensure that the airflow is adequate pursuant to section 345;

(ii) the airborne exhaust emissions to ensure that the contamination limits for nitrogen dioxide, carbon dioxide and carbon monoxide do not exceed the limits set out in clauses 292(3)(a) to (c) in any place where a worker is usually present; and

(iii) the oxygen content to ensure that it meets the requirements set out in clause 292(3)(d);

(b) the undiluted exhaust emissions of each diesel engine before the exhaust gases pass through an exhaust gas scrubber to ensure that the contamination limit set out in section 346 is not exceeded.

(2) The testing program mentioned in subsection (1) must:

(a) identify the method that will be used to conduct the tests;

(b) identify the procedure to be used to determine when exhaust emissions are most likely to be the highest for the tests mentioned in clauses (1)(a) and (b) and ensure that the tests are done weekly;

(c) ensure that the test mentioned in clause (1)(b) is performed in accordance with section 343; and

(d) address the type of testing equipment to be used and how that equipment should be calibrated to ensure accuracy.

(3) An employer or contractor must:

(a) ensure that the testing equipment is appropriately and properly calibrated;

(b) ensure that a competent person is responsible for conducting the tests required by subsection (1); and

(c) ensure that the person mentioned in clause (b):

(i) records the results of any test done pursuant to subclauses (1)(a)(i) to (iii); and

(ii) records the results of any test done pursuant to clause (1)(b) in a maintenance record.

Testing - particulate exhaust emissions

349(1) If a diesel engine operates underground and there is a risk to workers from exposure to airborne diesel particulate matter, an employer or contractor must develop and implement a written testing program to test the concentration of airborne diesel particulate matter underground.

(2) The testing program mentioned in subsection (1) must:

(a) be developed in consultation with the chief mines inspector;

(b) identify the method that will be used to conduct the tests;

(c) ensure that the testing is representative of worker exposure to airborne diesel particulate matter; and

(d) address the type of testing equipment to be used and how that equipment should be calibrated to ensure accuracy.

(3) An employer or contractor must:

(a) ensure that the testing equipment is appropriate and properly calibrated;

(b) ensure that a competent person is responsible for conducting the tests required by this section;

(c) ensure that the person mentioned in clause (b) records the results of any tests done;

(d) provide the committee with a copy of the results recorded pursuant to clause (c); and

(e) submit a copy of the results recorded pursuant to clause (c) to the chief mines inspector.

PART XVII
Fire Prevention and Control

DIVISION 1
General

Interpretation of Part

350 In this Part:

(a) **"combustion products"** means products produced as a result of a fire and includes smoke, ash and gases;

(b) **"hot work"** means work that produces arcs, sparks, flames, heat or other sources of ignition.

Fire prevention and control

351 An employer or contractor must:

(a) take all reasonably practicable steps to prevent the outbreak of fire on the surface and underground;

(b) provide effective means to:

(i) control a fire; and

(ii) protect workers from any fire that may occur; and

(c) develop a written fire control and emergency response plan in accordance with section 383.

Fire hazard area

352(1) If a risk of fire exists in any area of a mine as a result of smoking or the use of any open flame equipment, match or other means of producing heat or fire, an employer or contractor must designate the area as a fire hazard area.

(2) If an area has been designated as a fire hazard area pursuant to subsection (1), an employer or contractor must ensure that legible fire hazard warning signs are posted and maintained in conspicuous locations around the perimeter of the area.

Fire prohibited underground

353(1) Subject to subsection (3), an employer or contractor must ensure that:

(a) no person smokes or uses any open flame equipment, match or other means of producing heat or fire in any area designated as a fire hazard area pursuant to section 352; and

(b) no fire is set underground.

(2) Subject to subsection (3), no worker shall:

(a) smoke or use any open flame equipment, match or other means of producing heat or fire in any area designated as a fire hazard area pursuant to section 352; or

(b) set any fire underground.

(3) This section does not apply to controlled open flame equipment that is used in accordance with section 370.

Precautions in or near building

354(1) In this section, **"non-combustible construction"** means the type of construction by which a degree of fire safety is attained through the use of non-combustible materials for structural members and other building assemblies.

(2) On and after the coming into force of these regulations, an employer, contractor or owner must ensure that no building is constructed within 15 metres of a shaft house, portal house or any closed-in portion of a headframe, unless the building:

(a) is of non-combustible construction;

(b) has a fire wall with a two-hour fire resistance rating that separates the building from the shaft house, portal house and headframe; and

(c) is not used for the storage of flammable or combustible material.

(3) If a hoist is located above a mine shaft, an employer, contractor or owner must ensure that the supporting and enclosing structure of the hoist is of non-combustible construction.

(4) If an adit is covered by a building or near a fire hazard, an employer or contractor must ensure that a suitable fire door is installed in the adit in accordance with section 358 to prevent the flow of any combustion products into the adit.

Fire-fighting equipment

355(1) An employer or contractor must ensure that there are suitable and adequate portable fire extinguishers and other suitable and adequate fire-fighting equipment:

(a) in the case of an open pit mine:

(i) on each vehicle;

(ii) on every dredge;

(iii) at every belt conveyor drive unit; and

(iv) at any location where a fire may create a hazard to a worker; and

(b) in the case of an underground mine:

(i) at each headframe or other entrance to an underground mine;

(ii) in each hoist room;

(iii) at any surface location where a fire may create a hazard to a worker;

(iv) on each vehicle and at each stationary diesel engine;

(v) at every underground crusher station, electrical installation, pump station, shaft station, belt conveyor drive unit, service garage, fuel station, explosive storage area, flammable liquid storage area and hot work area; and

(vi) at any other area that is designated as a fire hazard area pursuant to section 352.

(2) An employer or contractor must ensure that the fire-fighting equipment required pursuant to subsection (1) is:

(a) conspicuously marked; and

(b) located so that, in the event of a fire, it will be accessible.

Maintenance and inspection of fire-fighting equipment

356(1) In this section, **"equipment"** means the fire-fighting equipment required pursuant to section 355.

(2) An employer or contractor must ensure:

(a) that a competent person:

(i) maintains the equipment;

(ii) conducts monthly inspections of the equipment; and

(iii) prepares a written report containing the details of each monthly inspection conducted pursuant to subclause (ii); and

(b) that the inspection report mentioned in subclause (a)(iii) is:

(i) recorded by the competent person mentioned in clause (a) and countersigned by the employer or contractor; and

(ii) located at the place of employment and made readily available to workers.

Fire suppression system

357(1) A fire suppression system required pursuant to this section must:

(a) include a sprinkler system, a dry chemical system, or any other system capable of suppressing the expected type and size of fire;

(b) be equipped with:

(i) a hose or pipe to distribute water, dry chemical or any other fire suppressing substance that is secured and protected against damage, abrasion and corrosion;

(ii) discharge nozzle blow-off caps or any other device capable of preventing moisture, dirt or other material from entering the hose or pipe; and

(iii) a manual activation device that is capable of being activated from each side of the equipment and from the operator's position; and

(c) in the case of the fixed equipment mentioned in clause (3)(a) that operates unattended and vehicles mentioned in clause (3)(b) that operate by remote control, be equipped with:

(i) an automatic activation device; and

(ii) an automatic engine shut-down system.

(2) An employer, contractor or supplier must ensure that, if reasonably practicable, any vehicle purchased on or after the coming into force of these regulations that is used underground and that contains more than 250 litres of diesel fuel, grease or oil is equipped with:

(a) a fire suppression system that meets the requirements of subsection (1); and

(b) if reasonably practicable:

(i) an automatic engine shut-down system; and

(ii) an automatic hydraulic pressure relief system.

(3) On and after July 1, 2004, an employer or contractor must provide a fire suppression system that meets the requirements of subsection (1):

(a) if reasonably practicable, on each piece of fixed equipment underground that contains more than 175 litres of diesel fuel, grease or oil other than:

(i) a belt conveyor using a belt to which subsection 337(1) applies; and

(ii) a feeder;

(b) on each vehicle underground that is operated by remote control; and

(c) in every high fire-risk area in a building or structure, excluding fan houses and the area over a hoist motor, that is located:

(i) on the surface of an underground mine; and

(ii) above or adjacent to an opening to an underground mine.

(4) An employer or contractor of an open pit mine must ensure that each haul truck, hydraulic power shovel or loader that has an engine producing 190 kilowatts or more and that is purchased on or after the coming into force of these regulations is equipped with:

(a) a fire suppression system that meets the requirements of subsection (1); and

(b) if reasonably practicable:

(i) an automatic engine shut-down system; and

(ii) an automatic hydraulic pressure relief system.

Fire door

358(1) In this section, **"fire door"** includes the frame surrounding the door.

(2) If reasonably practicable, an employer or contractor must ensure that a sufficient number of fire doors are installed underground:

(a) to close off fuel stations;

(b) to close off service garages constructed on or after the day on which these regulations come into force;

(c) to isolate one shaft from another; and

(d) in the case of multi-level mines, to isolate the workings from the shaft.

(3) An employer or contractor must ensure that a fire door required pursuant to subsection (2) is:

(a) constructed of steel or of a material that has a two-hour fire resistance rating;

(b) constructed and maintained to reduce leakage of air to a minimum;

(c) equipped with:

(i) if reasonably practicable, a seal that has at least a two-hour fire resistance rating; and

(ii) an emergency exit for workers if the fire door cannot be easily opened by a worker;

(d) capable of being opened from both sides;

(e) installed so that the door will not open inadvertently if the airflow in the mine is reversed; and

(f) kept clear of all obstructions.

Fire-proof structures required underground

359 Except in the case of portable mine refuge units, an employer or contractor must ensure that every underground building or enclosure constructed on or after the date on which these regulations come into force is:

(a) constructed of material with at least a one-hour fire resistance rating; and

(b) located and maintained to reduce any fire hazard to a minimum.

DIVISION 2
Location, Storage and Transportation of Ignitable Substances

Fuel station

360(1) An employer or contractor must designate every fuel station underground as a fire hazard area.

(2) If a fuel station is required pursuant to subsection 366(2), an employer or contractor must ensure that the fuel station is:

(a) located:

(i) in an area that has adequate ground support for a permanent installation;

(ii) with regard to the ventilation system so that a minimum number of workers would be affected by smoke and gases from a fire in the fuel station; and

(iii) separate from a service garage;

(b) designed and located to prevent the inadvertent entry of an uncontrolled vehicle;

(c) if vehicles are to be fuelled inside the fuel station, equipped with a self-closing door to seal off the fuel station that meets the requirements of subsection 358(2);

(d) equipped with fire-fighting equipment and a fire suppression system that:

(i) can be activated from:

(A) several locations inside the fuel station; or

(B) each entrance to the fuel station;

(ii) is equipped with an alarm that sounds at a surface location that is staffed at all times during working hours; and

(iii) if discharge of the fire suppression system will put a worker who is in the fuel station at risk, is equipped with an alarm that sounds inside the fuel station at least 10 seconds before the discharge from the fire suppression system;

(e) equipped with a ventilation system that is:

(i) capable of keeping airborne contaminants at or below the levels set out in section 292; and

(ii) interlocked with the fire suppression system to stop ventilation in the event of fire;

(f) equipped with a bright light above every emergency exit; and

(g) equipped with a fuel container that is equipped with an approved hose and an approved nozzle with a fill valve that automatically shuts off when:

(i) released by the operator; and

(ii) the tank is full.

(3) An employer or contractor must ensure that no fuel station is used as a travelway or for the storage of any materials other than diesel fuel, grease or oil.

(4) A fuel station constructed on or after the coming into force of these regulations must be:

(a) totally enclosed;

(b) designed to prohibit the fuelling of any vehicle not fully contained in the fuel station; and

(c) equipped with a lined containment area that is capable of holding a spill of 110% of the capacity of the largest storage tank in the fuel station.

Inspection and maintenance of fuel station

361 An employer or contractor must:

(a) ensure that every fuel station is maintained in a condition of efficient and safe functioning by a system of regular examination, testing, servicing and repair;

(b) ensure that a competent person is responsible for inspecting each underground fuel station weekly; and

(c) ensure that the results of each inspection conducted pursuant to clause (b) are recorded.

Location of steam boilers and diesel engines

362(1) An employer, contractor or owner must ensure that a steam boiler or diesel engine installed on or after the coming into force of these regulations is installed more than 30 metres from the centre line of the collar of any shaft or any other entrance to a mine.

(2) An employer, contractor or owner must ensure that a steam boiler or diesel engine installed before the coming into force of these regulations is located at least 22 metres from the centre line of the collar of any shaft or any other entrance to the mine.

Internal combustion engine

363(1) An employer or contractor must ensure that no internal combustion engine that uses gasoline or any other highly volatile liquid or flammable gas is installed, serviced or stored:

(a) underground;

(b) within 15 metres of the building housing the hoist; or

(c) within 30 metres of the centre line of the collar of any shaft or any other entrance to a mine.

(2) If an internal combustion engine that uses gasoline or any other highly volatile liquid or flammable gas is installed in a building at any mine, an employer, contractor or owner must ensure that:

(a) the engine exhaust gases are exhausted clear of the building; and

(b) if reasonably practicable, exhaust gases are prevented from re-entering the building or entering the intake of any air compressor or contaminating the atmosphere of any adjacent buildings or the workings.

Storage of liquid fuel

364(1) With the exception of fuel in the tanks of operating equipment, an employer or contractor must ensure that no liquid or gaseous fuel is stored within 30 metres of the centre line of the collar of any shaft or any other entrance to a mine.

(2) An employer, contractor or owner must ensure that the natural drainage from a fuel storage area is away from the collar of any shaft or any other entrance to a mine.

Storage of ignitable substances - general

365(1) In this section and in section 366, **"ignitable substance"** means combustible liquids, flammable liquids, diesel fuel, grease, oil and hydraulic fluids.

(2) An employer or contractor must ensure that the quantity of ignitable substances stored in a headframe, shaft house or portal house is minimized in accordance with the storage program mentioned in subsection (3).

(3) An employer or contractor must develop and implement a written program to address the storage of ignitable substances in the headframe.

(4) The storage program mentioned in subsection (3) must:

(a) describe the type and amount of ignitable substances permitted to be stored in a headframe, shaft house or portal house; and

(b) describe the conditions under which the ignitable substances will be stored.

Storage of ignitable substances - underground

366(1) If an ignitable substance is stored underground, an employer or contractor must ensure that:

(a) the ignitable substance is stored in an approved container; and

(b) the approved container is:

(i) conspicuously and clearly labelled; and

(ii) located, guarded and handled to protect it from damage.

(2) Subject to subsection (6), if the quantity of ignitable substances to be stored underground exceeds 1 000 litres, an employer or contractor must ensure that the ignitable substances are stored at a fuel station that meets the requirements set out in section 360.

(3) Subject to subsection (6), an employer or contractor must obtain a permit from the chief mines inspector if the quantity of ignitable substances to be stored underground exceeds the amount required for 24 hours of operation.

(4) For the purposes of subsection (3), an employer or contractor must ensure that:

(a) any permit obtained is conspicuously posted in the storage area; and

(b) the maximum quantity of ignitable substances stored underground does not exceed the amount authorized by the permit.

(5) An employer or contractor must take adequate precautions to ensure that:

(a) any spillage underground of ignitable substances is reduced to a minimum;

(b) any spillage underground of ignitable substances is contained in a safe manner; and

(c) any spillage underground of ignitable substances that may be hazardous is absorbed by non-flammable material that is then removed from the mine in a fire-proof receptacle within 24 hours after the spill.

(6) Nothing in this section prohibits an employer or contractor from storing supplies of oil and grease underground in a shop for the maintenance of vehicles and equipment.

Transfer of liquid fuel - surface

367(1) If an internal combustion engine fuel tank that uses gasoline or any other highly volatile liquid or flammable gas is installed in a building located on the surface, and if liquid fuel is transferred into that fuel tank, an employer or contractor must ensure that:

(a) the transfer of fuel occurs from outside of the building;

(b) the fuel is transferred in a tightly jointed pipe;

(c) any air displaced from the fuel tank during the fuelling process is exhausted clear of the building; and

(d) the fuel tank is equipped with a reliable means of preventing the tank from being overfilled.

(2) An employer or contractor must ensure that liquid fuel is not transferred from one container to another by the direct application of air under pressure.

Transportation and transfer of liquid fuel - underground

368(1) If diesel fuel is transported underground in a mobile container, an employer or contractor must ensure that:

(a) the container is conspicuously and clearly labelled "Diesel Fuel"; and

(b) the container, if purchased on or after the coming into force of these regulations:

(i) is an approved container or is constructed in accordance with a design prepared by a professional engineer; and

(ii) is equipped with vents that are designed to be spill-proof or that are kept closed at all times while the container is being transported.

(2) An employer or contractor must ensure that diesel fuel is not transferred from one container to another by the direct application of air under pressure.

(3) An employer or contractor must ensure that diesel fuel is not transferred from the surface to underground through a piping system unless the piping system is approved.

Fuelling of vehicles underground

369(1) Subject to subsection (2), an employer or contractor must ensure that vehicles underground are fuelled at a fuel station that meets the requirements set out in section 360.

(2) If it is not reasonably practicable to fuel a vehicle at a fuel station that meets the requirements set out in section 360, an employer or contractor may permit a vehicle to be fuelled underground by a fuel truck in accordance with subsection (3).

(3) An employer or contractor must ensure that a fuel truck that is used to fuel other vehicles underground in accordance with subsection (2) is:

(a) equipped with:

(i) a fuel container that is:

(A) approved or constructed in accordance with a design prepared by a professional engineer; and

(B) equipped with an approved hose and an approved nozzle with a fill valve that automatically shuts off when:

(I) released by the operator; and

(II) the tank is full;

(ii) a relay that is installed to isolate the battery from the circuit when the ignition is turned off; and

(iii) an automatic fire suppression system that is:

(A) designed, installed and maintained to provide suitable and adequate fire protection; and

(B) equipped with a manual activation device that is capable of being activated from each side of the fuel truck and the fuel truck operator's position;

(b) not used to transport more than 1 200 litres of fuel, unless otherwise approved;

(c) if reasonably practicable, not left running while being used to fuel other vehicles;

(d) if reasonably practicable, only used to fuel other vehicles when the fuel truck is located in an exhaust airway; and

(e) when not in use, kept in an area designated by the employer or contractor.

DIVISION 3
Hot Work

Hot work and use of compressed gas

370(1) In this section, **"hot work equipment"** means equipment that produces arcs, sparks, flames, heat or other sources of ignition, and includes welding equipment, cutting equipment and brazing equipment.

(2) An employer or contractor must ensure that:

(a) all acetylene and liquified gas containers are used and stored in an upright position; and

(b) all compressed gas cylinders are stored in a safe place and are suitably and adequately secured.

(3) If cylinders of compressed gas are being transported underground, an employer or contractor must ensure that:

(a) the cylinder valves are protected from damage; and

(b) all fittings, including regulators and manifolds, are disconnected from the cylinders, unless:

(i) the cylinders are secured in an upright position; and

(ii) the fittings are protected by a suitable and adequate cage or safeguard.

(4) An employer or contractor must ensure that no device or equipment that produces gas, other than a cylinder of compressed gas, is used to fuel hot work equipment underground.

(5) Subject to subsection 363(1) of the OHS regulations, if hot work is performed an employer or contractor must ensure that:

(a) outside a designated shop or garage:

(i) if reasonably practicable, all combustible material within a three-metre radius of the hot work or on which sparks or hot material may fall is thoroughly wetted with water before the hot work begins and after it is finished; and

(ii) the area is regularly checked for two hours after the completion of the hot work;

(b) adequate fire-fighting equipment is readily available at all times while the hot work is being done and during the fire watch mentioned in clause (a);

(c) hot work is not conducted within eight metres of any place where explosives are being stored or transported; and

(d) any area in which hot work takes place is suitably and adequately ventilated.

(6) If a cylinder of compressed gas is operated from a location underground or in a conveyance that is not readily accessible to the worker who is operating the hot work equipment, an employer or contractor must ensure that:

(a) another competent worker is present at all times and ready to operate the cylinder control devices; and

(b) there is a suitable and adequate means of communication between the worker operating the hot work equipment and the worker operating the cylinder control device.

(7) If a cylinder of compressed gas is used to supply hot work equipment, an employer or contractor must ensure that the cylinder is located, guarded and handled during use so that the cylinder and its fittings are protected from damage.

DIVISION 4
Disposal

Refuse disposal

371(1) An employer or contractor must ensure that combustible refuse:

(a) does not accumulate:

(i) in a headframe, hoist room, portal house or any other building on the surface; or

(ii) in a hoist room or shaft station underground;

(b) is not disposed of or permitted to decay underground; and

(c) if it accumulates underground, is removed to the surface at least once a week.

(2) An employer or contractor must ensure that:

(a) suitable covered metal containers are:

(i) provided for the temporary disposal of combustible refuse;

(ii) placed at suitable locations, including:

(A) at shaft stations, shops, and lunch rooms; and

(B) at enclosures housing machinery, equipment or stores; and

(iii) emptied regularly; and

(b) the contents of the metal containers mentioned in clause (a) are disposed of in a safe and suitable manner.

Timber disposal re underground mine

372 An employer or contractor must ensure that:

(a) all timber, lumber and pallets underground:

(i) are stored:

(A) in a safe manner; and

(B) in an area designated by the employer or contractor; and

(ii) if they are not in use and are not intended for use in current operations, are promptly removed to the surface;

(b) all scrap wood and wood refuse is removed to the surface within one week of its accumulation; and

(c) if there is a risk of fire in the storage area designated pursuant to paragraph (a)(i)(B), the storage area is designated as a fire hazard area pursuant to section 352.

PART XVIII
Control of Underground Water

Interpretation of Part

373 In this Part:

(a) **"bulkhead"** means a structure that is:

(i) built for the purpose of impounding water, compressed air, hydraulic backfill or any other material in an underground opening where the potential pressure against the structure will be in excess of 100 kilopascals; and

(ii) constructed to completely close off the underground opening mentioned in subclause (i);

(b) **"dam"** means a structure that is:

(i) built for the purpose of impounding 25 cubic metres or more of water or slimes in an underground opening; and

(ii) constructed to permit an unobstructed overflow of water or slimes;

(c) **"slimes"** means a mixture of fine sediment and water.

Dam construction underground

374(1) Subject to section 377, at least 14 days before commencing construction on a dam, an employer or contractor must submit the following to the chief mines inspector for approval:

(a) a plan of the dam designed by a professional engineer;

(b) the structural designs and specifications for the dam;

(c) the design calculations for the dam;

(d) detailed drawings of the dam.

(2) An employer or contractor must ensure that every dam is maintained to safely withstand any load expected to be placed on it.

(3) An employer or contractor must ensure that any dam that is constructed on or after the day on which these regulations come into force is:

(a) designed by a professional engineer;

(b) designed and constructed to safely withstand any load expected to be placed on it; and

(c) constructed:

(i) in accordance with the approved plan mentioned in subsection (1);

(ii) under the direction of a professional engineer; and

(iii) to permit an unobstructed overflow of slimes or water.

Bulkhead construction underground

375(1) Subject to section 377, at least 14 days before commencing construction on a bulkhead, an employer or contractor must submit the following to the chief mines inspector for approval:

(a) a plan of the bulkhead designed by a professional engineer;

(b) the structural designs and specifications for the bulkhead;

(c) the design calculations for the bulkhead;

(d) detailed drawings of the bulkhead.

(2) An employer or contractor must ensure that every bulkhead is maintained to safely withstand any load expected to be placed on it.

(3) An employer or contractor must ensure that any bulkhead that is constructed on or after the day on which these regulations come into force is:

(a) designed by a professional engineer;

(b) designed and constructed to safely withstand any load expected to be placed on it; and

(c) constructed:

(i) in accordance with the approved plan mentioned in subsection (1);

(ii) under the direction of a professional engineer; and

(iii) to completely close off a mine opening.

Dams and bulkheads to be shown on plan

376 An employer or contractor must ensure that every dam and bulkhead is clearly and accurately shown on the plan required pursuant to section 7.

Emergency dam or bulkhead construction underground

377(1) Notwithstanding sections 374 and 375, an employer or contractor may construct a dam or bulkhead without obtaining the approval of the chief mines inspector if an emergency situation arises that may jeopardize the health or safety of a worker or the safety of the mine if the dam or bulkhead is not constructed.

(2) If an emergency dam or bulkhead is constructed pursuant to subsection (1), the employer or contractor must:

(a) notify the chief mines inspector of the construction as soon as is practicable after construction commences; and

(b) submit to the chief mines inspector for approval:

(i) a plan for the dam or bulkhead designed by a professional engineer;

(ii) the structural designs and specifications for the dam or bulkhead;

(iii) the design calculations for the dam or bulkhead; and

(iv) detailed drawings of the dam or bulkhead.

Underground water drainage

378(1) An employer or contractor must ensure that an underground mine is kept free from water, the accumulation of which might endanger the lives of any worker in the mine or in any adjoining mine, by ensuring that a drainage system is developed and installed to conduct excess water to a pumping system.

(2) The pumping system mentioned in subsection (1) must be capable of pumping the water to the surface for disposal.

Placement of backfill, water or slimes

379 An employer or contractor must ensure that any backfill, water or slimes placed in an underground structure are placed in a manner that will not endanger:

(a) any workers; or

(b) the structural integrity of the mine.

PART XIX
Emergency Response and Mine Rescue re Underground at a Mine

Interpretation of Part

380 In this Part:

(a) **"mine rescue certificate"** means a mine rescue certificate issued pursuant to section 392;

(b) **"mine rescue instructor"** means a person who is the holder of a mine rescue instructor certificate;

(c) **"mine rescue instructor certificate"** means a mine rescue instructor certificate issued pursuant to section 392;

(d) **"mine rescue worker"** means a person who is the holder of a mine rescue certificate;

(e) **"self-rescue apparatus"** means a small respiratory protective device that provides the worker with a limited amount of time to escape a hazardous atmosphere.

Application of Part - underground mines

381 This Part only applies to underground mines.

General duty re competency of mine rescue workers

382 An employer or contractor must ensure that all mine rescue workers are competent to carry out their duties pursuant to these regulations.

Fire control and emergency response plan

383(1) In this section, **"equipment"** includes personal protective equipment.

(2) An employer, contractor or owner must:

(a) take all reasonably practicable steps to prevent the outbreak of fire underground and to provide effective means to protect workers from any fire that may occur; and

(b) develop and implement a written fire control and emergency response plan that:

(i) provides for the safety of all workers in the event of a fire or other emergency underground; and

(ii) establishes procedures for workers to follow in the event of a fire or other emergency underground.

(3) A plan developed pursuant to subsection (2) must address the following:

(a) the types of emergencies that may reasonably occur;

(b) the minimum number of mine rescue workers that must respond to each incident identified in clause (a), including:

(i) the qualifications and responsibilities of those mine rescue workers; and

(ii) the type of equipment that must be provided to those mine rescue workers;

(c) the procedure to be used to summon the mine rescue team for duty;

(d) the emergency procedures to be used in case of fire or other emergency, including:

(i) a personal accountability system;

(ii) if applicable, the use of an emergency hoist;

(iii) a procedure to be used if the second egress is unavailable;

(iv) evacuating endangered workers to the surface or to a refuge station; and

(v) the safe recovery of the mine;

(e) the use of self-rescue apparatus;

(f) an emergency warning system;

(g) the design and location of all refuge stations;

(h) the training of supervisors and workers:

(i) in the procedures developed pursuant to the plan; and

(ii) in the use of equipment necessary to implement the procedures developed pursuant to the plan.

(4) An employer or contractor must ensure that:

(a) designated mine rescue workers are adequately trained in their duties under the fire control and emergency response plan; and

(b) the fire control and emergency response plan is posted in a conspicuous place on the surface and underground.

Emergency warning system

384(1) An employer or contractor must ensure that an underground mine is equipped with an effective emergency warning system that:

(a) warns workers of an emergency underground; and

(b) meets the requirements of this section.

(2) An emergency warning system used for the purposes mentioned in subsection (1) must:

(a) be fully operational at all times;

(b) be maintained by a competent person; and

(c) be equipped with a primary and back-up means of activation.

(3) Before installing or significantly modifying any emergency warning system required pursuant to subsection (1), an employer or contractor must submit the details of the emergency warning system, or any modification to it, to the chief mines inspector.

(4) An employer or contractor must ensure that, if reasonably practicable, high risk areas underground are monitored with a heat sensing device that is linked to:

(a) an alarm; and

(b) if reasonably practicable, a fire suppression system.

Testing of emergency warning system and plan

385(1) An employer or contractor must ensure that:

(a) at least once during each calendar year, the fire control and emergency response plan is tested by a drill that is initiated by the emergency warning system; and

(b) at least once during every two calendar years, every shift of workers participates in a test of the fire control and emergency response plan by a drill that is initiated by:

(i) the emergency warning system required by section 384; or

(ii) any other effective means.

(2) The person who conducts the tests pursuant to clause (1)(a) must submit a report to the chief mines inspector that:

(a) describes the simulated conditions used in the test;

(b) evaluates the effectiveness of the fire control and emergency response plan or emergency warning system, as the case may be; and

(c) details the functioning of the emergency warning system.

(3) An employer or contractor must ensure that any report prepared pursuant to subsection (2) is posted in a conspicuous location on the surface.

Requirements for emergency voice communication system

386(1) Except during shaft-sinking operations, an employer or contractor must ensure that an effective emergency voice communication system is installed and maintained.

(2) The voice communication system must permit voice communication between:

(a) a location on the surface that will be attended by a worker when any worker is underground;

(b) the collar;

(c) the landing stations in use in the shaft;

(d) each hoist room; and

(e) each underground refuge station.

Mine rescue station

387(1) An employer or contractor must install, equip, operate and maintain a mine rescue station in accordance with this section at every underground mine.

(2) An employer or contractor must ensure that a certified mine rescue instructor supervises the maintenance of every mine rescue station and the equipment in the station.

(3) An employer or contractor must ensure that every mine rescue station is:

(a) located on the surface within a reasonable distance from a mine opening through which an emergency response operation could be staged; and

(b) installed in a location where it will not be contaminated by the air exhausted from the workings.

(4) An employer or contractor must ensure that every mine rescue station is equipped with the following:

(a) effective means of communication to the underground portions of the mine mentioned in subsection 386(2);

(b) effective portable lights;

(c) adequate first aid equipment and supplies;

(d) gas detection equipment;

(e) basic rescue equipment, including an axe, sledge-hammer, claw hammer, pick, shovel, saw and scaling bars;

(f) an adequate number of approved respiratory protective devices that have a minimum capacity of four hours;

(g) if required for the respiratory protective devices, suitable and adequate testing equipment;

(h) adequate repair parts for the respiratory protective devices;

(i) for the respiratory protective devices:

(i) an adequate number of replacement cylinders of oxygen; and

(ii) an adequate amount of carbon dioxide absorbent;

(j) emergency lighting;

(k) a smoke or fire detector that sounds an alarm at a central surface location.

Mine rescue training

388(1) An employer or contractor must appoint a certified mine rescue instructor.

(2) The certified mine rescue instructor appointed pursuant to subsection (1) shall supervise the training of mine rescue workers.

Qualifications of mine rescue worker

389(1) No person shall act as a mine rescue worker, and no employer or contractor shall require or permit a person to act as a mine rescue worker, unless:

(a) the person is competent to act as a mine rescue worker;

(b) the person holds:

(i) a valid mine rescue worker certificate issued pursuant to section 392; and

(ii) a valid class A qualification in first aid that meets the requirements of Part V of the OHS regulations;

(c) the person has, within the previous 12-month period, passed a comprehensive medical examination and has been certified by a duly qualified medical practitioner to be free of any medical condition that would prohibit the worker from using a respiratory protective device under arduous work conditions;

(d) the person has received approved training; and

(e) the person is designated by the person's employer or contractor to act as a mine rescue worker.

(2) An employer or contractor must ensure that accurate training records are kept for each mine rescue worker.

Qualifications of mine rescue instructor

390(1) No person shall act as a mine rescue instructor, and no employer or contractor shall require or permit a person to act as a mine rescue instructor, unless:

(a) the person is competent to act as a mine rescue instructor;

(b) the person holds:

(i) a valid mine rescue instructor certificate issued pursuant to section 392; and

(ii) a valid class A qualification in first aid that meets the requirements of Part V of the OHS regulations;

(c) the person has approved training and experience; and

(d) the person is designated by the person's employer or contractor to act as a mine rescue instructor.

(2) An employer or contractor must ensure that accurate training records are kept for each mine rescue instructor.

Mine rescue examination

391(1) A person is eligible to take the mine rescue worker examination if the employer or contractor of that person provides a written notice to the chief mines inspector stating that the person meets the qualifications set out in subclause 389(1)(b)(ii) and clauses 389(1)(c) and (d).

(2) A person is eligible to take the mine rescue instructor examination if the employer or contractor of that person provides a written notice to the chief mines inspector stating that the person meets the qualifications set out in subclause 390(1)(b)(ii) and clause 390(1)(c).

(3) The chief mines inspector may set a mine rescue worker examination and mine rescue instructor examination to test the knowledge, with respect to the following subjects, of persons who wish to obtain a mine rescue worker certificate or mine rescue instructor certificate, as the case may be:

(a) purpose and objective of a mine rescue;

(b) airborne contamination and mine ventilation;

(c) methods and instruments used to detect dangerous levels of airborne contamination;

(d) safety precautions and equipment;

(e) the responsibilities of a mine rescue worker;

(f) emergency procedures;

(g) the use of respiratory protective devices;

(h) fighting fire underground.

(4) The chief mines inspector may permit a person who fails the mine rescue worker examination or the mine rescue instructor examination to make another attempt after a period of not less than 30 days after the date of the previous attempt.

Mine rescue certificates

392 The chief mines inspector may issue:

(a) a mine rescue worker certificate to a person who passes the mine rescue worker examination; and

(b) a mine rescue instructor certificate to a person who:

(i) passes the mine rescue instructor examination; and

(ii) in the opinion of the chief mines inspector, demonstrates competence in mine rescue and mine rescue training.

Maintenance of qualification

393(1) An employer or contractor must ensure that no person continues to be designated as a mine rescue worker pursuant to clause 389(1)(e) unless that person:

(a) meets the requirements set out in clauses 389(1)(a) to (d); and

(b) participates in a minimum of 40 hours of mine rescue training in each calendar year.

(2) An employer or contractor must ensure that no person continues to be designated as a mine rescue instructor pursuant to clause 390(1)(d) unless that person:

(a) meets the requirements set out in clauses 390(1)(a) to (c); and

(b) participates in the delivery of a minimum of 40 hours of mine rescue training in each calendar year.

Mine rescue coordinator

394(1) An employer or contractor must appoint a person as a mine rescue coordinator who is competent with respect to:

(a) mine rescue principles; and

(b) the fire control and emergency response plan for that mine.

(2) A mine rescue coordinator appointed pursuant to subsection (1) must supervise mine rescue workers in all emergency response operations at that mine.

Minimum number of mine rescue workers required

395 An employer or contractor must ensure that, if reasonably practicable:

(a) at least 15 workers at every underground mine are mine rescue workers;

(b) at least one mine rescue worker works underground on each shift; and

(c) at least 10 mine rescue workers do not work underground on the same shift.

Mine rescue teams

396(1) Subject to subsection (2), if an emergency response operation requires the use of self-contained breathing apparatus, an employer or contractor must ensure that a mine rescue team of at least five mine rescue workers responds to the emergency incident.

(2) The chief mines inspector may permit a mine rescue team consisting of fewer than five mine rescue workers to respond to an emergency response operation requiring the use of self-contained breathing apparatus.

(3) For each mine rescue team mentioned in subsections (1) and (2), an employer or contractor must appoint one member of the mine rescue team as a team captain.

(4) During an emergency response operation, a team captain mentioned in subsection (3):

(a) has direct control of the activities of the mine rescue team;

(b) is responsible for the safety of the mine rescue team; and

(c) shall not take part in any activity at the mine that is not directly related to the safety of the mine rescue team.

Medical monitoring of certified mine rescue workers

397 If an emergency response operation is 12 hours or longer, an employer or contractor must ensure that the health of every mine rescue worker is monitored by one of the following persons:

(a) a duly qualified medical practitioner;

(b) a nurse working under the direction of a duly qualified medical practitioner;

(c) an emergency medical technician working under the direction of a duly qualified medical practitioner.

Primary refuge station

398(1) An employer or contractor must install, equip and maintain a primary refuge station underground.

(2) An employer or contractor must ensure that each primary refuge station is:

(a) excavated in solid host material or constructed of steel;

(b) separated from adjoining workings by fire doors or stoppings that are:

(i) designed to prevent noxious fumes from entering the refuge station; and

(ii) if reasonably practicable, constructed of materials that have at least a one-hour fire resistance rating;

(c) located:

(i) if reasonably practicable, in a fresh air circuit;

(ii) at least 100 metres away from any fuel station, explosive storage area or other fire hazard; and

(iii) as accurately as possible on a map of the surface;

(d) designed to accommodate the number of workers who may reasonably be expected to use the refuge station;

(e) clearly marked;

(f) readily accessible; and

(g) properly maintained and the area around the entrance is kept free of combustible material.

(3) An employer, contractor or owner must ensure that every primary underground refuge station is equipped with the following:

(a) at least 36 hours of breathable air for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;

(b) potable water for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;

(c) food;

(d) lights;

(e) first aid supplies;

(f) sanitation facilities;

(g) suitable fire-fighting equipment;

(h) an effective means of communication with the surface;

(i) sufficient seating.

Auxiliary refuge stations

399(1) An employer or contractor must install, equip and maintain auxiliary refuge stations within a reasonable distance of all locations where workers are expected to take refuge in the event of an emergency incident.

(2) An employer or contractor must ensure that each auxiliary refuge station is constructed appropriately and adequately.

(3) An employer or contractor must ensure that every auxiliary refuge station is equipped with the following:

(a) at least 36 hours of breathable air for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;

(b) potable water for the number of workers who may reasonably be expected to use the refuge station in accordance with the fire control and emergency response plan;

(c) an effective means of communication with the surface;

(d) suitable and appropriate material to maintain the seal around the door of the refuge station.

Additional refuge station

400 An employer or contractor must locate, install, equip and maintain refuge stations, in addition to the refuge stations mentioned in sections 398 and 399, as directed by the chief mines inspector.

Inspection of refuge stations

401 An employer or contractor must:

(a) ensure that every refuge station, and the equipment in the refuge station, is thoroughly inspected by a competent person at least once a month; and

(b) ensure that the results of each inspection conducted pursuant to clause (a) are recorded by the competent person mentioned in clause (a) and countersigned by the employer or contractor.

Use of compressed air in refuge station

402 If a refuge station mentioned in section 398, 399 or 400 uses compressed air cylinders, the employer or contractor must ensure that the compressed air cylinders are equipped with regulators that provide for the optimum flow of air in the refuge station, taking into account the size of the refuge station and the number of workers who may use it.

Respiratory protective device for hoist operators

403 If the fire control and emergency response plan prepared pursuant to section 383 requires a hoist operator to remain in the hoist room during an emergency and the air supply of a hoist room may become contaminated, an employer or contractor must ensure that:

(a) suitable respiratory protective devices are provided for each hoist operator; and

(b) the respiratory protective devices mentioned in clause (a):

(i) provide at least four hours of breathable air; and

(ii) are properly maintained.

Self-rescue apparatus

404(1) If the chief mines inspector requires self-rescue apparatuses to be provided underground, or if the self-rescue apparatuses are otherwise provided by an employer or contractor, the employer or contractor must ensure that:

(a) all workers carry a self-rescue apparatus at all times while working underground; or

(b) a sufficient number of self-rescue apparatuses are stored at suitable locations underground.

(2) If self-rescue apparatuses are provided in accordance with subsection (1), an employer or contractor must ensure that a worker who may be required to use a self-rescue apparatus is adequately trained by a competent person in the proper use of the self-rescue apparatus and in its limitations.

PART XX
Abandoning Workings

Notice of intended closing or abandonment

405(1) An employer, contractor or owner must give written notice to the chief mines inspector of an intended closing or abandonment of a mine or a major part of a mine.

(2) The notice mentioned in subsection (1) must:

(a) be given as soon as is reasonably practicable, but not later than 60 days before beginning the process of closing or abandoning a mine or a major part of a mine;

(b) include a description of the methods by which:

(i) all explosives, fuses and detonators will be disposed of;

(ii) the shaft compartments will be abandoned and hoisting ropes disposed of;

(iii) the shafts and entrances from the surface will be secured;

(iv) the pits and other openings on the surface will be fenced or otherwise secured; and

(v) the safety of the mine site will be secured; and

(c) be accompanied by the plans mentioned in section 406.

Submission of plans

406 Before a mine or any part of a mine is closed, abandoned or otherwise rendered inaccessible, the employer, contractor or owner must ensure that:

(a) all plans required pursuant to subsection 7(2) are updated; and

(b) copies of the plans mentioned in clause (a) are:

(i) certified as correct by the employer, contractor or owner; and

(ii) forwarded to the chief mines inspector.

Openings to underground mines

407(1) If a shaft, raise, adit or other opening to the surface is abandoned or if the workings are discontinued, the employer, contractor or owner must ensure that the shaft, raise, adit or other opening is secured against unauthorized entry in accordance with this section.

(2) A shaft, raise, adit or other opening must be secured by covering the top of it with a bulkhead designed by a professional engineer of reinforced concrete at bedrock or at the top of the concrete collar of the shaft, raise, adit or opening.

(3) An employer, contractor or owner must ensure that the cover required pursuant to subsection (2) is clearly marked with a substantial one-metre high marker or sign that identifies the party responsible for the opening and the cover.

Open pit mines

408 If an open pit mine is closed permanently or for an indefinite period, the employer, contractor or owner must:

(a) secure the open pit mine to prevent unauthorized entry and post warning signs; or

(b) perform remedial work so that the workings present no greater hazard than the natural topographic features of the district.

Securing hazardous plants

409 If a mine or any part of a mine is to be closed or abandoned and the plant associated with the mine presents a hazard, the employer, contractor or owner must secure the plant to protect against unauthorized or inadvertent entry.

Disposing of explosives

410 If a mine is to be closed or abandoned, the employer, contractor or owner must:

(a) ensure that all explosives, detonators and detonating cord are disposed of in a safe manner in accordance with the manufacturer's instructions; and

(b) at least 14 days before disposal, notify the chief mines inspector in writing of the disposal procedure to be used for the purposes of clause (a).

PART XXI
Repeal and Coming into Force

Transitional

411(1) In this section:

(a) **"existing approval"** means an approval issued pursuant to the former regulations that is in existence on the day before the coming into force of these regulations;

(b) **"existing certificate"** means a certificate issued pursuant to the former regulations that is in existence on the day before the coming into force of these regulations;

(c) **"existing permit"** means a permit issued pursuant to the former regulations that is in existence on the day before the coming into force of these regulations.

(2) Every existing certificate, existing approval and existing permit is continued pursuant to these regulations and may be dealt with pursuant to these regulations as if it were issued pursuant to these regulations.

(3) Unless sooner revoked or cancelled pursuant to these regulations, every existing certificate issued to a supervisor, hoist operator or blaster expires three years from the day that these regulations come into force notwithstanding any term, condition or provision to the contrary in:

(a) the existing certificate;

(b) the former regulations; or

(c) these regulations.

(4) The chief mines inspector may at any time revoke or suspend an existing certificate, existing approval or existing permit continued pursuant to subsection (2) if:

(a) the holder fails to comply with any term or condition of the certificate, approval or permit; or

(b) in the opinion of the chief mines inspector, it is appropriate to do so in the circumstances.

Sask. Reg. 284/78 repealed

412 "The Mines Regulations", being Saskatchewan Regulations 284/78, are repealed.

Coming into force

413 These regulations come into force on the sixty-first day after the day on which they are published in *The Saskatchewan Gazette*.

Appendix

PART I

Table 1

[*Sections 208 and 211*]

Hoisting Signals

Signal	Purpose	Status	Conditions
One bell	Stop immediately if in motion	Executive signal	To be given by the worker in charge of the conveyance to stop the conveyance
One bell	Raise	Executive signal	To be given by the worker in charge of the conveyance after the directory signal is given. This is used only when the conveyance is to move upward.
Two bells	Lower	Executive signal	To be given by the worker in charge of the conveyance after the directory signal is given. This is used only when the conveyance is to move downward.
Three bells	Persons about to ascend or descend	Cautionary signal	The worker in charge of the conveyance will give this signal and the hoist operator will respond with the same signal to the worker in charge before any person is allowed to leave or enter the conveyance. If the conveyance stops at a level and a person remains on the conveyance, the signals are to be repeated.
Four bells	Blasting signal	Cautionary signal	To be given by the worker in charge of the conveyance. The hoist operator will raise the conveyance a short distance and let it back slowly. Only a one-bell signal is required to signal for raising a worker away from the blast.
Five bells	Conveyance release signal	Executive signal	To be given by the worker in charge of the conveyance for release of the conveyance to the hoist operator. The hoist operator will give the same signal to the worker in charge prior to any movement of the conveyance. The person in charge of the conveyance will guard the conveyance until it is moved from the landing place.
Nine bells	Emergency signal	Emergency signal	When a conveyance call system is in operation, the signal must be used to indicate an emergency and it must be given only on the conveyance call system. The emergency signal must be followed by the signal for the level on which the emergency exists.
One bell – two bells	Chairing signal	Executive signal	To be given by the worker in charge of the conveyance. The hoist operator will respond and raise the cage 0.5 metres (1.5 feet) and then slowly move the conveyance to the level as the chairs are set in place. When complete, the hoist operator will give the three-bells signal.

Table 2
[*Subsection 227(2)*]

Quantity and Distance for Storage of Explosives

Quantity kg	D2 Metres	D4 Metres	D5 Metres	D6 Metres	D7 Metres	D8 Metres
50	10	30	180	45	270	400
60	10	32	180	45	270	400
70	10	33	180	46	270	400
80	11	35	180	48	270	400
90	11	36	180	50	270	400
100	12	38	180	53	270	400
120	12	40	180	55	270	400
140	13	42	180	60	270	400
160	14	44	180	63	270	400
180	14	46	180	65	270	400
200	15	47	180	65	270	400
250	16	51	180	70	270	400
300	17	54	180	75	270	400
350	17	57	180	80	270	400
400	18	59	180	83	270	400
450	19	62	180	88	270	400
500	20	64	180	90	270	400
600	21	68	180	95	270	400
700	22	72	180	100	270	400
800	23	75	180	105	270	415
900	24	78	180	108	270	430
1 000	24	80	180	113	270	445
1 200	26	86	180	120	270	475
1 400	27	90	180	125	270	500
1 600	29	94	180	130	270	520
1 800	30	98	180	135	270	540
2 000	31	105	180	140	270	560
2 500	33	110	185	153	275	610
3 000	35	120	205	163	305	640
3 500	37	125	220	170	330	680
4 000	39	130	235	178	350	710

5 000	42	140	255	190	380	760
6 000	44	150	270	203	405	810
7 000	46	155	285	213	425	850
8 000	48	160	300	223	445	890
9 000	50	170	310	235	465	930
10 000	52	175	320	240	480	960
12 000	55	185	340	255	510	1 020
14 000	58	195	360	270	540	1 080
16 000	61	205	375	280	560	1 120
18 000	63	210	390	295	590	1 180
20 000	66	220	405	305	610	1 220
25 000	71	235	435	325	650	1 300
30 000	75	250	460	345	690	1 380
35 000	79	265	485	365	730	1 460
40 000	83	275	510	380	760	1 520
50 000	89	295	550	410	820	1 640
60 000	94	315	580	435	870	1 740
70 000	99	330	610	460	920	1 840
80 000	105	345	640	480	960	1 920
90 000	110	360	670	500	1 000	2 000

D2 The distance that is required to separate two magazines, provided that there is an effective barricade between them.

D4 This is the required distance between a magazine and a very lightly travelled road. (Provincially numbered highways do not qualify as lightly travelled roads.)

D5 This is the distance required from a magazine to most roads and highways.

D6 This is the distance required between unbarricaded magazines.

D7 This is called inhabited building distance. It applies to very busy roads (more than 5,000 vehicles in a 24-hour period) and to buildings where people may assemble. Note that there are minimum distances: 270 metres to an isolated inhabited building and 400 metres to groups of buildings.

D8 This is the distance from a magazine to a building of vulnerable construction. Vulnerable construction includes high-rises, schools, hospitals, etc.

Table 3
[*Section 313*]

Approved Service Brake Testing for Surface Haulage Vehicles and Rubber-tired Units of Powered Mobile Equipment Whose Gross Weight Exceeds 25 000 Kilograms

A Stopping distance:

The service brakes must be capable of stopping the fully-loaded vehicle or rubber-tired unit of powered mobile equipment operating on level ground from an initial speed of 32 kilometres per hour within a distance of:

Gross Weight in Kilograms	Stopping Distance
under 50 000 kg	20 metres
50 000 to 100 000 kg	30 metres
100 000 to 200 000 kg	40 metres
over 200 000 kg	55 metres

B Test conditions:

Auxiliary retarding devices must not be used during the brake tests but must be available for application in an emergency.

The test roadway must have a uniform grade and must be of adequate width for safety. An emergency lane or run-off must be available in case of brake failure.

Note: A 5% variation in initial speed will result in a 10% difference in stopping distance.

PART II

Form A
[*Section 339*]

Diesel Powered Equipment Notice

Company Identification

Company Name: _____ Date: _____

Mine: _____ Area of operation: _____

Type: _____ Purpose: _____

Manufacturer's recommended grade (for mobile units): _____

Maximum operating grade for unit: _____

Maximum authorized load: _____

Unit Identification Data

Make: _____ Company unit number: _____

Does the unit conform to the CSA standards: ☐ Yes ☐ No

Engine Data

Make: _____ Model: _____ Serial Number: _____

Maximum rated load (kW): _____ Maximum speed (RMP): _____

Maximum fuel injection (kg/hr): _____

After Treatment Device Data

Type: _____ Manufacturer: _____ Model: _____

Fuel: _____ Capacity of tanks: _____

Hydraulic Fluid

Trade name: _____ Quantity: _____ Fire retardant: ☐ Yes ☐ No

Fire Suppression System

Type: _____ Number of nozzles: _____ Size of unit: _____

Fire Extinguishers

Type and size: _____

Ventilation

Amount of air required for this diesel engine: _____

Braking System: _____

Service: _____

Emergency: _____

Parking Brake: _____

_____ _____

Company Representative (Name and signature) Title

SASKATCHEWAN REGULATIONS 35/2003

The Occupational Health and Safety Act, 1993

Section 44

Order in Council 336/2003, dated April 29, 2003

(Filed April 30, 2003)

Title

1 These regulations may be cited as *The Occupational Health and Safety Amendment Regulations, 2003*.

R.R.S. c.O-1.1 Reg 1 amended

2 *The Occupational Health and Safety Regulations, 1996* are amended in the manner set forth in these regulations.

Section 2 amended

3 Clause 2(1)(oo) is repealed and the following substituted:

"(oo) **'*The Mines Regulations*'** means *The Mines Regulations, 2003*".

Section 3 repealed

4 Section 3 is repealed.

New table 7

5 Table 7 is repealed and the following substituted:

"TABLE 7

[*Subsections 22(2) and 45(1)*]

Prescribed Places of Employment

1. Types of places of employment:

   (a) hospitals, nursing homes and home care;

   (b) metal foundries and mills; and

   (c) mines.

2. Places of employment at which the following types of work are performed:

   (a) aerial crop spraying, operation of helicopters, water bombing;

   (b) autobody and automotive paint repairing, bumper electroplating, auto rust proofing, auto glass installation, auto vinyl roofing, fibreglassing boats and autos;

   (c) building construction;

   (d) camp catering;

   (e) farming and ranching;

   (f) forestry work other than pulp and paper production;

   (g) forwarding and warehousing as a business;

(h) metal manufacturing and machining, marble works, concrete block and ready mix manufacturing;

(i) oilwell servicing;

(j) oil and gas drilling, well servicing with a rig, water well drilling;

(k) processing meat, poultry and fish;

(l) road construction and earthwork, urban sewer and water construction, tunnelling;

(m) trucking;

(n) wholesale baking, dairy products, soft drinks and food preparation and packaging**".**

Coming into force

6 These regulations come into force on the day on which they are filed with the Registrar of Regulations.

SASKATCHEWAN REGULATIONS 36/2003

The Wildlife Habitat Protection Act

Sections 3 and 9

Order in Council 347/2003, dated May 6, 2003

(Filed May 7, 2003)

Title

1 These regulations may be cited as *The Treaty Land Entitlement Withdrawal Amendment Regulations, 2003 (No. 2).*

R.R.S. c.W-13.2 Reg 2, Appendix amended

2 The Appendix to *The Treaty Land Entitlement Withdrawal Regulations* is amended by adding the following item after item 71:

"72 All those lands in Township 7, in Range 29, west of the Third Meridian, described as follows:

(a) the north half of Section 7;

(b) the north half of Section 8;

(c) the west half of Section 17;

(d) the west half and south-east quarter of Section 18**".**

Coming into force

3 These regulations come into force on the day on which they are filed with the Registrar of Regulations.

SASKATCHEWAN REGULATIONS 37/2003

The Securities Act, 1988

Section 154

Commission Order, dated April 17, 2003

(Filed May 8, 2003)

Title

1 These regulations may be cited as *The Securities Commission (Local Instruments) Amendment Regulations, 2003*.

R.R.S. S-42.2 Reg 5, amended

2 *The Securities Commission (Local Instruments) Regulations* are amended in the manner set forth in these regulations.

Section 2 amended

3 The following clause is added after clause 2(h):

"(i) Local Instrument 11-501, entitled Conflicts of Interest, as set out in Part X of the Appendix**".**

Appendix amended

4 The following Part is added after Part IX of the Appendix:

"PART X
[*Clause 2(i)*]

"**SASKATCHEWAN LOCAL INSTRUMENT 11-501**
CONFLICTS OF INTEREST

"Interpretation

1 In this local instrument:

(a) **"Act"** means *The Securities Act, 1988*;

(b) **"Chairperson"** means the Chairperson of the Commission;

(c) **"Commission"** means the Saskatchewan Financial Services Commission;

(d) **"confidential information"** means information that is not available to the public;

(e) **"Director"** means the Director of the Securities Division of the Commission;

(f) **"employee"** means a staff member of the Commission to whom the responsibility for the administration of *The Securities Act, 1988* is assigned and includes:

(i) a probationary or temporary staff member; and

(ii) a person who is employed on a fixed term contract or who is seconded to the Commission;

(g) **"member"** means a member of the Commission appointed by the Lieutenant Governor in Council pursuant to the Act.

"Scope

2 This local instrument applies to members and employees.

"To whom a report must be made, an approval must be sought, etc.

3(1) A member or employee shall comply with subsection (2) if the member or employee:

(a) delivers an initial undertaking pursuant to subsection 6(1);

(b) delivers an annual Certificate of Compliance pursuant to subsection 6(2);

(c) reports breaches of this local instrument pursuant to section 7;

(d) reports an interest pursuant to section 8; or

(e) seeks an exemption pursuant to subsection 13(1).

(2) In the circumstances mentioned in subsection (1), the member or employee shall report to, deliver to or seek an exemption from:

(a) in the case of an employee, the Director;

(b) in the case of the Director or a member other than the Chairperson, the Chairperson; and

(c) in the case of the Chairperson, the minister.

"Avoidance of conflict and disclosure

4 Every member and every employee shall avoid actual or apparent conflicts of interest.

"Conflicts

5(1) Subject to subsection (2), no member or employee shall:

(a) engage, directly or indirectly, in any transaction or arrangement for personal profit or benefit that:

(i) accrues from or is based on the member's or employee's official position or authority; or

(ii) is based on confidential information that the member or employee gained by reason of his or her position or authority;

(b) accept the services of a registrant on terms that the member or employee knows are more favourable than those generally available from the registrant;

(c) disclose or release confidential information unless authorized pursuant to the Act;

(d) act in the course of the member's or employee's duties with respect to any matter in which the member or employee has a personal interest and that is incompatible with an unbiased exercise of official judgment;

(e) hold office in or be a director of any registrant or any reporting issuer;

(f) have a beneficial interest in any registrant or any of its affiliates, other than an interest in securities that are traded on an exchange; or

(g) engage in any outside work or business undertaking that interferes with the performance of the member's or employee's duties to the Commission.

(2) Clause (1)(e) does not apply to a member other than the Chairperson who has given written notice to the Chairperson that the member is an officer or director of a registrant or reporting issuer.

"Reports

6(1) At the time of taking office or employment or being seconded to the Commission, a member or employee shall deliver an initial undertaking substantially in Form 11-501F1.

(2) On or before January 31 of each year after delivery of an initial report in subsection (1), the member or employee shall deliver an annual Certificate of Compliance as at December 31 of the prior year substantially in Form 11-501F2.

(3) If a member or employee is required to attach a portfolio statement to an initial undertaking or annual Certificate of Compliance that the member or employee delivers pursuant to this section, the portfolio statement must be substantially in Form 11-501F3.

"Reports of breaches

7 A member or employee shall immediately report any breach of this local instrument of which he or she becomes aware.

"Reports of interests

8 A member or employee shall immediately report in writing:

(a) any actual or apparent conflict of interest;

(b) when he or she has an interest in an issuer or registrant that may reasonably be considered to prejudice or affect his or her work on a matter involving the issuer or registrant; or

(c) when his or her prior employment or relationship may reasonably be considered to prejudice or affect his or her work on an assignment.

"Confidentiality of information received

9 A person who receives information from a member or employee pursuant to the reporting provisions of this local instrument shall not disclose that information except:

(a) as required by applicable law or in connection with any administrative, disciplinary or court proceeding involving the member or employee and concerning the breach of this local instrument;

(b) with the agreement of the applicable member or employee; or

(c) as required by subsection 13(3).

"Confidentiality – former members and employees

10 No former member or employee shall disclose any confidential information that he or she has obtained in the course of his or her service with the Commission.

"When member must not participate in hearing

11 No member shall participate in a hearing if:

(a) with respect to that hearing, he or she has a personal interest that is, or could reasonably be perceived to be, incompatible with an unbiased exercise of his or her judgment;

(b) for any other reason, he or she is of the opinion that he or she would be unable to render an impartial decision; or

(c) his or her continuing or prior associations would reasonably be perceived as affecting his or her ability to render an impartial decision with respect to that hearing.

"Procedure for reporting conflicts, etc., by members before hearings

12(1) If a member has any continuing and prior interests, participation and relationships that could potentially give rise to a conflict of interest in connection with any hearing in which the member is to participate, the member shall disclose the interest, participation or relationship to the Chairperson.

(2) The Chairperson shall determine whether or not the member should participate in the hearing or whether another member should participate in the hearing taking into account the matters described in section 11.

(3) If the Chairperson has any continuing and prior interests, participation and relationships that could potentially give rise to a conflict of interest in connection with any hearing in which the Chairperson is to participate, the Chairperson shall disclose the interest, participation or relationship to the minister.

(4) The minister shall determine whether or not the Chairperson should participate in the hearing or whether another member should participate in the hearing taking into account the matters described in section 11.

(5) Any determination pursuant to subsection (2) or (4) is final and binding for all purposes of this local instrument.

"Exemptions

13(1) Members and employees may apply in writing for an exemption from the provisions of this local instrument.

(2) The minister, Chairperson or Director, as the case may be, may grant the exemption if the minister, Chairperson or Director, as the case may be, is of the opinion that it is not appropriate that the applicable provision of this local instrument apply to the member or employee who requests the exemption.

(3) The minister, Chairperson or Director, as the case may be, who grants an exemption pursuant to subsection (2) shall give written notice of the exemption and the reasons for it to the Commission and to the member or employee who requested the exemption.

"SASKATCHEWAN LOCAL INSTRUMENT 11-501
CONFLICTS OF INTEREST

"FORM 11-501F1
INITIAL UNDERTAKING

To: Chairperson/Director
Saskatchewan Financial Services Commission

I understand the provisions of Saskatchewan Local Instrument 11-501 Conflicts of Interest and undertake to observe them. I undertake that I will not depart from the requirements of its provisions without an exemption granted pursuant to section 13 of the local instrument.

Check applicable box(es):

☐ I do not beneficially own, directly or indirectly, or exercise control or have direction over any securities.

☐ I have attached a portfolio statement containing a complete list of all securities that I beneficially own, directly or indirectly, or over which I exercise control or have direction.

If my spouse is a registrant or employed by a registrant pursuant to *The Securities Act, 1988*, I have disclosed below the names of my spouse and the registrant. If I am employed by a registrant pursuant to *The Securities Act, 1988*, I have disclosed below the name of the registrant.

Name of spouse: _____

Name of Registrant/Employer: _____

Dated: _____ Signed: _____

Print name: _____

"SASKATCHEWAN LOCAL INSTRUMENT 11-501
CONFLICTS OF INTEREST

"FORM 11-501F2
ANNUAL CERTIFICATE OF COMPLIANCE

To: Chairperson/Director
Saskatchewan Financial Services Commission

I understand the provisions of Saskatchewan Local Instrument 11-501 Conflicts of Interest and confirm that I have observed them.

Check applicable box(es):

☐ I do not beneficially own, directly or indirectly, or exercise control or have direction over any securities.

☐ I have attached a portfolio statement containing a complete list of all securities that I beneficially own, directly or indirectly, or over which I exercise control or have direction.

If my spouse is a registrant or employed by a registrant pursuant to *The Securities Act, 1988*, I have disclosed below the names of my spouse and the registrant. If I am employed by a registrant pursuant to *The Securities Act, 1988*, I have disclosed below the name of the registrant.

Name of spouse: _____

Name of Registrant/Employer: _____

Dated: _____ Signed: _____

Print name: _____

"SASKATCHEWAN LOCAL INSTRUMENT 11-501
CONFLICTS OF INTEREST

"FORM 11-501F3
PORTFOLIO STATEMENT

A list of all securities that I beneficially own, directly or indirectly, or over which I exercise control or have direction is disclosed below or attached.

Issuer	Description of securities

Dated: _____ Signed: _____

Print name: _____ **".**

Coming into force

5 These regulations come into force on the day on which they are filed with the Registrar of Regulations.

Regina, Saskatchewan
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