

1 Section 2 of New Brunswick Regulation 91-191 under the Occupational Health and Safety Act is amended

(a) by repealing the definition “lock out” and substituting the following:

“lock out” means to render inoperative and prevent from being activated any machine or equipment, including electrical equipment, by using a locking device to isolate the energy source from the machine or the equipment; (*verrouiller*)

(b) by repealing the definition “short-term exposure limit or STEL”;

(c) by repealing the definition “time-weighted average or TWA”;

(d) by repealing the definition “zero energy state” and substituting the following:

“zero energy state” means a state in which a machine or equipment is rendered incapable of spontaneous or unexpected action. (*niveau d'énergie zéro*)

(e) in the English version

(i) by repealing the definition “air contaminant” and substituting the following:

“air contaminant” means any gas, fume, smoke, vapour, dust or other substance in the air, the concentration of which may be hazardous to the health or safety of a person; (*aérocontaminant*)

(ii) by repealing the definition “portable compressed gas container” and substituting the following:

“portable compressed gas container” means any container having a water capacity of 450 kg or less that contains or is intended to contain a compressed or liquefied gas; (*contenant portatif de gaz comprimé*)

(f) in the French version

(i) by repealing the definition « pollutant »;

(ii) by repealing the definition « contenant portatif de gaz sous pression »;

(g) in the French version

(i) in the definition « appareils de levage » by striking out “monte-commande” and substituting “monte-plats”;

(ii) in the definition « limite d’exposition professionnelle »

(A) in paragraph a) by striking out “polluant” and substituting “aérocontaminant”;

(B) in paragraph g) by striking out “polluant” and substituting “aérocontaminant”;

(h) by adding the following definitions in alphabetical order:

“blank flange” means a solid plate installed through the cross-section of a pipe, usually at a flanged connection; (*obturateur*)

“blind flange” means a solid plate installed at the end of a pipe that has been physically disconnected from a piping system; (*bride pleine*)

“critical lift” means

- (a) a lift by a mobile crane if the load exceeds 90% of its rated capacity while it is lifting the load at a load radius of more than 50% of its maximum permitted load radius, taking into account its position and configuration during the lift,
- (b) a tandem lift by two powered hoisting apparatuses if the load of one of the powered hoisting apparatuses exceeds 75% of its rated capacity,
- (c) a lift by a powered hoisting apparatus, supported on a floating base, if the load exceeds 90% of its rated capacity,
- (d) a tandem lift by more than two powered hoisting apparatuses,
- (e) a lift of a person in a work platform suspended from or attached to a mobile crane or a powered hoisting apparatus,
- (f) a lift by a mobile crane or a powered hoisting apparatus of a submerged load, or
- (g) a lift by a mobile crane or a powered hoisting apparatus
 - (i) in which the centre of gravity of the load changes during the lift,
 - (ii) in which the length of one or more sling legs changes during a lift, or
 - (iii) that goes over or between energized high voltage electrical conductors; (*levage critique*)

“electrical hazard” means a danger of electric shock, arc flash burn, thermal burn or blast injury resulting from contact with electrical equipment or failure of that equipment; (*danger électrique*)

“electrically safe work condition” means, with respect to electrical equipment with potential of 30 volts or more, a state in which an electrical conductor or a circuit part has been disconnected from energized parts of the electrical equipment, locked out, tested to ensure the absence of voltage and, if grounding is determined to be necessary, grounded; (*situation de travail sans danger électrique*)

“energized”, when applied to electrical equipment, means electrically connected to or is a source of voltage; (*sous-tension*)

“hot tapping” means a process of penetrating through the pressure-containing barrier of a pipe or equipment that has not been totally isolated, depressurized, purged and cleaned; (*piquage en charge*)

“IDLH atmosphere” means an atmosphere that poses an immediate threat to life or that will cause irreversible adverse health effects or impair a person’s ability to escape; (*atmosphère DIVS*)

“isolate” means to interrupt or disconnect pipes, hoses or energy sources by applying control measures; (*isolé*)

“STEL” means short-term exposure limit or STEL as defined in the ACGIH publication entitled “2016 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices”; (*LECT*)

“TWA” means time-weighted average or TWA as defined in the ACGIH publication entitled “2016 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices”; (*MPT*)

(i) by adding the following definitions in alphabetical order in the French version:

« aérocontaminant » s’entend des gaz, des vapeurs, des fumées, des poussières ou d’autres substances dont la concentration dans l’air peut être dangereuse pour la santé ou la sécurité d’une personne; (*air contaminant*)

« contenant portatif de gaz comprimé » s’entend de tout contenant ayant une capacité maximale de 450 kg d’eau et qui renferme ou qui est destiné à renfermer un gaz comprimé ou liquifié; (*portable compressed gas container*)

2 Section 20 of the French version of the Regulation is amended

(a) in subparagraph(1)b)(ii) by striking out “de polluants” and substituting “d’aérocontaminants”;

(b) in paragraph (4)b) by striking out “de polluants” and substituting “d’aérocontaminants”.

3 The heading “Polluants et ventilation industrielle” preceding section 24 of the French version of the Regulation is amended by striking out “Polluants” and substituting “Aérocontaminants”.

4 The heading “Polluants – niveau de concentration” preceding subsection 24(1) of the French version of the Regulation is amended by striking out “Polluants” and substituting “Aérocontaminants”.

5 Section 24 of the French version of the Regulation is amended

- (a) *in subsection (1) by striking out “polluants” and “polluant” and substituting “aérocontaminants” and “aérocontaminant”, respectively;*
- (b) *in subsection (2.2) by striking out “polluants” and substituting “aérocontaminants”;*
- (c) *in subsection (2.3) by striking out “du polluant” and substituting “de l’aérocontaminant”;*
- (d) *in subsection (2.4) by striking out “contrôler les polluants” and “les polluants produits” and substituting “limiter les aérocontaminants” and “les aérocontaminants produits”, respectively;*
- (e) *in subsection (2.41) by striking out “polluants” and substituting “aérocontaminants”;*
- (f) *in paragraph (2.51)b) by striking out “polluant” and substituting “aérocontaminant”;*
- (g) *in subsection (2.61) by striking out “polluant” and substituting “aérocontaminant”;*
- (h) *in subsection (2.81)*
- (i) *in paragraph a) by striking out “de polluants” and substituting “d’aérocontaminants”;*
- (ii) *in paragraph b) by striking out “de polluants” and substituting “d’aérocontaminants”;*

(i) in subsection (4) by striking out “de polluants” and “des polluants” and substituting “d’aérocontaminants” and “des aércontaminants”, respectively.

6 *The heading “Exposition à des polluants autre que dans la semaine normale de travail” preceding section 24.1 of the French version of the Regulation is amended by striking out “polluants” and substituting “aérocontaminants”.*

7 *Section 24.1 of the French version of the Regulation is amended*

(a) in subsection (1) by striking out “polluant” and substituting “aérocontaminant”;

(b) in subsection (2) by striking out “polluant” wherever it appears and substituting “aérocontaminant”;

(c) in subsection (3) by striking out “polluants” wherever it appears and substituting “aérocontaminants”.

8 *Section 25 of the French version of the Regulation is amended*

(a) in paragraph a) by striking out “polluant” and substituting “aérocontaminant”;

(b) in paragraph b) by striking out “polluant” and substituting “aérocontaminant”.

9 *Section 25.2 of the French version of the Regulation is amended by striking out “contrôlée” and substituting “limitée”.*

10 *Subsection 51.6(1) of the French version of the Regulation is amended by striking out “de polluants” and substituting “d’aérocontaminants”.*

11 *Subsection 75(3) of the Regulation is repealed.*

12 *The Regulation is amended by adding after section 79 the following:*

Transportation of portable compressed gas containers

79.1 A portable compressed gas container may be transported by motor vehicle if the container is secured in an upright position, the valves are closed, the valve protection devices are in place, the protective cap is firmly secured and the container does not project beyond the side or end of the motor vehicle.

13 *The heading “Hoist used to raise materials to roof” preceding section 109 of the English version of the Regulation is amended by striking out “Hoist” and substituting “Hoisting apparatus”.*

14 *Section 109 of the Regulation is amended*

(a) by repealing subsection (1);

(b) in subsection (2) of the English version

(i) in the portion preceding paragraph (a) by striking out “hoist” and substituting “hoisting apparatus”;

(ii) in paragraph (b) by striking out “hoist” and substituting “hoisting apparatus”.

15 *The heading “Hoist used to raise materials to roof” preceding section 110 of the English version of the Regulation is amended by striking out “Hoist” and substituting “Hoisting apparatus”.*

16 *Section 110 of the English version of the Regulation is amended by striking out “hoist,” and substituting “hoisting apparatus,”.*

17 *The Regulation is amended by adding after section 188 the following:*

Protection of employees – rock face

188.1 An employer shall ensure that no employee works close to a rock face until the rock face has been examined and declared safe to carry out the work.

18 Section 207 of the Regulation is amended

(a) by adding after subsection (1) the following:

Rigging

207(1.1) An employer shall ensure that a competent person carries out the rigging of materials that are to be hoisted by a hoisting apparatus.

(b) by repealing subsection (2) and substituting the following:

207(2) An employer and an operator of a hoisting apparatus shall each ensure that the hoisting apparatus is erected, installed, assembled, started, operated, used, handled, stored, stopped, serviced, tested, cleaned, adjusted, maintained, repaired, inspected and dismantled in accordance with the manufacturer's specifications and the following CSA standards, if applicable:

(a) B167-08 (R2015), "Overhead travelling cranes – Design, inspection, testing, maintenance, and safe operation" or a standard offering equivalent or better protection;

(b) C22.2 No. 33-M1984 (R2014), "Construction and Test of Electric Cranes and Hoists" or a standard offering equivalent or better protection;

(c) Z248-04 (R2014), "Code for Tower Cranes" or a standard offering equivalent or better protection; and

(d) Z150-11, “Safety Code on Mobile Cranes” or a standard offering equivalent or better protection.

19 *The Regulation is amended by adding after section 207 the following:*

Precautions when hoisted by hoisting apparatus

207.01(1) An employer shall ensure that a hoisting apparatus that is raised from the ground by means of another hoisting apparatus is adequately blocked.

207.01(2) An employer shall ensure that an employee does not work under or go under the raised parts of a hoisting apparatus unless the parts are adequately blocked, and no employee shall work under or go under the raised parts unless the parts are adequately blocked.

20 *Subsection 210(2) of the Regulation is amended in the portion preceding paragraph (a) by striking out “inspects and tests a hoisting apparatus, including any safety devices” and substituting “inspects and repairs a hoisting apparatus, including any safety devices or rigging equipment”.*

21 *The Regulation is amended by adding after section 211 the following:*

Protection of employees – suspended load

211.1 No employee shall be in the area under a load suspended by a hoisting apparatus.

22 *The Regulation is amended by adding after section 212 the following:*

Critical Lifts

Code of practice

212.1(1) For every critical lift, an employer and a contractor shall each ensure that a code of practice is established that contains the following information:

- (a) rigging details;
- (b) wind speed limitations;
- (c) maximum hoist line speed;
- (d) maximum crane travel speed, if applicable;
- (e) details concerning load distribution;
- (f) the need for and position of signallers, if applicable; and
- (g) a description of an effective communications system that employees involved in the critical lift shall use.

212.1(2) At a meeting held immediately before commencing a critical lift, an employer or a contractor shall inform the employees involved in the critical lift of the content of the code of practice and the supervisor shall document the meeting.

212.1(3) The meeting shall be repeated whenever there is a change in the employees or the equipment involved in the critical lift.

212.1(4) An employer shall ensure that a copy of the code of practice is readily available to employees involved in the critical lift.

212.1(5) An employee shall comply with the code of practice and an employer shall ensure that employees comply with the code of practice.

23 *Paragraph 213.11(b) of the Regulation is repealed and the following is substituted:*

(b) is operated by

(i) if the mobile crane is a wheel- or crawler-mounted lattice boom crane with a lifting capacity of over 25 t or is a wheel- or crawler- mounted hydraulic boom crane with a lifting capacity of over 25 t, an operator who holds an appropriate certificate of qualification issued under the *Apprenticeship and Occupational Certification Act*, or

(ii) if the mobile crane is of a type other than the type referred to in subparagraph (i), a competent person,

24 *Subsection 213.41(1) of the Regulation is amended by striking out “jacks or hoists” and substituting “a hoisting apparatus”.*

25 *Section 216 of the Regulation is amended*

(a) *in subsection (1) by adding after paragraph (g) the following:*

(g.1) has a rear view mirror or other means of ensuring that the truck can be safely backed up,

(b) *by adding after subsection (1) the following:*

Loads

216(1.1) An operator of an industrial lift truck shall ensure that the truck is not loaded beyond its rated capacity and that the load is stabilized and, if necessary, secured.

(c) by adding after subsection (2) the following:

Inspections and repairs

216(2.1) An employer shall ensure that a competent person thoroughly inspects and repairs an industrial lift truck and any safety devices installed on it before the industrial lift truck is first put in use and after any incident that may have damaged some part of the it.

(d) in subsection (5) by striking out “subsection 221(1)” and substituting “subsection 221(1) and shall ensure that an operator of an industrial lift truck uses the seat belts and restraining devices while the industrial lift truck is in motion”.

26 *The Regulation is amended by adding after section 216 the following:*

Precautions when hoisted by hoisting apparatus

216.01(1) An employer shall ensure that an industrial lift truck that is raised from the ground by means of a hoisting apparatus is adequately blocked.

216.01(2) An employer shall ensure that an employee does not work under or go under the raised parts of an industrial lift truck unless the parts are adequately blocked, and no employee shall work under or go under the raised parts unless the parts are adequately blocked.

Pedestrian and equipment traffic

216.02(1) If the circumstances permit, an employer shall provide designated pedestrian walkways to separate pedestrian traffic from areas in which industrial lift trucks are in operation.

216.02(2) If the circumstances do not permit an employer to provide designated pedestrian walkways, an employer shall implement one of the following safe work procedures to minimize the possibility of collision:

- (a) the use of a traffic control system;
- (b) the enforcement of speed limits for industrial lift trucks; or
- (c) a requirement for a pedestrian and an industrial lift truck operator to acknowledge each other's presence before the pedestrian proceeds through the area.

216.02(3) In order to improve an industrial lift truck operator's view of the area, the operator may, if there is no pedestrian traffic in the area, travel forward with an elevated load provided that the operating conditions are maintained to ensure the stability of the truck and compliance with the manufacturer's specifications.

27 *The Regulation is amended by adding after section 216.2 the following:*

Industrial lift truck used as power supply

216.3 If an industrial lift truck is used as a power supply, an employer shall ensure that wheel chocks or similar devices are used to prevent it from moving in a manner that may endanger an employee.

28 *The Regulation is amended by adding after section 218 the following:*

Manufacturer's specifications

218.1 An employer and an employee shall each ensure that powered mobile equipment is erected, installed, assembled, started, operated, used, handled, stored, stopped, serviced,

tested, cleaned, adjusted, maintained, repaired, inspected and dismantled in accordance with the manufacturer's specifications.

29 *Section 222 of the Regulation is amended by striking out “CSA standard W47.1-92 (reaffirmed 1998), “Certification of Companies for Fusion Welding of Steel Structures” and substituting “CSA standard W47.1-09 (Reaffirmed 2014), “Certification of Companies for Fusion Welding of Steel Structures” or a standard offering equivalent or better protection”.*

30 *The Regulation is amended by adding after section 224 the following:*

Powered mobile equipment used as power supply

224.1 If powered mobile equipment is used as a power supply, an employer shall ensure that wheel chocks or similar devices are used to prevent the powered mobile equipment from moving in a manner that may endanger an employee.

31 *The heading “Precautions when jacked or hoisted” preceding subsection 229(2) of the Regulation is amended by striking out “jacked or hoisted” and substituting “hoisted by hoisting apparatus”.*

32 *Subsection 229(2) of the Regulation is amended by striking out “jacks or hoists” and substituting “a hoisting apparatus”.*

33 *The heading “Precautions when jacked or hoisted” preceding subsection 229(3) of the Regulation is amended by striking out “jacked or hoisted” and substituting “hoisted by hoisting apparatus”.*

34 *The Regulation is amended by adding after section 230.2 the following:*

Vehicle used as power supply

230.201 If a vehicle is used as a power supply, an employer shall ensure that wheel chocks or similar devices are used to prevent the vehicle from moving in a manner that may endanger an employee.

35 *Subsection 230.21(1) of the Regulation is amended in the portion preceding paragraph (a) by striking out “tonne” and substituting “t”.*

36 *The heading “Precautions when jacked or hoisted” preceding subsection 230.3(2) of the Regulation is amended by striking out “jacked or hoisted” and substituting “hoisted by hoisting apparatus”.*

37 *Subsection 230.3(2) of the Regulation is amended by striking out “jacks or hoists” and substituting “a hoisting apparatus”.*

38 *The heading “Precautions when jacked or hoisted” preceding subsections 230.3(3) of the Regulation is amended by striking out “jacked or hoisted” and substituting “hoisted by hoisting apparatus”.*

39 *The heading “Précautions à prendre à pour lever à l’aide d’un cric ou d’un treuil” preceding subsection 230.31(2) of the French version of the Regulation is repealed and the following is substituted:*

Précautions à prendre sur une pente ou sur une berge

40 *The heading “Précautions à prendre sur une pente ou sur une berge” preceding subsection 230.31(3) of the French version of the Regulation is repealed and the following is substituted:*

Danger créé par la poussière

41 *Section 231 of the Regulation is amended by adding after subsection (1) the following:*

Manufacturer's specifications

231(1.1) An employer and an operator of a hoisting apparatus shall each ensure that a personnel carrying device is erected, installed, assembled, started, operated, used, handled, stored, stopped, serviced, tested, cleaned, adjusted, maintained, repaired, inspected and dismantled in accordance with the manufacturer's specifications.

42 *Section 239 of the Regulation is amended*

(a) in subsection (1) in the portion preceding paragraph (a) by striking out "a machine has a means of isolating the energy source to the machine" and substituting "any equipment or machine has a means of isolating the energy source to the equipment or the machine";

(b) in subsection (2) by striking out "a machine" and substituting "any equipment or machine";

(c) by repealing subsection (3) and substituting the following:

239(3) An employer shall establish a written lock out procedure for equipment and machines and ensure that an employee who may be required to lock out the equipment or the machine is adequately instructed and trained to lock out the equipment or the machine.

(d) in subsection (4)

- (i) in the portion preceding paragraph (a) by striking out “a machine is to be cleaned, maintained, adjusted or repaired, an employer shall ensure that no employee works on the machine” and substituting “any equipment or machine is to be cleaned, maintained, adjusted or repaired, an employer shall ensure that no employee works on the equipment or the machine”;*
- (ii) in paragraph (a) by striking out “the machine” and substituting “the equipment or the machine”;*
- (iii) in paragraph (b)*
- (A) in the portion preceding subparagraph (i) by striking out “machine” and substituting “equipment or the machine”;*
- (B) in subparagraph (ii) by striking out “machine” and substituting “equipment or the machine”;*
- (C) in subparagraph (iii)*
- (I) in subclause (A) by striking out “machine” and substituting “equipment or the machine”;*
- (II) in subclause (C) by striking out “machine” and substituting “equipment or the machine”;*
- (e) in subsection (5) by striking out “a machine until the employee verifies that paragraphs 4(a) and (b) have been complied with and verifies by testing that the machine” and substituting “any equipment or machine until the employee verifies that paragraphs (4)(a) and (b) have been complied with and verifies by testing that the equipment or the machine” ;*

(f) in subsection (6) in the portion preceding paragraph (a) by striking out “a machine” and substituting “any equipment or machine”.

43 *Subsection 251(1) of the French version of the Regulation is amended in the portion preceding paragraph a) by striking out “L’employeur doit s’assurer qu’une poulie exposée, dont une partie est située à 2,1 m du sol” and substituting “L’employeur s’assure qu’une poulie exposée, dont une partie est située à 2,1 m du sol ou moins”.*

44 *The heading “Definition of “confined space”” preceding section 262 of the Regulation is repealed and the following is substituted:*

Definitions

45 *Section 262 of the Regulation is repealed and the following is substituted:*

262 The following definitions apply in this Part.

“air supply system attendant” means an employee who continuously monitors the effectiveness of the air-line supply system. (*surveillant à l’alimentation en air*)

“attendant” means an employee who continuously monitors work in and near a confined space and, if necessary, initiates the emergency response procedure. (*surveillant*)

“confined space” means, other than a development heading in an underground mine and excavations, heating, ventilation and air conditioning (HVAC) plenums and related ventilation ductwork, crawl and attic spaces with openings to outside allowing for continuous passive ventilation and other similar structures provided that there are no factors that could give rise to the presence or development of an atmospheric or other hazard, an area that

(a) is enclosed or partially enclosed,

(b) is not designed or intended for continuous human occupancy, and

(c) has limited or restricted means of entry or exit that may complicate the provision of first aid, evacuation, rescue or other emergency response. (*espace clos*)

“emergency response team leader” means an employee who is responsible for supervising emergency response team operations and implementing an emergency response procedure. (*chef de l’équipe d’intervention d’urgence*)

“entrant” means an employee who enters a confined space. (*entrant*)

“entry supervisor” means an employee who is responsible for implementing the code of practice. (*superviseur d’entrée*)

46 *The Regulation is amended by adding after section 262 the following:*

Code of Practice

Code of practice – confined space

262.01(1) Before entry is permitted in a confined space, an employer, a contractor and an owner of a place of employment shall each ensure that a code of practice is established for the confined space.

262.01(2) An employer shall consult with the committee or health and safety representative, if any, or with employees if there is no committee or representative, in developing the code of practice.

262.01(3) The code of practice shall contain the following information:

(a) the date and authorized duration of the code of practice;

- (b) the location of the confined space to which the code of practice applies;
- (c) the name of the entry supervisor, emergency response team leader, attendant and air supply system attendant, if applicable, and the entrant;
- (d) a description of the work to be performed;
- (e) a description of any possible hazards that may affect the health or safety of employees;
- (f) the procedures to be followed and the equipment to be used to perform the work; and
- (g) the procedures to be followed and the equipment to be used in the event of an emergency.

262.01(4) An employer shall ensure that all employees involved in confined space work are adequately instructed and trained in the code of practice and the procedures identified in the code of practice.

262.01(5) The code of practice shall be posted conspicuously near the entrance to the confined space.

262.01(6) An employee shall comply with the code of practice and an employer shall ensure that employees comply with the code of practice.

262.01(7) An employee who will enter into a confined space or who may undertake a rescue operation in a confined space shall read the code of practice and acknowledge that the employee has received and understood the instructions in the code of practice by signing and dating a copy of the code of practice.

262.01(8) An employer shall ensure that the code of practice and any records associated with the code of practice, including an equipment calibration and maintenance log, are kept for a period of two years after the date on which the entry supervisor signed and dated the code of practice.

262.01(9) An employer shall ensure that a copy of the code of practice is readily available to an officer on request.

Safety of Confined Space

Hazards

262.011 If the circumstances permit, an employer, a contractor and an owner of a place of employment shall each ensure that the hazards identified in the code of practice are addressed by implementing the following hazard control measures in the following order of priority:

- (a) measures that involve the elimination of hazards;
- (b) measures that involve the selection of less hazardous means of carrying out work, including the substitution of procedures and equipment;
- (c) measures that involve the use of engineering controls to reduce the risks posed by hazards;
- (d) measures that involve the use of administrative controls to reduce the risks posed by hazards; and
- (e) measures that involve protection from the effects of hazards, including the provision of personal protective equipment.

Engulfment

262.012 An employer shall ensure that no person enters a confined space that may contain a material that has the potential for engulfing the entrant.

Use of equipment and accessories

262.02(1) An employer shall ensure that electrical equipment, atmospheric monitoring equipment and accessories used in a confined space that may contain flammable dust, gases or vapours are intrinsically safe.

262.02(2) An employer shall ensure that electrical equipment, atmospheric monitoring equipment and accessories used in a confined space are approved in accordance with CSA Standard C22.01-15, “Canadian Electrical Code, Part 1”, as amended from time to time, for use in hazardous locations as defined in that standard.

Entry and exit of confined space

262.021 Before entry is permitted in a confined space, an employer and a contractor shall each ensure that a competent person verifies that the opening of the confined space is large enough to allow safe entry and exit by an entrant wearing personal protective equipment and a member of the emergency response team using emergency response equipment.

Protection from traffic hazard

262.022 If a hazard from any form of traffic exists, an employer, a contractor and an owner of a place of employment shall each ensure that adequate warning signs and barricades are installed to protect an entrant while inside the confined space.

Emergency response team

262.03(1) An employer and a contractor shall each ensure that an emergency response team is present and ready to respond immediately if the confined space

- (a) contains or could develop an atmospheric or other hazard, or
- (b) has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.

262.03(2) If a confined space contains an IDLH atmosphere, an employer and a contractor shall each ensure that an emergency response team is able to reach the entrant within three minutes after the attendant initiates the emergency response procedure.

Duties and Responsibilities

Duties of entry supervisor

262.031(1) An entry supervisor shall

- (a) implement the code of practice,
- (b) prior to entry, ensure that employees involved in the confined space work are instructed and trained in the code of practice and the procedures identified in the code of practice,
- (c) ensure that all required actions have been taken before allowing entry to begin,
- (d) sign and date the code of practice,
- (e) ensure that acceptable conditions are maintained for the duration of the entry,

- (f) ensure that an emergency response team is available for the duration of the entry and that the means for summoning the team are operable,
- (g) terminate the entry and ensure removal of entrants and equipment at the appropriate time, and
- (h) communicate the status of the entry and the requirements relating to the entry to the next entry supervisor when the entry supervisor is replaced.

262.031(2) If the percentage or concentration referred to in paragraphs 262.06(2)(a) to (e) is unable to be maintained or there is a possibility that any liquid, free flowing solid or hazardous substance may enter into the confined space in a quantity that could endanger the health or safety of the entrant while inside the confined space, the entry supervisor shall ensure that

- (a) the confined space is continuously monitored while the entrant is in the confined space, and
- (b) procedures are in place and equipment is provided to allow entrants to safely enter and exit the confined space.

Duties of emergency response team leader

262.032 An emergency response team leader shall ensure that

- (a) a written emergency response procedure is established,
- (b) the emergency response procedure is adequate to protect the health and safety of employees and indicates the number of employees required in case of an emergency,

- (c) the members of the emergency response team perform a simulated rescue at least once a year, and
- (d) the procedures to be followed and the equipment to be used in the event of an emergency are followed and used correctly.

Duties of emergency response team leader in emergency

262.04 In an emergency, an emergency response team leader shall

- (a) assume control of all activities during the emergency response and direct the emergency response team,
- (b) ensure that the members of the emergency response team properly perform their duties throughout the emergency response,
- (c) assess the ability of the attendant and air supply system attendant to continue performing their duties, and
- (d) maintain two-way communication with all affected parties.

Responsibilities of attendant

262.041 An attendant shall

- (a) be stationed at all times outside the point of entry to or exit from the confined space and continuously monitor work in and near the confined space,
- (b) be knowledgeable about the actual and potential hazards associated with entering a confined space,
- (c) maintain two-way communication with the entrant,

- (d) review the entry procedures prior to entry,
- (e) during the entry,
 - (i) monitor conditions and changes that could adversely affect the health or safety of the entrant,
 - (ii) ensure that the procedures to be followed and the equipment to be used in the event of an emergency are followed and used correctly,
 - (iii) recognize the signs and symptoms of illnesses, injuries and hazard exposures that can compromise the health or safety of the entrant,
 - (iv) have a means for two-way communication with the entry supervisor and emergency response team leader, and
 - (v) keep track of entrants entering and exiting the confined space.

Duties of attendant in emergencies

262.042 In an emergency, an attendant shall

- (a) initiate the emergency response procedure,
- (b) order an evacuation of the confined space, if necessary, and
- (c) assist with or perform a non-entry rescue as set out in the code of practice.

Responsibilities of air supply system attendant

262.05 When an air supply system attendant is identified in a code of practice, the air supply system attendant shall ensure both in normal and emergency situations that

- (a) the air-line supply system is in proper working order and the air supply is uninterrupted, and
- (b) the air lines do not become entangled or otherwise compromised.

Responsibilities entrant

262.051 An entrant shall exit a confined space and notify the attendant if the entrant

- (a) observes a hazard that is not identified in the code of practice and for which hazard control measures are not in place, or
- (b) believes the atmosphere of the confined space is unsafe due to the limitations of the equipment or the hazard control measures that are in place.

Atmosphere of Confined Space

Entry not permitted

262.052 Neither an employer nor a contractor shall permit an employee to enter or remain in a confined space in which the atmosphere is not within acceptable limits.

Testing atmosphere

262.06(1) Prior to an employee entering a confined space in which hazardous substances are present or any liquid, free flowing solid or hazardous substance may enter into the confined space in a quantity that could endanger the health or safety of the employee, an employer shall ensure that a competent person tests the atmosphere of the confined space taking into consideration the stratification of air contaminants and oxygen to ensure that the atmosphere is within acceptable limits.

262.06(2) The atmosphere of a confined space is considered to be within acceptable limits if

- (a) the percentage of oxygen is not less than 19.5% by volume and not more than 23% by volume,
- (b) the concentration of an air contaminant does not exceed 50% of the lower explosive limit or lower flammability limit of the air contaminant when the confined space work is cleaning or inspecting and does not create a source of ignition,
- (c) the concentration of air contaminants does not exceed 10% of the lower explosive limit or lower flammability limit of the air contaminant when the confined space work is cold work using non-sparking equipment,
- (d) the concentration of air contaminants does not exceed 5% of the lower explosive limit or lower flammability limit of the air contaminant when the confined space work is riveting, welding, flame cutting or other fire or spark-producing work,
- (e) the concentration of air contaminants and physical agents meet the requirements of this Regulation,
- (f) the concentration, level or percentage referred to in paragraphs (a) to (e) is able to be maintained during the period of proposed occupancy in the confined space,
- (g) any liquid in which an employee may drown or any free flowing solid in which an employee may become entrapped has been removed from the confined space,
- (h) the entry of any liquid, free flowing solid or hazardous substance into the confined space in a quantity that could endanger the health or safety of the employee has been pre-

vented by a secure means of disconnecting the pipes adjacent to the confined space or fitting blank flanges or blind flanges to the pipes adjacent to the confined space, and

(i) all electrical or other equipment and machines that present a hazard to an entrant while entering, exiting or occupying the confined space have been put in a zero-energy state and locked out in accordance with sections 239 and 240.

262.06(3) The results of a test referred to in subsection (1), including the time and date the test was conducted, shall be documented and posted conspicuously at the entrance to the confined space.

Atmosphere within acceptable limits

262.061 In order to bring the atmosphere of a confined space within acceptable limits, an employer shall

- (a) ventilate the confined space,
- (b) remove air contaminants from the confined space by the displacement of air, or
- (c) intentionally flood the atmosphere inside the confined space with an inert gas such as nitrogen in order to eliminate the hazard of ignition of flammable vapours inside the confined space and create an oxygen deficient atmosphere.

Test ventilation systems

262.062 If ventilation systems are used to limit the concentration of air contaminants or to maintain safe levels of oxygen in the atmosphere of the confined space, an employer shall ensure that a competent person verifies the concentration of air contaminants and oxygen when the ventilation systems are shut down and when the ventilation systems are turned on.

Equipment calibration

262.07 When performing the tests referred to in subsection 262.06(1) and section 262.062, a competent person shall

- (a) use appropriate equipment that has been calibrated in accordance with the manufacturer's specifications,
- (b) bump test the equipment once each day unless the manufacturer requires bump tests be done more often, and
- (c) maintain an equipment calibration and maintenance log containing the following information:
 - (i) the date of purchase of the equipment;
 - (ii) the serial number of the equipment;
 - (iii) the sensor change schedule for the equipment; and
 - (iv) the maintenance, repair and calibration history of the equipment.

Source of air contaminants

262.071 When the source of air contaminants or oxygen cannot be determined from outside the confined space, an employer shall ensure that appropriate hazard control measures are implemented prior to entry and the source of air contaminants or oxygen is identified from inside the confined space before other work proceeds.

General

Identification of confined spaces

262.072 An employer shall maintain a list of the confined spaces located at a place of employment and the types of hazards that are or may be present at each confined space.

Training program for confined space work

262.08(1) An employer shall implement a training program for employees involved in confined space work.

262.08(2) An employer shall use Table A.1 “Overview of training requirements” of CSA Standard Z1006-10, (Reaffirmed 2015), “Management of Work in Confined Spaces” as a guide to establishing the content of the training program.

262.08(3) An employer shall ensure that a competent person provides the training program and that the training results in an employee being able to apply the information as needed to protect the employee’s health and safety.

Training records

262.081(1) An employer shall maintain a training record for each employee who has completed the training program referred to in section 262.08 containing the following information:

- (a) the name of the employee;
- (b) the name of the competent person who provided the training; and
- (c) the date on which the training took place.

262.081(2) An employer shall ensure that the training records are readily available to an officer on request.

Personal protective equipment

262.082 If an employer or entrant determines that personal protective equipment identified in the code of practice and worn inside a confined space impedes the entrant's ability to enter or exit the confined space, provisions to protect employees shall be incorporated in the code of practice.

Protective equipment

262.09 An employer and a contractor shall each ensure that all protective equipment and emergency equipment identified in the code of practice have been inspected by a competent person and are in good working order.

Full body harness

262.091(1) An employer shall ensure that an entrant who enters, occupies and exits a confined space wears a full body harness attached to a life line that is attached to a secure anchor located outside the confined space and is controlled by a competent employee.

262.091(2) An employer shall ensure that the full body harness conforms with the requirements for Class E harnesses in CSA standard Z259.10-18, "Full Body Harness" or a standard offering equivalent or better protection.

Life lines

262.092(1) When more than one entrant occupies a confined space, an employer shall ensure that measures are taken to prevent the life lines attached to the full body harnesses worn by the entrants from becoming entangled.

262.092(2) The use of a life line is not required if the code of practice identifies conditions that make its use impractical or unsafe.

SCBA

262.093 If a confined space in which entry is required contains an IDLH atmosphere, an employer shall ensure that a pressure-demand SCBA or a multi-functional SCBA/airline respirator with auxiliary self-contained air supply has a minimum rated service time of 15 minutes, or additional capacity if required by the code of practice.

47 *The heading “Testing, protective equipment and entry” preceding section 263 of the Regulation is repealed.*

48 *Section 263 of the Regulation is repealed.*

49 *The heading “Purging” preceding section 264 of the Regulation is repealed.*

50 *Section 264 of the Regulation is repealed.*

51 *The heading “Monitoring while employee in confined space” preceding section 265 of the Regulation is repealed.*

52 *Section 265 of the Regulation is repealed.*

- 53 *The heading “Duties of employer respecting equipment and personnel” preceding section 266 of the Regulation is repealed.*
- 54 *Section 266 of the Regulation is repealed.*
- 55 *The heading “Lower explosive limit of substances in confined space” preceding section 267 of the Regulation is repealed.*
- 56 *Section 267 of the Regulation is repealed.*
- 57 *The heading “Respiratory protective equipment” preceding section 268 of the Regulation is repealed.*
- 58 *Section 268 of the Regulation is repealed.*
- 59 *The heading “Oxygen content and flammable or reactive material” preceding section 269 of the Regulation is repealed.*
- 60 *Section 269 of the Regulation is repealed.*
- 61 *The heading “Electrical equipment and wet or solidly grounded confined space” preceding section 270 of the Regulation is repealed.*
- 62 *Section 270 of the Regulation is repealed.*
- 63 *The heading “Reports made under section 263” preceding section 271 of the Regulation is repealed.*
- 64 *Section 271 of the Regulation is repealed.*
- 65 *The heading “Protection from traffic hazard” preceding section 272 of the Regulation is repealed.*

66 *Section 272 of the Regulation is repealed.*

67 *Section 273 of the Regulation is amended*

(a) in paragraph (a) by striking out “and” at the end of the paragraph;

(b) by repealing paragraph (b) and substituting the following:

(b) monitoring the exposure level of employees from harmful fumes and gases or particles emitted from welding, cutting, burning or soldering operations to ensure that the level of concentration of air contaminants does not exceed the occupational exposure limits, and

(c) by adding after paragraph (b) the following:

(c) monitoring the work areas in proximity to the welding, cutting, burning or soldering area to ensure that the level of concentration of air contaminants does not exceed the occupational exposure limits.

68 *Subsection 274(1) of the Regulation is amended by repealing “CSA standard W117.2-94, “Safety in Welding, Cutting and Allied Processes” and substituting “CSA standard W117.2-12 (Reaffirmed 2017), “Safety in Welding, Cutting and Allied Processes” or a standard offering equivalent or better protection”.*

69 *Paragraph 274.1(b) of the Regulation is repealed and the following is substituted:*

(b) is employed by a company certified to CSA standard W47.1-09 (Reaffirmed 2014), “Certification of Companies for Fusion Welding of Steel Structures” or CSA Standard W47.2-11 (Reaffirmed 2015), “Certification of Companies for Fusion Welding of Aluminium” or a standard offering equivalent or better protection.

70 *Section 275 of the Regulation is amended by adding after subsection (3) the following:*

Fire prevention measures

275(4) Clause 11.7 of CSA standard W117.2-12 (Reaffirmed 2017), “Safety in Welding, Cutting and Allied Process” or a standard offering equivalent or better protection shall be used as a guide to establish suitable fire extinguishing measures and other fire prevention measures.

71 *Subsection 279(2) of the Regulation is amended by striking out “toxic substances” and substituting “hazardous substances”.*

72 *The Regulation is amended by adding after section 279 the following:*

Hot tapping

279.1(1) Despite subsection 279(1), an employer who establishes a code of practice in accordance with subsection (2) may allow hot tapping to be undertaken on a pipe or equipment in service containing a flammable or explosive substance.

279.1(2) Before any hot tapping begins, an employer shall establish a code of practice that is specific to the type or class of hot tapping to be performed and is approved by an engineer.

279.1(3) A code of practice for hot tapping shall contain the following information:

- (a) a description of the hot tapping to be performed;
- (b) a description of any possible hazards that may affect the health or safety of employees;

- (c) the procedures to be followed and the equipment to be used when hot tapping; and
- (d) an emergency response procedure.

279.1(4) An employer shall ensure that

- (a) only competent employees are permitted to perform hot tapping,
- (b) the point in the pressure containing barrier to be hot tapped is checked and strong enough for the hot tapping to be performed safely,
- (c) there is sufficient working space at the location at which hot tapping will be performed,
- (d) exit routes are available and their locations are known by employees who perform the hot tapping,
- (e) employees wear appropriate personal protective equipment when hot tapping is performed,
- (f) material being supplied to the pipe or equipment being hot tapped can be shut off immediately in an emergency,
- (g) the hot tapping machine and accessories are of adequate design and capability for the process, conditions, pressure and temperature, and
- (h) the pressure in the pipe or equipment being hot tapped is as low as possible during the hot tapping.

73 *Section 286 of the Regulation is amended in the definition of “qualified person”*

- (a) *by striking out subparagraph (b)(i) and substituting the following:*

(i) a person who holds a certificate of qualification issued under the *Apprenticeship and Occupational Certification Act* for the distribution construction lineman trade, the powerline technician trade or the power system technicians trade, or

(b) in paragraph (c) by striking out “and” at the end of the paragraph;

(c) in paragraph (d) by striking out the period at the end of the paragraph and substituting “, and”;

(d) by adding after paragraph (d) the following:

(e) when applied to work referred to in paragraphs (a), (b), (c) and (d), a person who is

(i) qualified, because of such factors as knowledge, training and experience, to do assigned work in a manner that will ensure the health and safety of persons,

(ii) knowledgeable about the provisions of this Act and the regulations that apply to the assigned work, and

(iii) knowledgeable about the actual and potential dangers to health and safety associated with the assigned work.

74 The heading “Qualifications to work on energized electrical equipment, utility line or utility line equipment” preceding section 287 of the Regulation is repealed and the following is substituted:

Qualifications to work on energized electrical equipment, energized electrical utility line or utility line equipment

75 Section 287.1 of the Regulation is amended

(a) in subsection (1) by striking out “containing energized electrical equipment with exposed parts is marked with conspicuous warning signs” and substituting “containing an electrical hazard is marked with conspicuous warning signs, symbols or tags”;

(b) by repealing subsection (2) and substituting the following:

287.1(2) An employer shall ensure that no person enters or is permitted to enter a room or other enclosure containing electrical hazards unless the person is

(a) a qualified person, or

(b) an employee who enters the room or enclosure to complete a duty not involving the electrical equipment and the employee is instructed and trained in the hazards.

76 *Section 287.3 of the Regulation is repealed and the following is substituted:*

287.3(1) An employer shall ensure that electrical equipment has a means of isolating its energy source and the energy source is

(a) lockable,

(b) situated in a location that is familiar to all employees, and

(c) properly identified.

287.3(2) An employer shall provide a safety lock and key to a qualified person who may be required to lock out the electrical equipment.

287.3(3) An employer shall establish a written lock out procedure for electrical equipment and ensure that a qualified person who may be required to lock out the electrical equipment is adequately instructed and trained to lock out the electrical equipment.

287.3(4) An employer shall ensure that before a qualified person works on electrical equipment

- (a) the qualified person places the electrical equipment in an electrically safe work condition, and
- (b) each qualified person who will be working on the electrical equipment
 - (i) verifies that the electrical equipment is in an electrically safe work condition,
 - (ii) locks out the electrical equipment using the safety lock and key provided by the employer, and
 - (iii) puts a non-conductive tag on the safety lock that contains
 - (A) words directing persons not to start or operate the electrical equipment,
 - (B) the qualified person's printed name and signature, and
 - (C) the date and time when the tag was put on the electrical equipment.

287.3(5) Before working on electrical equipment, a qualified person shall verify that the requirements set out in subsection (4) have been complied with.

287.3(6) No person shall remove a safety lock or tag on electrical equipment except

- (a) the person who installed the safety lock or tag, or
- (b) in an emergency or when attempts are made to contact the person referred to in paragraph (a) and the person is not available, a qualified person designated by the employer.

77 *Section 287.4 of the Regulation is repealed and the following is substituted:*

287.4(1) When the circumstances do not permit electrical equipment to be placed in an electrically safe work condition before working on or near energized exposed parts of the electrical equipment, an employer shall ensure the work is carried out by a qualified person and the employer and qualified person shall each ensure that a written code of practice is established in accordance with section 287.41.

287.4(2) An employer and a qualified person shall each ensure that all testing and troubleshooting of electrical equipment is conducted in an electrically safe work condition.

287.4(3) An employer and a qualified person shall each ensure that the instruments, equipment and accessories used to test and troubleshoot electrical equipment are in good working condition and are rated for the circuits and electrical equipment to be worked on.

78 *The Regulation is amended by adding after section 287.4 the following:*

Code of practice

287.41(1) A code of practice for work on or near energized exposed parts of electrical equipment shall contain the following information:

- (a) clearly established responsibilities and accountabilities for each person who may be exposed to electrical hazards by inadvertently touching the electrical equipment or approaching it closer than a safe distance;
- (b) a description of the work to be performed, the circuit and electrical equipment to be worked on, their location and the electrical hazards and other associated risks;
- (c) a justification for why the work needs to be performed in an energized condition;
- (d) the safe work procedures to be followed;

- (e) the voltage to which employees will be exposed;
- (f) a description of the personal protective equipment and other protective equipment to be used; and
- (g) a description of the means employed to restrict the access of unqualified persons to the work area.

287.41(2) An employer shall use CSA Standard Z462-15, “Workplace Electrical Safety” or a standard offering equivalent or better protection as a guide for the selection of personal protective equipment and other protective equipment that employees are required to use.

287.41(3) At a meeting held immediately before commencing work on or near energized exposed parts of electrical equipment, an employer or a contractor shall inform the employees involved in the work of the content of the code of practice and the supervisor shall document the meeting.

287.41(4) The meeting shall be repeated whenever there is a change in the employees or the equipment involved in the work.

287.41(5) An employer shall ensure that a copy of the code of practice is readily available to employees.

287.41(6) An employee shall comply with the code of practice and an employer shall ensure that employees comply with the code of practice.

79 *Section 287.5 of the Regulation is amended*

- (a) *by renumbering the section as subsection 287.5(1);*
- (b) *by adding after subsection (1) the following:*

287.5(2) Despite paragraph (1)(b), an employer is not required to ensure that main service switches and temporary panel boards of elevators, dumbwaiters, materials lifts, escalators, lifts for persons with physical disabilities and passenger ropeways are kept clear of any obstructions for one metre in front and two metres headroom.

80 *Section 287.6 of the Regulation is repealed and the following is substituted:*

287.6 An employer shall ensure that electrical equipment that is no longer in use is de-energized and, if the electrical equipment is left in place, is locked out or effectively grounded and is tagged as no longer in use and its conductors are disconnected or removed.

81 *Subsection 304(2) of the Regulation is repealed and the following is substituted:*

304(2) An employer shall ensure that a diver is trained to the minimum level as set out in subsection 8(2) of New Brunswick Regulation 2004–130 under this Act and holds a valid certificate issued by an agency referred to in subsection 8(3) of that Regulation in respect of that training.

82 *Paragraph 325e) of the French version of the Regulation is amended by striking out “contenants de gaz comprimé portatifs” and substituting “contenants portatifs de gaz comprimé”.*

83 *The Regulation is amended by adding after 342 the following:*

PART XX.1**LABORATORY SAFETY****Application**

342.1 This Part applies to rooms, buildings and areas in buildings equipped with apparatus, equipment, chemicals or test animals and used for quality control, research or photographic development, conducting tests and experiments or preparing drugs or other products in the natural sciences.

Definitions

342.11 The following definitions apply in this Part.

“laboratory fume hood” means an enclosed and mechanically ventilated workspace that is located in a laboratory and is designed

- (a) to draw air into the workspace and to prevent or minimize the escape of air contaminants out of the workspace, and
- (b) to allow an employee to conduct physical, chemical and biological manipulations inside the workspace. (*hotte de laboratoire*)

“operational face opening” means an opening in a laboratory fume hood through which an employee may conduct work inside the hood. (*ouverture frontale opérationnelle*)

“sash” means a vertical or horizontal panel on a laboratory fume hood that defines the operational face opening and provides a protective barrier between the employee conducting work inside the hood and the contents of the hood. (*fenêtre coulissante*)

Laboratory Fume Hoods

Compliance with CSA standard

342.2(1) An employer shall ensure that a laboratory fume hood installed on or after the commencement of this section, is selected, used, tested and maintained in accordance with CSA Standard Z316.5-15 “Fume Hoods and Associated Exhaust Systems” or a standard offering equivalent or better protection.

342.2(2) An employer shall ensure that a laboratory fume hood installed before the commencement of this section meets the requirements of Clause 9.3 of CSA Standard Z316.5-15 “Fume Hoods and Associated Exhaust Systems” or a standard offering equivalent or better protection.

Face velocities

342.21 An employer shall ensure that a laboratory fume hood

- (a) is connected to a local exhaust ventilation system,
- (b) has an average face velocity of 0.4 m/s to 0.6 m/s across its operational face opening,
- (c) does not have a face velocity of less than 80% of the average face velocity required under paragraph (b) at any point across its operational face opening, and
- (d) does not have a face velocity of more than 120% of the average face velocity required under paragraph (b) at any point across its operational face opening.

Sash

342.3 An employer shall ensure that a laboratory fume hood has a sash that is positioned to protect the upper body and face of an employee working in the laboratory fume hood from

accidental releases of the contents of the hood while allowing hand and arm access to equipment inside the hood.

Operational face opening

342.31 An employer shall ensure that a laboratory fume hood with a sash is clearly marked to identify the minimum and maximum size of its operational face opening.

Testing

342.4(1) An employer shall ensure that

- (a) following installation and before it is first used, a commercially manufactured laboratory fume hood has been certified as being tested by the manufacturer, and
- (b) following installation and before it is first used, a custom-built laboratory fume hood is tested on site by a competent person.

342.4(2) A laboratory fume hood tested under subsection (1) shall demonstrate containment not greater than the control level of 0.05 ppm when tested under "as manufactured" test conditions in accordance with the methods described in ANSI/ASHRAE Standard 110-1995, "Method of Testing Performance of Laboratory Fume Hoods" or a standard offering equivalent or better protection.

Requirements

342.41 An employer shall ensure that

- (a) the installation of a laboratory fume hood is certified by an engineer,

(b) a laboratory fume hood is placed in such a way as to prevent cross drafts or other disruptive forces from lowering the face velocity across its operational face opening to unacceptable levels, and

(c) a laboratory fume hood and its ductwork are constructed from materials compatible with their use.

Safety procedures

342.5 An employer shall ensure that safety procedures are established and employees are adequately instructed and trained in the safe use and operation of a laboratory fume hood.

Use of laboratory fume hoods

342.51(1) An employer shall ensure that a laboratory fume hood that is or will be used for working with the following is clearly labelled with the applicable restrictions on its use:

- (a) radioactive material in amounts that exceed the exemption quantity specified by the Canadian Nuclear Safety Commission; or
- (b) perchloric acid.

342.51(2) An employer shall ensure that a laboratory fume hood is not used for storage of chemicals unless it is used exclusively for this purpose and is labelled with this limitation.

Perchloric Acid

342.6 An employer shall ensure that

- (a) perchloric acid is used in a laboratory fume hood designed exclusively for its use,
- (b) signs are posted outside the laboratory fume hood indicating

- (i) that the fume hood is designed for perchloric acid use, and
 - (ii) the use or storage of combustibles in the laboratory fume hood is prohibited,
- (c) the exhaust ducts of a laboratory fume hood are as short as possible, routed directly outdoors with no interconnections to other exhaust ducts and equipped with washdown facilities,
- (d) containers of perchloric acid are stored in such a manner that, in the event of a leak, the spilled acid will not come in contact with flammable materials, wood or similar combustible materials,
- (e) the stored perchloric acid is inspected at least once a month and, if any discoloration is noted, the perchloric acid is disposed of immediately in a safe manner, and
- (f) anhydrous perchloric acid is used only if it is freshly made and any unused anhydrous perchloric acid is disposed of in a safe manner either at the end of the experiment or procedure or the end of the day, whichever occurs first.

Controls

342.61 An employer shall ensure that the controls used to operate a laboratory fume hood and its service fixtures are located on the outside of the laboratory fume hood and within reach of an employee conducting work in the laboratory fume hood.

Water taps

342.7 Despite section 342.61, water taps may be located inside a laboratory fume hood if the main shutoff valve for the water is located outside the laboratory fume hood.

Equipment

342.71 An employer shall ensure that the equipment used in a laboratory fume hood is kept at least 15 cm from the operational face opening and is not adversely affecting airflow in the laboratory fume hood.

Airflow and containment monitoring

342.8(1) An employer shall ensure that the face velocities across the operational face opening of a laboratory fume hood are quantitatively measured and the results of the measurement are documented.

342.8(2) An employer shall ensure that the capability of a laboratory fume hood to contain air contaminants and maintain an inward flow of air across its operational face opening is assessed using a smoke tube or any other appropriate qualitative method and the results of the assessment are documented.

342.8(3) An employer shall ensure that the measurements and assessments referred to in subsections (1) and (2) are performed

- (a) after the laboratory fume hood is installed and before it is first used,
- (b) at least once in each 12-month period after installation, and
- (c) after any repair or maintenance that could affect the face velocity across the operational face opening of the laboratory fume hood.

342.8(4) An employer shall ensure that airflow in a laboratory fume hood is monitored continuously if loss of airflow will result in risk to the health or safety of an employee.

342.8(5) An employer shall ensure that a laboratory fume hood is equipped with an alarm capable of indicating when the average face velocity falls below the minimum average face velocity required in paragraph 342.21(b) when the laboratory fume hood is in use.

Manifolded exhaust system

342.81(1) Laboratory fume hoods located in the same room or separate rooms may be connected to a manifolded exhaust system if the following conditions are satisfied:

- (a) the requirements of section 5.3.2 of ANSI/AIHA Standard Z9.5-2003, “Laboratory Ventilation” or a standard offering equivalent or better protection are met;
- (b) hazard control measures are installed to prevent backdrafts and pressure imbalances between rooms; and
- (c) the ventilation design and installation of the manifolded exhaust system are certified by an engineer.

342.81(2) Despite subsection (1), an employer shall ensure that laboratory fume hoods that are or will be used for working with the following are not connected to a manifolded exhaust system:

- (a) radioactive materials in amounts that exceed the exemption quantity specified by the Canadian Nuclear Safety Commission; or
- (b) perchloric acid.

Ducting

342.82 An employer shall ensure that ducting used in the installation of a laboratory fume hood is designed in accordance with good engineering practices.

Laboratory Equipment

Biological safety cabinets

342.83(1) An employer shall ensure that the limitations of a biological safety cabinet are clearly posted on the cabinet and followed by employees.

342.83(2) An employer shall ensure that biological safety cabinets are certified by a competent person

- (a) at least once a year, and
- (b) before they are used following:
 - (i) the initial installation;
 - (ii) a change of the HEPA (high efficiency particulate air) filter;
 - (iii) the moving of the cabinet; and
 - (iv) any repair or maintenance that could affect the seal of the HEPA (high efficiency particulate air) filter.

342.83(3) An employer shall ensure that

- (a) the certification procedures used by a competent person under subsection (2) meet the requirements of NSF/ANSI Standard 49-2002, "Class II (Laminar Flow) Biosafety Cabinetry" or a standard offering equivalent or better protection, and
- (b) the certification records are maintained and made available to an officer on request.

342.83(4) Recirculation of exhaust air into a work area from a biological safety cabinet is not permitted when volatile toxic materials or flammable liquids or gases are used in the

cabinet, or when volatile radioactive materials are used in amounts that exceed the exemption quantity specified by the Canadian Nuclear Safety Commission.

342.83(5) Biological safety cabinets used for handling biological agents shall be operated and ventilated in accordance with the “Laboratory Biosafety Guidelines” issued and amended from time to time by Health Canada or a standard offering equivalent or better protection.

Centrifuges

342.84(1) An employer shall ensure that

- (a) the centrifuge loads are balanced by sample distribution in accordance with manufacturer specifications,
- (b) the centrifuge is equipped with aerosol-proof safety heads or cups or other equally effective means to prevent employees from being exposed to biohazardous aerosols, carcinogens and radioactive samples,
- (c) subject to subsection (2) and unless exempted by CSA Standard C22.2 No. 151-M1986 (Reaffirmed 2004), “Laboratory Equipment” or a standard offering equivalent or better protection, the centrifuge doors are interlocked to prevent employees from accessing spinning rotors,
- (d) the interlock referred to in paragraph (c) prevents the centrifuge door from opening while the rotor is spinning or causes the rotor to break if the door is opened, or another equally effective means is used to prevent employees from accessing the spinning rotor, and
- (e) the rotors are stored in a manner which prevents them from being damaged.

342.84(2) An employer who purchases a centrifuge before the commencement of this section is not required to ensure that the centrifuge doors are interlocked to prevent employees accessing spinning rotors.

General

Safety procedures – hazardous response

342.85 An employer shall ensure that

- (a) written safe work procedures for hazardous operations, including spill response, are established,
- (b) employees are adequately instructed and trained in the safe work procedures for hazardous operations, and
- (c) employees follow the safe work procedures for hazardous operations.

Fire protection

342.86 An employer shall ensure that suitable fire extinguishers are accessible at all times in a laboratory where flammable substances are used or stored.

Movement of containers

342.87 An employer shall ensure that a container of hazardous substances that is moved within a laboratory is moved in a manner that does not damage the container.

Personal protection

342.88 An employer shall ensure that

- (a) protective clothing worn in a laboratory in which hazardous substances are handled is not worn outside the work area and is not stored in a manner or location in which employees may be exposed to the hazardous substances,
- (b) eating and drinking are not permitted in the laboratory,
- (c) food is not kept in the laboratory, except as required for testing,
- (d) laboratory glassware, vessels and containers are not used to prepare or store food or beverages for consumption, and
- (e) hazardous substances are not pipetted by mouth.

Picric Acid

342.89 An employer shall ensure that

- (a) solid picric acid is stored with at least 10% moisture content,
- (b) regular inspections are conducted to ensure that the minimum moisture content is maintained,
- (c) picric acid solution does not accumulate and dry around cap threads, and
- (d) picric acid that is suspected of being in an unacceptable condition is safely handled and disposed of by a competent employee.

Peroxide-forming compounds

342.9 An employer shall ensure that

- (a) peroxide-forming compounds are inspected and tested for peroxides as required by the supplier after the container is first opened,
- (b) written records of the tests are maintained and provided to an officer on request, and
- (c) compounds contaminated with peroxide materials are disposed of by a competent employee or are treated chemically to eliminate the peroxides.

Cryogenic liquids

342.91 An employer shall ensure that

- (a) containers used for the storage, transportation and dispensing of cryogenic liquids are designed for that purpose,
- (b) indoor dispensing stations and storage locations for cryogenic liquids are adequately ventilated to prevent the development of harmful atmospheres,
- (c) monitoring is performed to ensure the effectiveness of the ventilation of indoor dispensing stations and storage locations for cryogenic liquids and the results are documented, and
- (d) signs are posted on indoor dispensing stations and freezers with automatic filling cycles for cryogenic liquids identifying the materials, the hazards and the precautions required.

Sharp materials

342.92 An employer shall ensure that

- (a) safe means of handling needles, knives, scissors, scalpels, broken glass and other sharp materials are used,
- (b) recapping of needles before disposal is not permitted unless the recapping device is specifically designed for single-handed use, or is otherwise safe for use, and
- (c) biohazard sharp puncture-resistant containers are used for the disposal of needles, knives, scissors, scalpels, broken glass and other sharp materials to prevent the possibility of cuts or puncture.

DRAFT
ÉBAUCHE