

Ontario Occupational Health and Safety Act

R.R.O. 1990, REGULATION 854

MINES AND MINING PLANTS

Consolidation Period: From February 14, 2014 to the [e-Laws currency date](#).

Last amendment: O. Reg. 34/14.

CONTENTS

	Sections
DEFINITIONS	1
PART I GENERAL	2-24
PART II FIRE PROTECTION	25-45
PART III ACCESS TO WORKPLACES	46-54
PART IV PROTECTION OF WORKERS	55-102
PART V HAULAGE	103-120
PART VI EXPLOSIVES	121-154
PART VII ELECTRICAL	155-180
PART VIII MECHANICAL	181-201
PART IX RAILROADS	202
PART X MINE HOISTING PLANT	203-250
PART XI WORKING ENVIRONMENT	251-293.1
Schedule First aid equipment	1-2

PART XI

WORKING ENVIRONMENT

In an underground mine, a mechanical ventilation system shall be provided, maintained and used that will,

- (a) provide a partial pressure of oxygen of more than eighteen kilopascals; and
- (b) except as provided by a regulation made in respect of a designated substance, dilute and remove contaminants from all workplaces therein to prevent exposure of a worker to contaminants in excess of the limits,
 - (i) prescribed under section 4 of Regulation 833 of the Revised Regulations of Ontario, 1990 (Control of Exposure to Biological or Chemical Agents), or

- (ii) if no limits are prescribed under the said section 4, adopted as criteria or guides under section 283 of this Regulation. R.R.O. 1990, Reg. 854, s. 253 (1); O. Reg. 272/97, s. 47; O. Reg. 496/09, s. 3.

(2) Accurate plans and records of a mechanical ventilation system in an underground mine shall be kept and maintained showing,

- (a) the location of all ventilation fans;
- (b) the volumes of air in cubic metres per second handled by the ventilation fans;
- (c) the fan operating gauge pressure;
- (d) the direction of flow of main ventilating airflows;
- (e) the location and function of all fire doors; and
- (f) the location and function of all ventilation doors, brattices, stoppings and regulators controlling airflows. R.R.O. 1990, Reg. 854, s. 253 (2).

254. (1) In an underground mine,

- (a) subject to clause (b), a development, exploration or production workplace shall be ventilated throughout by an auxiliary ventilation system for any advance in excess of sixty metres from a mechanical mine ventilation system; and
- (b) if Regulation 833 of the Revised Regulations of Ontario, 1990 (Control of Exposure to Biological or Chemical Agents) made under the Act applies, a continuous supply of fresh air shall be provided and used to dilute and remove contaminants in a raise, and in a sub-drift for any advance in excess of 10 metres from a mechanical mine ventilation system, to prevent exposure of a worker to contaminants in excess of,
 - (i) the limits prescribed under section 4 of Regulation 833 of the Revised Regulations of Ontario, 1990, or
 - (ii) if no limits are prescribed under section 4 of Regulation 833 of the Revised Regulations of Ontario, 1990, the limits adopted as criteria or guides under section 283 of this Regulation. R.R.O. 1990, Reg. 854, s. 254 (1); O. Reg. 272/97, s. 48; O. Reg. 496/09, s. 4.

(2) The fresh air supply prescribed by clause (1) (b) shall be,

- (a) independent of the air supplied by any drill or machine used;
- (b) controlled only at the beginning of the raise or sub-drift; and
- (c) operating when a blast is detonated. R.R.O. 1990, Reg. 854, s. 254 (2).

255. (1) An underground area that is not part of an underground mine ventilation system shall,

- (a) be effectively barricaded to prevent inadvertent entry;
- (b) be posted with signs to warn a person that entry is prohibited; and

(c) subject to subsection (3), be examined by a competent person before any other person enters or is permitted to enter the underground area. R.R.O. 1990, Reg. 854, s. 255 (1).

(2) The examination prescribed in clause (1) (c) shall consist of an examination for,

- (a) oxygen deficiency due to a partial pressure of oxygen in the atmosphere less than eighteen kilopascals;
- (b) the presence of a toxic gas, vapour, dust, mist or fume; and
- (c) any other dangerous condition. R.R.O. 1990, Reg. 854, s. 255 (2).

(3) Before a competent person examines the underground area he or she shall be provided with instructions in writing setting out,

- (a) the hazard involved;
- (b) the use of testing equipment required;
- (c) the personal protective devices he or she is required to use or wear; and
- (d) any other precautions and procedures to be taken for his or her protection. R.R.O. 1990, Reg. 854, s. 255 (3).

256. (1) Before material containing cyanide is used for back fill in an underground mine, an assessment shall be conducted to determine the precautions to be taken to protect the health and safety of workers. O. Reg. 272/97, s. 49.

(2) The assessment shall be done in consultation with the joint health and safety committee or the health and safety representative, if any. O. Reg. 272/97, s. 49.

257. In an underground mine, clean water under pressure shall be made available for dust control purposes in a workplace where rock or ore is drilled, blasted, loaded or transported. R.R.O. 1990, Reg. 854, s. 257.

258. In an underground mine, broken rock or ore shall be thoroughly wetted by water,

- (a) during blasting operations or immediately thereafter; and
- (b) when the ore or rock is being loaded or scraped. R.R.O. 1990, Reg. 854, s. 258.

259. Sections 257 and 258 do not apply at a salt mine or any other operation where the ore or rock is hygroscopic. R.R.O. 1990, Reg. 854, s. 259.

260. No person shall enter or remain, or be permitted to enter or remain, in a workplace affected by blasting contaminants until the ventilation system has removed the contaminants or rendered them harmless. R.R.O. 1990, Reg. 854, s. 260.

261. In an underground mine a battery-charging station shall be ventilated to prevent the accumulation of an explosive mixture of gases. R.R.O. 1990, Reg. 854, s. 261.

262. (1) Effective illumination by means of stationary lighting shall be provided in an underground mine,

- (a) at all active shaft stations and shaft conveyance landings where workers are required to travel or work; and
- (b) where the nature of the equipment or the operation may create a hazard due to insufficient illumination. R.R.O. 1990, Reg. 854, s. 262.

(2) Every worker in an underground mine shall wear retroreflective material on headgear and outer clothing. O. Reg. 174/01, s. 7.

263. (1) Effective illumination appropriate for the task shall be provided at all workplaces on the surface, including,

- (a) in those areas adjacent to the workplace where workers are required to travel; and
- (b) in those circumstances where the nature of the equipment or the operation may create a hazard to a worker due to insufficient lighting. O. Reg. 174/01, s. 8.

(2) Subject to subsection (3), between sunset and sunrise, every worker shall wear retroreflective material on headgear and outer clothing that enables the worker to be seen. O. Reg. 291/02, s. 8.

(3) A worker is not required to comply with subsection (2) if the worker is in a booth, vehicle cab or another protective enclosure or if a work area is provided with fixed lighting that enables the worker to be seen. O. Reg. 291/02, s. 8.

264. In a workplace in a building which is solely dependent on artificial lighting and where a failure of the regular lighting system would create conditions that might endanger the safety of any person in the building, emergency lighting shall be provided which,

- (a) turns on automatically when the regular lighting fails;
- (b) is independent of the regular lighting source;
- (c) provides adequate lighting for evacuation of the building; and
- (d) shall be tested as frequently as necessary to ensure the system will function in an emergency but not less frequently than recommended by the manufacturer. R.R.O. 1990, Reg. 854, s. 264.

265. An air supplied respirator that provides compressed air for breathing purposes shall comply with CSA Standard Z180.1-00, "Compressed Breathing Air and Systems". O. Reg. 84/07, s. 17.

266. Where dust or other material is likely to cause a hazard by becoming airborne, the dust, or other material, shall be removed with a minimum of delay by,

- (a) vacuuming;
- (b) wet sweeping;
- (c) wet shovelling; or

(d) other suitable means. R.R.O. 1990, Reg. 854, s. 266.

267. (1) An annual survey of potentially hazardous minor elements shall be conducted on all feed streams to and concentrates coming from a mining plant. R.R.O. 1990, Reg. 854, s. 267 (1).

(2) An assessment shall be made of the potential hazard from the elements detected in the survey required by subsection (1) due to the processes used in the mining plant. R.R.O. 1990, Reg. 854, s. 267 (2).

(3) Workplaces in the mining plant shall be monitored for the hazardous elements and compounds revealed by the assessment required by subsection (2). R.R.O. 1990, Reg. 854, s. 267 (3).

(4) The results of the survey, the assessment and description and results of the monitoring program shall be reported annually to the joint health and safety committee or health and safety representative, if any. O. Reg. 272/97, s. 50.

(5) This section does not apply to a mining plant at a gravel pit or quarry. R.R.O. 1990, Reg. 854, s. 267 (5).

268. An annual survey of use by mass of potentially hazardous chemical reagents shall be made in a mining plant. R.R.O. 1990, Reg. 854, s. 268.

269. Where a potentially hazardous chemical reagent has caused a medical or compensable injury,

(a) an annual record shall be maintained for the reagent,

(i) specifying its trade name and chemical composition, and

(ii) identifying all possible toxic chemical elements and compounds of the reagent;

(b) a record of the injury caused by the reagent shall be kept. R.R.O. 1990, Reg. 854, s. 269.

270. A copy of the records and the surveys required under sections 267, 268 and 269 shall be sent to the joint health and safety committee or health and safety representative, if any, annually. O. Reg. 272/97, s. 51.

271.-275. Revoked: O. Reg. 630/05, s. 2.

276. (1) Subject to subsections (3), (4) and (5), toilets and wash-basins in a mining plant shall be provided in accordance with the following Table:

TABLE

Number of Workers	Number of facilities	
	Toilets	Washbasins
1 to 9	1	1
10 to 24	2	2
25 to 49	3	3
50 to 74	4	4
75 to 100	5	5

Add one toilet and one washbasin for each additional thirty workers or fraction thereof.		
--	--	--

R.R.O. 1990, Reg. 854, s. 276 (1).

(2) In a washroom,

- (a) a toilet shall be enclosed by walls or partitions and a door that is capable of being locked from the inside to provide privacy to a person using the toilet;
- (b) hot and cold water shall be supplied to each washbasin;
- (c) ventilation to the outdoors capable of providing ten changes of air per hour shall be provided;
- (d) a reasonable supply of personal hygiene supplies and equipment shall be provided,

and where separate washrooms are provided for each sex, a legible sign indicating the sex by which the washroom is to be used shall be posted at the door. R.R.O. 1990, Reg. 854, s. 276 (2).

(3) In calculating the number of toilets and washbasins required by the Table in subsection (1), the number of workers in the Table in subsection (1) shall be that number of workers who are normally present on the premises for more than 25 per cent of their working shift. R.R.O. 1990, Reg. 854, s. 276 (3).

(4) Urinals may be substituted for one-half of the required number of toilets for males and for this purpose each 600 millimetres of straight trough urinal may be counted as one urinal. R.R.O. 1990, Reg. 854, s. 276 (4).

(5) For the purpose of this section, each 500 millimetres of circumference of a circular wash fountain or length of straight trough washbasin may be counted as one washbasin. R.R.O. 1990, Reg. 854, s. 276 (5).

(6) Water that is to be used for personal washing purposes shall not,

- (a) exceed 60° Celsius at any outlet; or
- (b) be directly mixed with steam. R.R.O. 1990, Reg. 854, s. 276 (6).

277. (1) Suitable sanitary conveniences must be provided at a mine in accordance with this section. O. Reg. 60/94, s. 14.

(2) If workers are employed in an underground mine, one toilet must be provided for each group of twenty-five workers or less employed on a shift. O. Reg. 60/94, s. 14.

(3) If workers are employed at a surface mine, one toilet and one urinal must be provided for each group of twenty-five workers or less employed on a shift. O. Reg. 60/94, s. 14.

(4) A toilet at a mine must meet the following requirements:

1. It must be the water-flushing type or of a sanitary design.
2. It must be located in an individual compartment that has a suitable floor and a door that can be locked.
3. It must be provided with clothes hooks.
4. It must be provided with a means for cleansing hands.
5. It must be supplied with toilet paper and, if any of the workers using it are women, with a means for disposing of feminine hygiene products.
6. If electricity is available, the toilet must be provided with lighting.
7. If electricity is available, the toilet must be provided with heating if the toilet is in a location that is colder than 10° Celsius or is in an area that is cold, damp and drafty. O. Reg. 60/94, s. 14.

(5) A toilet in an underground mine must be located in a well-ventilated part of the mine and must be conveniently placed having regard to the number of workers employed on the different levels of the mine. O. Reg. 60/94, s. 14.

(6) A toilet at a mine must be provided with disinfectant and cleansers and must be cleaned and maintained as often as is required to keep it sanitary and at least once a week. O. Reg. 60/94, s. 14.

(7) The waste from a toilet at a surface mine must be disposed of on a regular basis. O. Reg. 60/94, s. 14.

(8) The waste from a toilet in an underground mine must on a regular basis be removed, placed in a sturdy leak-proof container and brought to the surface for disposal. O. Reg. 60/94, s. 14.

(9) Despite subsection (8), the employer may use a different hygienic underground disposal system for wastes from a toilet in an underground mine with the agreement of the joint health and safety committee or the health and safety representative, if any, for the workplace. O. Reg. 60/94, s. 14.

278. (1) Suitable and adequate facilities to wash and shower and to change and dry their clothing shall be provided for workers,

- (a) at an underground mine; and
- (b) at a surface mine, where the workers are subject to dusty, dirty or wet conditions. R.R.O. 1990, Reg. 854, s. 278 (1).

(2) At an underground mine, the facilities required by subsection (1) shall be located,

- (a) when above ground, near the principal entrance of the mine;
- (b) unless of non-combustible construction, not nearer than fifteen metres to a shafthouse or portal house; and
- (c) not in a hoistroom or boilerhouse, unless a separate, properly constructed room is provided. R.R.O. 1990, Reg. 854, s. 278 (2).

(3) At a surface mine, where the facilities required by subsection (1) are located at a considerable distance from the place of work, adequate transportation to the facilities from the workplace shall be provided to the workers in inclement weather. R.R.O. 1990, Reg. 854, s. 278 (3).

(4) Where practical, protection from the elements between the shaft entrance and the change rooms shall be provided. R.R.O. 1990, Reg. 854, s. 278 (4).

279. Where the clothing of a worker is likely to be contaminated by a biological or chemical agent that may be a hazard to health suitable facilities shall be provided for,

- (a) laundering work clothing; and
- (b) keeping work clothes separate from street clothes. R.R.O. 1990, Reg. 854, s. 279.

280. (1) Cool potable drinking water shall be provided in mining plants,

- (a) from,
 - (i) a fountain with an upward jet, or
 - (ii) a tap from a piped water supply or a covered vessel, together with a supply of single-use cups in a sanitary container located near the tap;
- (b) on every floor where work is regularly performed; and
- (c) within 100 metres of any area where work is regularly performed. R.R.O. 1990, Reg. 854, s. 280 (1).

(2) In underground mines cool potable drinking water shall be provided at locations that,

- (a) are reasonably accessible to a worker; and
- (b) shall be kept in a clean and sanitary condition. R.R.O. 1990, Reg. 854, s. 280 (2).

(3) The employer shall ensure that all potable drinking water in a mine or mining plant complies with,

- (a) Ontario Regulation 169/03 (Ontario Drinking Water Quality Standards) made under the *Safe Drinking Water Act, 2002*; or
- (b) the regulations governing pre-packaged water made under the *Food and Drugs Act* (Canada). O. Reg. 291/02, s. 9; O. Reg. 34/14, s. 19.

281. (1) Where fifteen or more persons congregate to eat, a lunchroom shall be provided which,

- (a) is of sufficient size to accommodate all the persons therein;
- (b) is heated, lighted and ventilated;
- (c) has hand washing and drying facilities;
- (d) has hot and cold water;

- (e) has facilities for warming of food;
- (f) has suitable seating facilities; and
- (g) has a non-combustible, covered receptacle for waste disposal. R.R.O. 1990, Reg. 854, s. 281 (1).

(2) An employer shall ensure that all workers have access to an eating area with,

- (a) hand cleaning facilities;
- (b) potable water;
- (c) suitable seating facilities;
- (d) lighting;
- (e) ventilation;
- (f) facilities to keep food from freezing;
- (g) heating, if working conditions are wet or cold or both; and
- (h) a fire retardant receptacle for waste disposal. O. Reg. 571/92, s. 21.

(3) All lunchrooms and eating areas shall be kept sanitary, clean and dry. R.R.O. 1990, Reg. 854, s. 281 (3).

281.1 (1) Every employer shall equip and maintain a first aid room close to the entrance of an underground mine. O. Reg. 583/91, s. 6.

(2) A first aid room shall be equipped with at least the items listed in the Schedule. O. Reg. 583/91, s. 6.

(3) A first aid room shall be in the charge of a person,

- (a) who is certified in Advanced St. John Ambulance First Aid and in cardio-pulmonary resuscitation or who holds an equivalent qualification;
- (b) who is readily available; and
- (c) who does not perform other work of a nature that is likely to adversely affect the person's availability to administer first aid. O. Reg. 583/91, s. 6.

281.2 (1) Every employer shall ensure that a person trained in extrication and in rescue methods and equipment pertinent to underground mines is readily available. O. Reg. 583/91, s. 6.

(2) An employer shall keep at a location near a work area in an underground mine,

- (a) equipment enabling voice communication with the surface;
- (b) a basket stretcher with a spine board and stretcher straps and ropes for lowering and hoisting the basket stretcher;
- (c) two blankets, six triangular bandages and three pressure dressings, all of which are sealed in a container that keeps them clean, dry and serviceable;

(d) a splint; and

(e) a cervical collar. O. Reg. 583/91, s. 6.

(3) An employer shall consult with the joint health and safety committee or the health and safety representative or, if there is no committee or representative, with the workers to determine what equipment is necessary to rescue injured workers. O. Reg. 583/91, s. 6.

(4) An employer shall keep the equipment determined under subsection (3) to be necessary and a list of the equipment at suitable locations at an underground mine. O. Reg. 583/91, s. 6.

281.3 (1) An employer shall ensure that all first aid and rescue equipment is inspected at regular intervals as determined by the employer in consultation with the joint health and safety committee or the health and safety representative or, if there is no committee or representative, with the workers. O. Reg. 583/91, s. 6.

(2) An employer shall keep a record of all inspections of first aid and rescue equipment. O. Reg. 583/91, s. 6.

282. (1) Revoked: O. Reg. 583/91, s. 7.

(2) At every mining plant where poisonous or dangerous compounds, solutions or gases are present, there shall be kept or installed in a conspicuous place, as near the compounds, solutions or gases as is practical,

(a) antidotes and washes;

(b) eye wash fountains; and

(c) where necessary, showers for treating injuries received from such compounds, solutions or gases. R.R.O. 1990, Reg. 854, s. 282 (2).

(3) Antidotes and washes required under subsection (2) shall be properly labelled and explicit directions for their use shall be affixed to the boxes containing them. R.R.O. 1990, Reg. 854, s. 282 (3).

283. As a factor to be considered under clause 33 (8) (f) of the Act, the threshold limit values for chemical substances and physical agents set out in "TLVs Threshold Limit Values and Biological Exposure Indices for 1986-87" issued by the American Conference of Governmental Industrial Hygienists are adopted as criteria or guides. R.R.O. 1990, Reg. 854, s. 283.

284. Revoked: O. Reg. 272/97, s. 52.

285. Where a box, drum or other container contains a biological or chemical agent which is likely to affect the health or safety of a worker, the box, drum or other container shall be labelled in clear legible print to identify the agent and the label shall state the precautions to be taken in the handling, use, storage and disposal of the agent. R.R.O. 1990, Reg. 854, s. 285.

286. (1) If Regulation 833 of the Revised Regulations of Ontario, 1990 (Control of Exposure to Biological or Chemical Agents) made under the Act applies and a local exhaust ventilation system recirculates air to the workplace, provision

shall be made for a make-up air supply system having sufficient volume to keep any contaminants below,

- (a) the limits prescribed under section 4 of Regulation 833 of the Revised Regulations of Ontario, 1990; or
- (b) if no limits are prescribed under section 4 of Regulation 833 of the Revised Regulations of Ontario, 1990, the limits adopted as criteria or guides under section 283 of this Regulation. O. Reg. 496/09, s. 5.

(2) The contaminant level in the recirculated air shall not exceed 20 per cent of the limits described in subsection (1). O. Reg. 496/09, s. 5.

287. In sections 288 to 293,

“radon daughters” means polonium-218 (RaA), lead-214 (RaB), bismuth-214 (RaC) and polonium-214 (RaC’); (“produits de filiation du radon”)

“WL” means working level of radon daughters as determined in accordance with subsection 288 (1); (“unité alpha”)

“WLM” means working level month of radon daughters as determined in accordance with subsection 288 (2). (“unité alpha-mois”) O. Reg. 583/91, s. 8.

288. (1) One working level of radon daughters is the amount of any combination of radon daughters in one litre of air that will release 1.3×10^5 mega electron volts of alpha particle energy during their radioactive decay to lead-210 (RaD). O. Reg. 583/91, s. 8.

(2) One working level month of radon daughters is the amount of a person’s exposure to radon daughters resulting from breathing air that contains one WL for a period of 170 hours. O. Reg. 583/91, s. 8.

289. (1) Samples of air to which workers may be exposed in an underground mine shall be tested for the presence of radon daughters by a competent person. O. Reg. 583/91, s. 8.

(2) The air to which workers may be exposed in an underground mine shall be tested,

- (a) before work begins in a mine that is being reopened; and
- (b) within six months after the commencement of excavation of a new mine. O. Reg. 583/91, s. 8.

(3) The air to which workers may be exposed in an underground mine shall be retested,

- (a) at least monthly, if the concentration of radon daughters in a sample exceeds 0.1 WL; and
- (b) at least quarterly, if the concentration of radon daughters in a sample is greater than 0.06 WL up to and including 0.1 WL. O. Reg. 583/91, s. 8.

(4) If the concentration of radon daughters in a sample is less than or equal to 0.06 WL, a competent person shall assess once a year whether to retest the air

in the work area in the underground mine and in making the assessment shall consider previous test results and changes in the mine or its operations. O. Reg. 583/91, s. 8.

(5) An employer shall keep a record of the results of all tests of samples of air in an underground mine and shall give a copy of all results to the joint health and safety committee or the health and safety representative, if any. O. Reg. 583/91, s. 8.

(6) An employer shall post the results of all testing in a place where they are likely to come to the attention of workers as soon as the results become available and shall keep them posted for at least fourteen days. O. Reg. 583/91, s. 8.

(7) Samples of air in an underground mine shall be tested for the presence of radon daughters by a competent person within one year after the date that this section comes into force. O. Reg. 583/91, s. 8.

(8) Subsection (7) does not apply with respect to an underground mine if in a previous test the concentration of radon daughters was less than or equal to 0.06 WL, if a competent person considers that a test is not necessary in the circumstances, having assessed previous test results and changes in the mine or its operations. O. Reg. 583/91, s. 8.

290. (1) Every employer shall ensure that the airborne concentration of radon daughters to which workers may be exposed in an underground mine is reduced to the lowest practical level in accordance with good industrial hygiene practice. O. Reg. 583/91, s. 8.

(2) An employer shall ensure that no worker who is continuously employed by the employer during a year inhales air which exposes the worker to more than one WLM. O. Reg. 583/91, s. 8.

291. If the concentration of radon daughters to which a worker may be exposed in an underground mine exceeds 0.33 WL, the employer,

- (a) shall immediately remove all workers from the affected area of the mine;
- (b) shall give written notice of the occurrence to the joint health and safety committee or health and safety representative, if any;
- (c) shall implement the measures and procedures required by subsection 255 (1);
- (d) shall provide the written instructions required by subsection 255 (3) to all workers assigned to do remedial work; and
- (e) shall provide to workers doing remedial work and require the use of respiratory equipment appropriate to prevent or limit the workers' exposure to radon daughters. O. Reg. 583/91, s. 8; O. Reg. 272/97, s. 53.

292. (1) An employer shall develop and implement in consultation with the joint health and safety committee or the health and safety representative, if any, a written description of work practices for a workplace at which the airborne

concentration of radon daughters exceeds 0.1 WL. O. Reg. 583/91, s. 8; O. Reg. 291/02, s. 10 (1).

(2) The written description of work practices shall include procedures for investigating the cause of and reducing the level of the airborne concentration of radon daughters to the lowest practical level in accordance with good industrial hygiene practice. O. Reg. 583/91, s. 8; O. Reg. 291/02, s. 10 (2).

(3) An employer shall post the written description of work practices in a place where it is likely to come to the attention of all workers who may be affected by exposure to radon daughters. O. Reg. 583/91, s. 8; O. Reg. 291/02, s. 10 (3).

(4) Revoked: O. Reg. 272/97, s. 54.

293. (1) This section applies with respect to a workplace where a written description of work practices referred to in section 292 has been implemented. O. Reg. 583/91, s. 8; O. Reg. 291/02, s. 11.

(2) An employer shall train workers in radiation hazards and protection practices. O. Reg. 583/91, s. 8.

(3) An employer shall calculate in WLMs the annual cumulative level of exposure of a worker who is exposed to an average concentration of radon daughters greater than 0.1 WL over a period of eight hours. O. Reg. 583/91, s. 8.

(4) An employer shall keep a record of the information calculated under subsection (3) and shall give a copy of the record,

(a) to the worker or the next of kin or personal representative of a deceased worker, on receipt of a written request; and

(b) to the joint health and safety committee or the health and safety representative, if any. O. Reg. 583/91, s. 8.

(5) An employer shall forward a copy of a record kept under subsection (4) to the National Dose Register established under the *Atomic Energy Control Act* (Canada). O. Reg. 583/91, s. 8.

293.1 (1) In this section,

“dBA” means a measure of sound level in decibels using a reference sound pressure of 20 micropascals when measured on the A-weighting network of a sound level meter; (“dBA”)

“decibel” means a unit of measurement of sound pressure level that is equal to 20 times the logarithm to the base 10 of the ratio of the pressure of a sound, divided by the reference pressure of 20 micropascals; (“décibel”)

“equivalent sound exposure level” is the steady sound level in dBA which, if present in a workplace for eight hours in a day, would contain the same total energy as that generated by the actual and varying sound levels to which a worker is exposed in his or her total work day, determined in accordance with the formula set out in subsection (2). (“niveau d’exposition sonore équivalent”) O. Reg. 296/11, s. 20.

(2) The formula for determining the equivalent sound exposure level is as follows:

$$L_{ex,8} = 10 \log_{10} \left(\frac{\left[\sum_{i=1}^n (t_i \times 10^{0.1SPL_i}) \right]}{8} \right)$$

Text alternative: Image of the mathematical equation for determining the equivalent sound exposure level over eight hours that contains the same total energy as that generated by the actual and varying sound levels to which a worker is exposed in his or her total work day. This text alternative is provided for convenience only and does not form part of the official law.

where,

$L_{ex,8}$ is the equivalent sound exposure level in 8 hours,

Σ is the sum of the values in the enclosed expression for all activities from $i = 1$ to $i = n$,

i is a discrete activity of a worker exposed to a sound level,

t_i is the duration in hours of i ,

SPL_i is the sound level of i in dBA,

n is the total number of discrete activities in the worker's total workday.

O. Reg. 296/11, s. 20.

(3) Every employer shall take all measures reasonably necessary in the circumstances to protect workers from exposure to hazardous sound levels. O. Reg. 296/11, s. 20.

(4) The protective measures shall include the provision and use of engineering controls, work practices and, subject to subsection (7), personal protective equipment. O. Reg. 296/11, s. 20.

(5) Any measurement of sound levels in the workplace that is done in order to determine what protective measures are appropriate shall be done without regard to any use of personal protective equipment. O. Reg. 296/11, s. 20.

(6) Without limiting the generality of subsections (3) and (4), every employer shall ensure that no worker is exposed to a sound level greater than an equivalent sound exposure level of 85 dBA, $L_{ex,8}$. O. Reg. 296/11, s. 20.

(7) Except in the circumstances set out in subsections (8) and (9), the employer shall protect workers from exposure to a sound level greater than the limit described in subsection (6) without requiring them to use and wear personal protective equipment. O. Reg. 296/11, s. 20.

(8) If this subsection applies, workers shall wear and use personal protective equipment appropriate in the circumstances to protect them from exposure to a

sound level greater than the limit described in subsection (6). O. Reg. 296/11, s. 20.

[\(9\)](#) Subsection (8) applies if engineering controls are required by subsections (3) and (4) and,

- (a) are not in existence or are not obtainable;
- (b) are not reasonable or not practical to adopt, install or provide because of the duration or frequency of the exposures or because of the nature of the process, operation or work;
- (c) are rendered ineffective because of a temporary breakdown of such controls; or
- (d) are ineffective to prevent, control or limit exposure because of an emergency. O. Reg. 296/11, s. 20.

PART XII (ss. 294-313) Revoked: O. Reg. 99/11, s. 1.

TABLE 1 Revoked: O. Reg. 496/09, s. 7.

[SCHEDULE](#)
FIRST AID EQUIPMENT

1. (1) Every first aid room referred to in section 281.1 of this Regulation shall be equipped with,

- (a) a current edition of a standard St. John Ambulance First Aid Manual;
 - (b) medical instruments, including dressing scissors, dressing forceps, safety pins, a graduated medicine glass, tongue depressors and cotton-tipped applicators;
 - (c) denatured ethyl alcohol; and
 - (d) dressings, including individually-wrapped adhesive dressings, individually-wrapped sterile gauze pads of various sizes, gauze bandages of various sizes, adhesive plaster, absorbent cotton, triangular bandages, splints of various sizes and splint padding.
- (2) Every first aid room shall be furnished with,
- (a) hot and cold running water;
 - (b) three wash basins (preferably stainless steel);
 - (c) one instrument sterilizer;
 - (d) one cabinet for surgical dressings;
 - (e) one enamel foot bath;
 - (f) one sanitary disposal receptacle with a lid;
 - (g) one couch in a cubicle separate from or curtained off from the rest of the first aid room;
 - (h) one stretcher; and

(i) two blankets.

2. (1) Every first aid room shall have one first aid box that contains at least the items listed in this section for use by a medical attendant at the site of an accident.

(2) A first aid box shall contain,

(a) a current edition of a standard St. John Ambulance First Aid Manual; and

(b) dressings, including twenty-four individually-wrapped adhesive dressings, twelve 3" square gauze pads, four rolls of 2" gauze bandage, four rolls of 4" gauze bandage, four individually-wrapped sterile surgical pads suitable for pressure dressing, six triangular bandages and one roll-up splint.

O. Reg. 583/91, s. 9.

FORM 1 Revoked: O. Reg. 296/11, s. 21.