

*The
Radiation Health and
Safety Regulations,
2024*

being

[Chapter S-15.1 Reg 14](#) (effective August 8, 2024).

NOTE:

This consolidation is not official. Amendments have been incorporated for convenience of reference and the original statutes and regulations should be consulted for all purposes of interpretation and application of the law. In order to preserve the integrity of the original statutes and regulations, errors that may have appeared are reproduced in this consolidation.

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CHAPTER S-15.1 REG 14
The Saskatchewan Employment Act

PART 1
Preliminary Matters

Title

1 These regulations may be cited as *The Radiation Health and Safety Regulations, 2024*.

Definitions

2(1) In these regulations:

“**1-year dosimetry period**” means the period of 1 calendar year beginning on January 1 of each year;

“**5-year dosimetry period**” means the period of 5 calendar years beginning on January 1, 2021 and every period of 5 calendar years after that period;

“**absorbed dose**” means the quotient, expressed in grays, obtained by dividing the energy absorbed through exposure to ionizing radiation by the mass of the body or part of the body that absorbs the radiation;

“**Act**” means *The Saskatchewan Employment Act*;

“**balance of pregnancy**” means the period from the moment an owner of ionizing radiation equipment is informed, in writing, of the pregnancy to the end of the pregnancy;

“**chief occupational medical officer**” means the person appointed as the chief occupational medical officer pursuant to section 3-4 of the Act;

“**commercial tanning salon**” means a tanning parlour, health spa, fitness centre, sports or recreational centre, beauty salon or any other establishment that is open to the public or to members of a club or association and in which a person’s skin is deliberately exposed to ultraviolet radiation, but does not include any hospital or medical clinic where exposures to ultraviolet radiation are administered under medical supervision for therapeutic purposes;

“**committed dose**” means the equivalent dose received by an organ or tissue of the body from a radioactive substance, other than radon or radon progeny:

(a) during the 50 years after the substance is taken into the body of a person 18 years old or older; or

(b) during the period beginning at intake and ending at age 70, after the substance is taken into the body of a person less than 18 years old;

“**dental X-ray equipment**” means ionizing radiation equipment and any associated apparatus that are designed for conducting dental or maxillofacial structures imaging, diagnostic or therapeutic procedures on human beings;

“**effective dose**” means the sum of the products, in sieverts, obtained by multiplying the equivalent dose of radiation received by and committed to each organ or tissue set out in column 1 of Table 2 by the weighting factor set out in column 2 for that item;

“**electromagnetic radiation**” means energy in the form of electromagnetic fields emitted from any source;

“**equivalent dose**” means the product, in sieverts, obtained by multiplying the absorbed dose of radiation and the appropriate radiation weighting factor set out in Table 1;

“**Figure**” means a Figure set out in Part 2 of the Appendix;

“**laser**” means an optical source that emits coherent, monochromatic electromagnetic radiation;

“**laser device**” means a device that incorporates a laser;

“**laser light show**” means a form of entertainment that incorporates the use of any laser or laser device;

“**medical ultrasound equipment**” means ultrasound equipment that is designed for carrying out diagnostic or therapeutic procedures on human beings;

“**medical X-ray equipment**” means ionizing radiation equipment and any associated apparatus that are designed for conducting imaging, diagnostic or therapeutic procedures on human beings, but does not include dental X-ray equipment;

“**National Dose Registry**” means the centralized record-keeping system containing the dose information of radiation workers in Canada that is maintained by Health Canada;

“**patient**” means a person who is undergoing diagnosis or treatment by or under the direction of a health care professional;

“**Radiation Safety Unit**” means the Radiation Safety Unit of the ministry;

“**radio frequency radiation**” means electromagnetic radiation in the frequency range from 3 kilohertz to 300 gigahertz;

“**radon progeny**” means any of the radioactive decay products of radon 222, namely bismuth 214, lead 214, polonium 214 and polonium 218;

“**Table**” means a Table set out in Part 1 of the Appendix;

“**ultrasound**” means longitudinal pressure waves with frequencies greater than 15 kilohertz;

“**ultraviolet radiation**” means electromagnetic radiation in the wavelength range from 100 nanometres to 400 nanometres;

“**veterinary X-ray equipment**” means ionizing radiation equipment and any associated apparatus that are designed for conducting imaging, diagnostic or therapeutic procedures on animals;

“**working level**” means the unit of concentration of radon progeny in 1 cubic metre (1 m³) of air that has the potential alpha energy of 2.08×10^{-5} joules;

“**working level month**” means the exposure that results from the inhalation of air containing one working level for 170 hours and is the amount WLM, calculated in accordance with the following formula:

$$1 \text{ WLM} = 3.54 \text{ mJh/m}^3$$

where:

mJ is millijoules

h is hours

m is metres.

(2) Notwithstanding subsection 1-2(1) of *The Occupational Health and Safety Regulations, 2020*, the definition of “approved” in that subsection does not apply to these regulations.

16 Feb 2024 cS-15.1 Reg 14 s2.

PART 2 Ionizing Radiation

Provision of information

3(1) An owner shall ensure that a radiation worker is informed, in writing:

- (a) that the worker is a radiation worker;
- (b) of the risks associated with radiation to which the worker may be exposed in the course of work; and
- (c) of the applicable effective dose limits and equivalent dose limits set out in section 4.

(2) An owner shall ensure that a female radiation worker is informed, in writing:

- (a) of the risks associated with the exposure of embryos and fetuses to radiation;
- (b) of the importance of informing the owner, as soon as is practicable, in writing, that the female radiation worker is pregnant;
- (c) of the rights of a pregnant radiation worker pursuant to subsection (3); and
- (d) of the applicable effective dose limits for pregnant radiation workers set out in section 4.

(3) On being informed by a radiation worker that the worker is pregnant or suspects that the worker is pregnant, the owner or operator of the ionizing radiation equipment or ionizing radiation installation shall, in order to comply with subsection 4(1), reassess and, if necessary, revise the employment duties or educational activities of the worker.

16 Feb 2024 cS-15.1 Reg 14 s3.

Dose limits

4(1) An owner of ionizing radiation equipment shall ensure that the effective dose received by and committed to a person described in column 1 of Table 4 during a period set out in column 2 of that table is as low as is reasonably achievable with economic and social factors taken into consideration and does not exceed the effective dose set out in column 3 of that table.

- (2) If the effective dose received by a radiation worker in a 1-year dosimetry period exceeds 20 millisieverts or the effective dose received by a pregnant radiation worker in a balance of pregnancy exceeds 4 millisieverts, the owner of ionizing radiation equipment shall submit to the Radiation Safety Unit a written report explaining in full the circumstances in which the dose arose and summarizing the steps that will be taken to minimize the possibility of similar doses arising in the future.
- (3) Every owner of ionizing radiation equipment shall ensure that the equivalent dose received by and committed to an organ or tissue set out in column 1 of Table 5 of a person described in column 2 of that item, during the period set out in column 3 of that item, does not exceed the equivalent dose set out in column 4 of that item.
- (4) If the equivalent dose received by a radiation worker in a 1-year dosimetry period exceeds the dose limit set out in column 4 of Table 5, the owner of ionizing radiation equipment shall submit to the Radiation Safety Unit a written report explaining in full the circumstances in which the dose arose and summarizing the steps that will be taken to minimize the possibility of similar doses arising in the future.

16 Feb 2024 cS-15.1 Reg 14 s4.

Effective dose calculation

5(1) In this section:

- (a) “**ALI**”, as the acronym for annual limit on intake, means the activity, in becquerels, of a radionuclide that will deliver an effective dose of 20 millisieverts during the 50-year period after it is taken into the body of an adult or during the period beginning at intake and ending at age 70 after it is taken into the body of a person less than 18 years of age;
- (b) “**E**” means the portion of the effective dose, in millisieverts:
- (i) received by a person from sources outside the body and includes X-rays, Canadian Nuclear Safety Commission (CNSC) licensed activities or other sources of radiation arising from human activity; and
- (ii) received by and committed to the person from sources inside the body, measured directly or from excreta;
- (c) “**I**” means the activity, in becquerels, of any radionuclide that is taken into the body, excluding radon progeny and the activity of other radionuclides accounted for in the determination of E;
- (d) “**Rn**” means the average annual concentration in the air, in becquerels per cubic metre (m³), of radon 222 that is attributable to a CNSC licensed activity;
- (e) “**RnP**” means the exposure to radon progeny in working level months that is attributable to a CNSC licensed activity;
- (f) “ $\sum I/ALI$ ” means the sum of the ratios of I to the corresponding ALI.
- (2) For the purposes of item 1 of Table 4, the effective dose is the amount ED, expressed in millisieverts, calculated in accordance with the following formula:

$$ED = E + 5 RnP = 20 \sum \frac{I}{ALI}$$

(3) For the purposes of item 2 of Table 4, the effective dose is the amount ED, expressed in millisieverts, calculated in accordance with the following formula:

$$ED = E + 20 \sum \frac{I}{ALI}$$

(4) For the purposes of item 3 of Table 4, the effective dose is the amount ED, expressed in millisieverts, calculated in accordance with either of the following formulas:

$$(a) \quad ED = E + \frac{Rn}{60} + 20 \sum \frac{I}{ALI} ;$$

$$(b) \quad ED = E + 4 RnP + 20 \sum \frac{I}{ALI} .$$

16 Feb 2024 cS-15.1 Reg 14 s5.

Monitoring of dose

6(1) An owner of ionizing radiation equipment shall ensure that the effective dose and equivalent dose received by a worker is systematically determined.

(2) An owner of ionizing radiation equipment shall ensure that the dose of a radiation worker determined by monitoring pursuant to subsection (1) is reported to the National Dose Registry not less than once every 3 months.

(3) For the purpose of assessing compliance with the limits set by the Act and these regulations, the current reading entered into the National Dose Registry with respect to a radiation worker is deemed to be the actual dose received by the radiation worker.

(4) If, in the opinion of a radiation health officer, the circumstances warrant it, the officer may require an owner to investigate the exposure of any person to ionizing radiation and report the results of the investigation to the Radiation Safety Unit without delay.

16 Feb 2024 cS-15.1 Reg 14 s6.

Monitoring procedure

7 An owner of the ionizing radiation equipment shall arrange for a dosimeter to be issued to a radiation worker by a dosimetry service provider licensed pursuant to the REGDOC-2.7.2, *Dosimetry, Volume II: Technical and Management System Requirements for Dosimetry Services*, published by the Canadian Nuclear Safety Commission, August 2020, as amended from time to time.

16 Feb 2024 cS-15.1 Reg 14 s7.

Records of dose

8(1) An owner or operator who employs radiation workers or who is in charge of training radiation workers shall maintain a separate cumulative record for a 5-year period for each radiation worker showing:

- (a) the radiation worker's name and job description;

- (b) all measurements pertaining to the actual dose received, both externally and internally, by the radiation worker for the current 1-year dosimetry period and 5-year dosimetry period; and
 - (c) the committed doses received from any radioactive substances deposited within the body of the radiation worker that have been determined by any monitoring or sampling procedures followed at the place of employment or from any bio-assay procedures that have been carried out.
- (2) An owner or operator mentioned in subsection (1) shall inform each radiation worker of the radiation worker's dose at intervals not exceeding 3 months or on the request of the worker.

16 Feb 2024 cS-15.1 Reg 14 s8.

Mobile X-ray equipment

- 9(1) For the purposes of clause 5-4(2)(a) of the Act, an owner of mobile ionizing radiation equipment shall provide the statement required by subsection 5-4(1) of the Act within 25 business days after the day on which the equipment comes under the owner's control.
- (2) For the purposes of clause 5-4(2)(b) of the Act, an owner of mobile ionizing radiation equipment shall, on the request of a radiation health officer:
- (a) provide the ministry with an itinerary for the equipment; and
 - (b) from time to time, provide the ministry with updates to the itinerary.
- (3) For the purposes of subsection (2), an itinerary is to contain the following particulars:
- (a) the days on which the equipment will be used;
 - (b) the locations where the equipment will be used on the days of equipment use;
 - (c) a telephone number through which the operator can be contacted on the days of equipment use.

16 Feb 2024 cS-15.1 Reg 14 s9.

Change of use

10 No owner of ionizing radiation equipment shall cause or permit the equipment to be used for any function or purpose other than the function or purpose for which it is intended or was designed unless the owner first obtains the written approval of a radiation health officer.

16 Feb 2024 cS-15.1 Reg 14 s10.

Modifications to equipment

11(1) No owner of ionizing radiation equipment shall cause or permit the modification or alteration of the equipment or the structural shielding of the equipment unless the modification or alteration is approved in writing on an individual basis by:

- (a) the equipment manufacturer; or
- (b) a radiation health officer.

(2) An owner of ionizing radiation equipment shall give notice to the Radiation Safety Unit of any modification or alteration of the structural shielding, not later than 15 business days after the modification or alteration is made.

16 Feb 2024 cS-15.1 Reg 14 s11.

Qualifications of operators

12(1) For the purposes of clause 5-6(7)(a) of the Act, the operator of an ionizing radiation installation, or of ionizing radiation equipment, that is used for industrial radiography, shall comply with the requirements of the *Radiation Protection and Safety for Industrial X-ray Equipment, Safety Code 34, 2003*, published by Health Canada.

(2) For the purposes of clause 5-6(7)(a) of the Act, the operator of an ionizing radiation installation, or of ionizing radiation equipment, that is used for a purpose other than diagnosis or treatment relating to human beings or animals or for industrial radiography shall be trained to carry out, in a safe manner, the procedures for which the equipment is to be used, and:

(a) in the case of baggage X-ray equipment, shall be familiar with and adhere to the requirements of the *Requirements for the Safe Use of Baggage X-Ray Inspection Systems, Safety Code 29, 1993*, published by Health Canada; or

(b) in the case of analytical X-ray equipment, shall be familiar with and adhere to the requirements of the *Safety Requirements and Guidance for Analytical X-Ray Equipment, Safety Code 32, 1994*, published by Health Canada.

16 Feb 2024 cS-15.1 Reg 14 s12.

Certification of equipment

13(1) In this section, “**qualified**” means possessing a recognized degree, a recognized certificate or a recognized professional standing and demonstrating, by knowledge, training and experience, the ability to deal with problems related to the subject-matter, the work or the project.

(2) An owner of ionizing radiation equipment or associated apparatus shall ensure that, after the equipment or apparatus is installed, reinstalled, or otherwise placed in the premises of the owner:

(a) radiological safety tests of the equipment or apparatus are completed by a qualified person to ensure the equipment or apparatus is operating within the written specifications established by the equipment or apparatus manufacturer; and

(b) an inspection of the electrical and mechanical components of the equipment or apparatus is completed by a qualified person to ensure that the equipment or apparatus is operating within the written specifications established by the equipment or apparatus manufacturer.

(3) The owner shall ensure that the Radiation Safety Unit is notified within 25 business days after completing the installation and inspection pursuant to subsection (2) in a form acceptable to a radiation health officer certifying that the equipment or associated apparatus has been properly installed and can be safely used.

16 Feb 2024 cS-15.1 Reg 14 s13.

Safety and preventative maintenance inspections

14(1) An owner of medical, dental or veterinary X-ray equipment shall arrange for the inspection of that equipment by a qualified person in a manner and to a degree that is satisfactory to a radiation health officer to ensure that the equipment:

- (a) is in safe operating condition; and
 - (b) has undergone a radiation calibration, the results of which are recorded in a format acceptable to a radiation health officer.
- (2) For the purposes of subsection (1), a person who holds a valid restricted X-ray journey person's licence issued pursuant to *The Electrical Licensing Act* is a qualified person.
- (3) The owner shall ensure that, within 25 business days after completion of the inspection, the Radiation Safety Unit is provided with a copy of the inspection report in the format mentioned in clause (1)(b), including details of all tests carried out and measurements made in the course of the inspection.

16 Feb 2024 cS-15.1 Reg 14 s14.

Frequency of inspections

15(1) An inspection required by subsection 14(1) is to be carried out:

- (a) not less than once per year for medical X-ray equipment;
 - (b) not less than every 3 years for dental X-ray equipment; and
 - (c) not less than every 5 years for veterinary X-ray equipment.
- (2) An inspection required by subsection 14(1) is to be carried out after substantial alteration as defined in section 5-3 of the Act or repair.

16 Feb 2024 cS-15.1 Reg 14 s15.

Quality assurance

16(1) An owner of ionizing radiation equipment that is used for diagnosis or treatment of human beings shall ensure that a quality assurance procedures manual that meets the requirements of subsection (2) is prepared for use with that equipment and that quality assurance procedures are followed.

- (2) The quality assurance procedures manual must:
- (a) be acceptable to a radiation health officer in form and content;
 - (b) clearly specify the quality assurance procedures, including testing frequencies, pass or fail criteria and failed test remediations that are to be followed; and
 - (c) be appropriate to:
 - (i) the extent of use of the ionizing radiation equipment; and
 - (ii) the level of expertise of the person assigned to perform the quality assurance testing.

(3) An owner of ionizing radiation equipment that is used for diagnosis of human beings shall ensure that:

(a) at the times specified by a radiation health officer, the operators of the equipment participate in the Radiation Safety Unit's postal quality assurance program by:

- (i) conducting the tests that are required as part of the program; and
- (ii) returning the exposed test package to the ministry promptly;

(b) in the case of medical X-ray equipment, the operators have ongoing access to the test phantom and step wedge used for carrying out the tests mentioned in subclause (a)(i);

(c) for each piece of ionizing radiation equipment, a quality assurance file is established containing:

- (i) all raw data for quality assurance carried out on the unit during the last 12 months; and
- (ii) summaries of results from all quality assurance procedures from when the equipment is first used on a patient until it was last used on a patient; and

(d) quality assurance summaries of results are kept for at least 3 years after the equipment is decommissioned.

(4) An owner of ionizing radiation equipment that is used for treatment of human beings shall ensure that the requirements set out in clause (3)(c) and (d) are met.

16 Feb 2024 cS-15.1 Reg 14 s16.

X-ray fluoroscopy

17 An owner of ionizing radiation equipment used for X-ray fluoroscopy shall ensure that X-ray fluoroscopy is not used solely for positioning a patient for radiographic examination unless this has been authorized in writing for a specific patient by a radiologist before the examination.

16 Feb 2024 cS-15.1 Reg 14 s17.

Display of radiation hazard sign

18 If ionizing radiation equipment capable of producing dose rates greater than 25 microsieverts per hour is operated, the owner shall ensure that:

(a) in the case of a room used solely for medical diagnosis of patients, a sign bearing the word "X-Ray" is prominently displayed on each door that gives access to the room;

(b) in the case of a room that houses analytical, therapy or industrial ionizing radiation equipment, a sign bearing the word "X-Ray" or the word "Radiation" and the radiation hazard symbol shown in Figure 1 and described in section 19 or any other symbol approved by a radiation health officer is prominently displayed on each door that gives access to the room; and

(c) in the case of an open area:

- (i) a mobile barrier is erected to enclose the area in which a dose rate greater than 25 microsieverts per hour may be produced; and

- (ii) signs bearing the radiation hazard symbols mentioned in clause (b) are placed on the barrier so that at least 1 sign is always clearly visible as the area is approached.

16 Feb 2024 cS-15.1 Reg 14 s18.

Radiation hazard symbol

19(1) The radiation hazard symbol is to be:

- (a) as prominent as is practicable; and
 - (b) of a size that:
 - (i) is consistent with the size of the object to which it is affixed;
 - (ii) permits the symbol to be recognized from a safe distance; and
 - (iii) maintains the proportions shown in Figure 1.
- (2) Unless the circumstances do not permit, the radiation hazard symbol is to be oriented with one blade pointed downward and centred on the vertical axis.
- (3) No wording is to be superimposed on the radiation hazard symbol.
- (4) The three blades and the centre disc of the radiation hazard symbol are to be black or magenta and located on a yellow background.

16 Feb 2024 cS-15.1 Reg 14 s19.

PART 3
Non-ionizing Radiation

DIVISION 1
Ultraviolet Radiation

Exposure limits to ultraviolet radiation – general

20(1) In any place of employment where a worker may be exposed to ultraviolet radiation from ultraviolet radiation equipment or industrial processes, the owner of the equipment or process shall ensure that exposure from the equipment or industrial processes is limited to levels listed under “Ultraviolet Radiation” of the *Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices*, published by the American Conference of Governmental Industrial Hygienists (ACGIH), as amended from time to time.

(2) If the spectral composition of the ultraviolet radiation is not known, the owner of the equipment shall ensure that the total radiant exposure of a worker’s unprotected eyes or skin in any period of 8 hours does not exceed 30 joules per square metre.

(3) For the purposes of subsection (2), an exposure for 8 hours to a maximum continuous radiant power incident per unit area of 1 milliwatt per square metre is deemed to be equal to a total radiant exposure of 30 joules per square metre.

(4) In any place where a member of the public may be exposed to ultraviolet radiation from ultraviolet radiation equipment, the owner of the equipment shall ensure that the total radiant exposure of a member of the public does not exceed the exposure limits for workers established by this section.

- (5) Subsection (4) does not apply with respect to persons who:
- (a) voluntarily undergo exposure to ultraviolet radiation in a commercial tanning salon; or
 - (b) receive exposure to ultraviolet radiation in the course of diagnosis or treatment carried out by or under the direction of a duly qualified medical practitioner.

16 Feb 2024 cS-15.1 Reg 14 s20.

Exposure limits to ultraviolet radiation – photosensitivity

21(1) If the conditions at a place of employment may lead to chemically-induced photosensitivity in a worker, the owner of ultraviolet radiation equipment shall ensure that the exposure to ultraviolet radiation of the worker's eyes or skin, in any period of 8 hours, does not exceed the values that are recommended by the chief occupational medical officer.

(2) Values recommended by the chief occupational medical officer for the purposes of subsection (1) must not exceed the values mentioned in section 20.

(3) If an owner of ultraviolet radiation equipment knows or ought to know that a worker shows inherited photosensitivity to ultraviolet radiation or is under treatment with a photosensitizing drug, the owner shall ensure that:

- (a) the worker's exposure to ultraviolet radiation is limited in accordance with the advice of a duly qualified medical practitioner; or
- (b) the worker is issued with any eye and skin protection that is specified by a duly qualified medical practitioner.

16 Feb 2024 cS-15.1 Reg 14 s21.

Protection where exposure limits cannot be complied with

22 If the exposure limits set out in section 20 and subsection 21(1) cannot be complied with, an owner of ultraviolet radiation equipment shall issue to a worker whose exposure to ultraviolet radiation may exceed those limits:

- (a) any eye and skin protection that is specified by a duly qualified medical practitioner; and
- (b) if required by a radiation health officer, a personal monitoring device to evaluate the exposure of the worker to ultraviolet radiation.

16 Feb 2024 cS-15.1 Reg 14 s22.

Commercial tanning salons – safety features

23 An owner of a commercial tanning salon shall ensure that each tanning enclosure is designed, constructed and maintained in accordance with *Radiation Emitting Devices Regulations* (Canada), Part XI, Tanning equipment.

16 Feb 2024 cS-15.1 Reg 14 s23.

S-15.1 Reg 14 RADIATION HEALTH AND SAFETY, 2024**Shields for tanning equipment**

24 An owner of a commercial tanning salon shall ensure that each tanning enclosure is designed with shields or other means to prevent any person from inadvertently coming into direct contact with the ultraviolet lamp.

16 Feb 2024 cS-15.1 Reg 14 s24.

**DIVISION 2
Laser Radiation****Safe use of lasers**

25 An owner of a laser or laser device shall ensure that the laser or laser device is installed, operated, labelled and maintained in accordance with American National Standards Institute (*ANSI Z136.1-2014, Safe Use of Lasers*).

16 Feb 2024 cS-15.1 Reg 14 s25.

Duty to inform

26 An owner of a laser or a laser device shall:

- (a) fully inform all workers who may be exposed to radiation from a laser or laser device of class 2, 2M, 3R, 3B or 4 as to the hazards of this radiation under the conditions of use; and
- (b) without limiting the generality of clause (a), draw the attention of the workers to the viewing restrictions that are indicated on the laser classification label.

16 Feb 2024 cS-15.1 Reg 14 s26.

Exposure to class 3 or 4 lasers

27 An owner of a class 3 or class 4 laser or laser device shall ensure that no part of the body of any person is deliberately exposed to the direct beam of the laser except under the direction of:

- (a) a duly qualified medical practitioner;
- (b) a dentist who is licensed pursuant to *The Dental Disciplines Act*;
- (c) a chiropractor who is registered pursuant to *The Chiropractic Act, 1994*;
- (d) a physical therapist who is registered pursuant to *The Physical Therapists Act, 1998*;
- (e) a certified athletic therapist who is registered with the Saskatchewan Athletic Therapists Association;
- (f) an occupational therapist who is registered pursuant to *The Occupational Therapists Act, 1997*; or
- (g) in the case of a non-medical laser procedure, a person who:
 - (i) has been formally trained to carry out the procedure for which the laser or laser device is to be used; and
 - (ii) has knowledge of the equipment, the biological effects associated with its use and the necessary safety procedures.

16 Feb 2024 cS-15.1 Reg 14 s27.

Qualifications of operators

28 An owner of a class 3b or class 4 laser or laser device shall ensure that each operator of the laser or laser device:

- (a) is:
 - (i) a duly qualified medical practitioner;
 - (ii) a dentist who is licensed pursuant to *The Dental Disciplines Act*;
 - (iii) a veterinarian who is registered pursuant to *The Veterinarians Act, 1987*;
 - (iv) a physical therapist who is registered pursuant to *The Physical Therapists Act, 1998*;
 - (v) a chiropractor who is registered pursuant to *The Chiropractic Act, 1994*;
 - (vi) a certified athletic therapist who is registered with the Saskatchewan Athletic Therapists Association; or
 - (vii) an occupational therapist who is registered pursuant to *The Occupational Therapists Act, 1997*;
- (b) works under the direct supervision of a person described in clause (a); or
- (c) is, in the case of a non-medical laser, a person who:
 - (i) has been formally trained to carry out the procedures for which that laser or laser device is to be used; and
 - (ii) has knowledge of the equipment, the biological effects associated with its use and the necessary safety procedures.

16 Feb 2024 cS-15.1 Reg 14 s28.

DIVISION 3
Laser Light Shows

Standards for laser light shows

29(1) An owner of a laser light show shall ensure that only lasers or laser devices that operate within the wavelength range from 400 to 700 nanometres are used in the laser light show.

(2) An owner of a laser light show shall ensure that during operation the radiant exposure from the laser or laser device measured at all locations that are normally accessible to the audience or the performers does not exceed the limits set out in Table 3.

(3) An owner of a laser light show shall:

- (a) during set-up when the operator must have access to laser beams, ensure that neither the operator nor any other person is inadvertently exposed to laser radiation of an intensity that exceeds the limits set out in Table 3;

- (b) ensure that the laser projection equipment incorporates safety features that will prevent the exposure of any person to laser radiation of an intensity that exceeds the limits set out in Table 3 in the event of the failure of any component of the equipment, including the scanning mechanism;
 - (c) unless physical barriers prevent access by the audience to that position, ensure that laser radiation power from the beam:
 - (i) is measured; and
 - (ii) does not exceed 1 milliwatt:
 - (A) at any point that is less than 3 metres above any surface to which the audience has access; or
 - (B) at any point that is less than 2.5 metres laterally from any position to which the audience has access;
 - (d) ensure that the laser projection equipment is provided with one or more controls that:
 - (i) are readily accessible to the operator; and
 - (ii) terminate the laser radiation emission in the event of an emergency created by equipment malfunction, audience unruliness or other unsafe conditions;
 - (e) ensure that one person has been designated as operator to be in charge of the equipment during the show; and
 - (f) ensure that a notice is prominently displayed forbidding the use of direct optical viewing devices such as binoculars and telescopes during the operation of the laser light show.
- (4) For the purposes of clause (3)(c), the measurement of laser radiation power must be made with a detector having a circular aperture with a diameter of 7 millimetres and an acceptance solid angle of 2p steradian.

16 Feb 2024 cS-15.1 Reg 14 s29.

DIVISION 4 Ultrasound Equipment

Qualifications of operators – diagnostic

- 30** An owner of medical ultrasound equipment used for diagnosis shall ensure that each operator of the equipment is:
- (a) a duly qualified medical practitioner;
 - (b) a medical ultrasonographer who possesses the qualifications necessary for membership in the Saskatchewan Association of Diagnostic Medical Sonographers;
 - (c) a student who is under the direct supervision of a person who possesses the qualifications set out in clause (a) or (b); or

- (d) a person who:
 - (i) has been formally trained to carry out the procedures for which the equipment is to be used; and
 - (ii) has knowledge of the equipment, the biological effects associated with its use and the necessary safety procedures.

16 Feb 2024 cS-15.1 Reg 14 s30.

Qualifications of operators – therapeutic

31 An owner of medical ultrasound equipment used for therapy shall ensure that each operator of the equipment is:

- (a) a physical therapist who is registered pursuant to *The Physical Therapists Act, 1998*;
- (b) a duly qualified medical practitioner;
- (c) a chiropractor who is registered pursuant to *The Chiropractic Act, 1994*;
- (d) a certified athletic therapist who is registered with the Saskatchewan Athletic Therapists Association;
- (e) a duly qualified occupational therapist who is registered pursuant to *The Occupational Therapist Act, 1997*;
- (f) a student who is under the direct supervision of a person who possesses the qualifications set out in clause (a), (b), (c), (d) or (e);
- (g) a formally trained physiotherapist assistant who works under the supervision of a person described in clause (a); or
- (h) a person who:
 - (i) has been formally trained to carry out the procedures for which the equipment is to be used; and
 - (ii) has knowledge of the equipment, the biological effects associated with its use and the necessary safety procedures.

16 Feb 2024 cS-15.1 Reg 14 s31.

Quality assurance for ultrasound procedures

32(1) An owner of medical ultrasound equipment shall ensure that a quality assurance procedures manual that meets the requirements of subsection (2) is prepared for use with that equipment and that quality assurance procedures are followed.

- (2) The quality assurance procedures manual must:
 - (a) be acceptable to a radiation health officer in form and content;
 - (b) clearly specify the quality assurance procedures, including testing frequencies, pass/fail criteria and failed test remediations that are to be followed; and

- (c) be appropriate to:
 - (i) the extent of use of the medical ultrasound equipment; and
 - (ii) the level of expertise of the person assigned to perform the quality assurance testing.
- (3) An owner of medical ultrasound equipment shall ensure that:
 - (a) for each ultrasound unit, a quality assurance file is established containing:
 - (i) all raw data for quality assurance carried out on the unit during the last 12 months; and
 - (ii) summaries of results from all quality assurance procedures from when the equipment is first used on a patient until it was last used on a patient; and
 - (b) quality assurance summaries of results are kept for at least 3 years after the equipment is decommissioned.

16 Feb 2024 cS-15.1 Reg 14 s32.

Safe use of ultrasound equipment

- 33(1)** An owner of medical equipment that emits ultrasonic energy for the purpose of yielding information on a function or structure of the body shall ensure that the equipment is used in accordance with the practices and procedures identified in the *Guidelines for the Safe Use of Diagnostic Ultrasound, 2001*, published by Health Canada.
- (2) An owner of industrial equipment that emits ultrasonic energy shall ensure that the equipment is used in accordance with the practices and procedures identified in the *Guidelines for the Safe Use of Ultrasound: Part II – Industrial and Commercial Applications, Safety Code 24, 1991*, published by Health Canada.
- (3) Subject to subsection (4), an owner of medical equipment that emits ultrasonic energy for therapeutic purposes shall ensure that the equipment is used in accordance with the practices and procedures identified in clauses 4.1.2 to 4.1.6 of the *Guidelines for the Safe Use of Ultrasound, Part I Medical and Paramedical Applications, Safety Code 23, 1989*, published by Health Canada.
- (4) Medical equipment that emits ultrasonic energy for therapeutic purposes must be calibrated at least once per year to ensure that the ultrasonic power is indicated with an accuracy of $\pm 20\%$.

16 Feb 2024 cS-15.1 Reg 14 s33.

DIVISION 5 Radiofrequency Radiation

Radio frequency radiation – exposure limits

- 34(1)** Subject to subsection (2) and (3), an owner of equipment that generates radio frequency fields in the frequency range from 3 kilohertz to 300 gigahertz shall ensure that the exposure limits specified in the *Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz, Safety Code 6, 2015*, published by Health Canada, are not exceeded.

(2) With respect to radio frequency electromagnetic fields from short-wave diathermy devices, the owner shall ensure that exposure is limited to the maximum exposure levels specified in the *Short-Wave Diathermy Guidelines for Limiting Radiofrequency Exposure, Safety Code 25, 1983*, published by Health Canada.

(3) With respect to magnetic fields from magnetic resonance clinical systems, the owner shall ensure that exposure is limited to the maximum exposure levels specified in the *Guidelines on Exposure to Electromagnetic Fields from Magnetic Resonance Clinical Systems, Safety Code 26, 1987*, published by Health Canada.

16 Feb 2024 cS-15.1 Reg 14 s34.

PART 4

Ionizing and Non-ionizing Radiation

Design change notification

35(1) The vendor, owner, operator or manufacturer shall give notice in writing to the ministry in accordance with subsection (2), if:

- (a) subsequent to its manufacture, radiation equipment or associated apparatus or any component of that equipment or apparatus has been discovered by the manufacturer, vendor, owner or operator to be hazardous; and
- (b) it has been necessary to remove or replace any assembly or component of the equipment or apparatus.

(2) A notice required pursuant to subsection (1) must include:

- (a) the name and mailing address of the vendor;
- (b) the name and address of the owner to whom the equipment, apparatus, assembly or component is to be or has been transferred;
- (c) the identification and brand name of the equipment, apparatus, assembly or component;
- (d) the model and serial number or other identification of the equipment, apparatus, assembly or component; and
- (e) the actions, if any, that have been taken by the vendor or manufacturer to:
 - (i) remove from operation or to make safe the equipment, apparatus, assembly or component; and
 - (ii) prevent any occurrence of the hazard in other similar equipment.

16 Feb 2024 cS-15.1 Reg 14 s35.

Maintenance documentation

36(1) Every vendor of radiation equipment or associated apparatus shall, within 25 business days after a radiation health officer's request, provide the officer with a copy of any recommended maintenance schedules, quality assurance testing or inspection check lists that have been established by the manufacturer for that equipment or apparatus.

(2) Every owner of radiation equipment or associated apparatus shall, within 25 business days after a radiation health officer's request, provide the officer with a copy of any recommended maintenance schedules, quality assurance testing or inspection check lists that have been established by the manufacturer or developed by the owner for that equipment or apparatus.

16 Feb 2024 cS-15.1 Reg 14 s36.

Incident reporting

37(1) A vendor, owner, operator or manufacturer shall immediately give written notice to the ministry in accordance with subsection (2) if an incident:

- (a) involves the manufacturing, testing or use of radiation equipment but does not involve radiation;
- (b) is reported to or known to the manufacturer, vendor, owner or operator of radiation equipment or associated apparatus; and
- (c) causes injury to any person.

(2) A notice required pursuant to subsection (1) must include:

- (a) the day and location at which the incident occurred and the name of the person giving the notice;
- (b) the name of the manufacturer and the type and model number of the radiation equipment and associated apparatus involved;
- (c) the circumstances surrounding the incident;
- (d) the number of persons involved or harmed, the nature and magnitude of their injuries and, if requested by a radiation health officer, the names of the persons involved or harmed; and
- (e) the actions, if any, that have been taken by the manufacturer, vendor or owner to control, correct or eliminate the cause of the incident and to prevent further incidents.

16 Feb 2024 cS-15.1 Reg 14 s37.

Incidental radiation exposure

38(1) An owner of radiation equipment shall take all reasonable steps to minimize the possibility of unnecessary irradiation of any person.

(2) If an incident leads to the possibility of unnecessary irradiation of any person, the owner shall immediately take all necessary steps to:

- (a) minimize the risk of radiation exposure of any individual; and
- (b) terminate the risk as quickly as possible.

(3) The owner shall immediately notify a radiation health officer and confirm that notification in writing within 48 hours if the risk described in subsection (2) results or is likely to result in the irradiation:

- (a) of a radiation worker by ionizing radiation to an extent that is equal to or greater than 5 millisieverts; or
- (b) of any other person by ionizing radiation to an extent that is equal to or greater than 1 millisievert.

(4) The owner shall immediately notify a radiation health officer and confirm that notification in writing within 48 hours if the risk described in subsection (2) results in the irradiation of any person by a form of non-ionizing radiation to an extent that is equal to or greater than the exposure limit set out in Part 3 for that form of radiation.

(5) The owner shall, within 10 days after the incident described in subsection (2), make a full report to the ministry of:

- (a) the circumstances of the incident; and
- (b) the actions taken to eliminate the risk.

(6) An owner of radiation equipment shall inform the ministry immediately if an injury to any person is reported to the owner by a duly qualified medical practitioner as an injury that is known or suspected to have been caused or exacerbated by exposure of the person to radiation equipment or associated apparatus that is under the control of the owner.

16 Feb 2024 cS-15.1 Reg 14 s38.

Radiation warning signs

39(1) In addition to any other requirement of these regulations with respect to signs or notices, a radiation health officer may require an owner of radiation equipment or associated apparatus to display one or more of the following to demarcate an area where a hazard from radiation exists:

- (a) a warning notice issued by the ministry;
- (b) a sign in a form specified by the radiation health officer.

(2) An owner of radiation equipment or associated apparatus shall, if so directed in writing by a radiation health officer, prominently display a warning notice or sign described in subsection (1) so that the notice or sign is readily seen by any person who may be exposed to radiation from the equipment or apparatus.

(3) No person shall display or cause to be displayed any symbol required by these regulations in any manner that implies that a radiation hazard exists if that is not the case.

16 Feb 2024 cS-15.1 Reg 14 s39.

PART 5 General

Providing statements, etc., to ministry

40 Any statement, notice or other document to be provided to the ministry or any fee payable to the ministry pursuant to any provision of the Act or these regulations is to be given or paid, as the case may be, to the Radiation Safety Unit.

16 Feb 2024 cS-15.1 Reg 14 s40.

Fees for consulting services

41(1) No fee is payable for consulting services unless a radiation health officer advises in writing before the services are provided that a fee is required to be paid.

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(2) The fee payable to the ministry for services provided pursuant to clause 5-35(a) of the Act is \$150 per hour or any portion of an hour, plus travel, accommodation and sustenance expenses calculated in accordance with the amounts approved from time to time for employees in the classified division of the public service of Saskatchewan.

16 Feb 2024 cS-15.1 Reg 14 s41.

PART 6
Repeal and Coming into Force

RRS c R-1.1 Reg 2 repealed

42 *The Radiation Health and Safety Regulations, 2005* are repealed.

16 Feb 2024 cS-15.1 Reg 14 s42.

Coming into force

43 These regulations come into force 6 months after the day on which they are filed with the Registrar of Regulations.

16 Feb 2024 cS-15.1 Reg 14 s43.

Appendix

PART 1

Tables

TABLE 1

[Subsection 2(1), definition of “equivalent dose”]

Radiation Weighting Factors

Type and energy range	Radiation weighting factor, w_R
Photons, all energies (X-rays, gamma rays)	1
Electron and muons, all energies (beta rays)	1
Protons and charged pions	2
Alpha particles, fission fragments, heavy nuclei	20
Neutrons, continuous function energy	A continuous function of neutron energy ¹

¹ Radiation weighting factors for these neutrons may also be obtained by referring to the continuous curve shown in Figure 1, and Equation 4.3, on page 66 of the English version of *The 2007 Recommendations of the International Commission on Radiological Protection*, ICRP Publication 103, published in 2007.

TABLE 2

[Subsection 2(1), definition of “effective dose”]

Organ or Tissue Weighting Factors

Item	Column 1 Organ or Tissues	Column 2 Weighting Factor
1	Gonads (testes or ovaries)	0.08
2	Red bone marrow	0.12
3	Colon	0.12
4	Lung	0.12
5	Stomach	0.12
6	Bladder	0.04
7	Breast	0.12
8	Liver	0.04
9	Esophagus	0.04
10	Thyroid gland	0.04
11	Skin	0.01
12	Bone surfaces	0.01
13	Brain	0.01
14	Salivary glands	0.01
15	Remaining tissue*	0.12
16	Whole body	1.00

* All organs and tissues not listed in items 1 to 14 (remainder organs and tissues) collectively, namely the adrenals, extra-thoracic region, gallbladder, heart, kidneys, lymphatic nodes, muscle, oral mucosa, pancreas, small intestine, spleen, thymus and prostate or uterus/cervix.

TABLE 3
[Subsection 29(2), clauses 29(3)(a) and (b)]

Exposure Limits for Laser Light Shows

Time Interval (t) (seconds)	Maximum Exposure
$<1.8 \times 10^{-5}$	$5.0 \times 10^{-3} \text{ J/m}^2$
$\geq 1.8 \times 10^{-5}$ and <10	$1.8 \times 10 t^{3/4} \text{ J/m}^2$
≥ 10 and $<10^4$	10^2 J/m^2
$\geq 10^4$	10^{-2} W/m^2

t = any time between the limits specified

J = joule

W = watt

TABLE 4
[Subsection 4(1) and 5(2), (3) and (4)]

Effective Dose Limit

Item	Column 1 Person	Column 2 Period	Column 3 Effective Dose (millisievert)
1	Radiation worker, including a pregnant radiation worker	(a) 1-year dosimetry period	50
		(b) 5-year dosimetry period	100
2	Pregnant radiation worker	Balance of pregnancy	4
3	A person who is not a radiation worker	1 calendar year	1

TABLE 5
[Subsection 4(3)]

Specific Equivalent Dose Limits

Item	Column 1 Organ or Tissue	Column 2 Person	Column 3 Period	Column 4 Equivalent Dose (millisievert)
1	Lens of an eye	(a) Radiation Worker	(i) 1-year dosimetry period	50
			(ii) 5-year dosimetry period	100
		(b) Any other person	1 calendar year	15
2	Skin ¹	(a) Radiation Worker	1-year dosimetry period	500
		(b) Any other person	1 calendar year	50
3	Hands and feet	(a) Radiation Worker	1-year dosimetry period	500
		(b) Any other person	1 calendar year	50

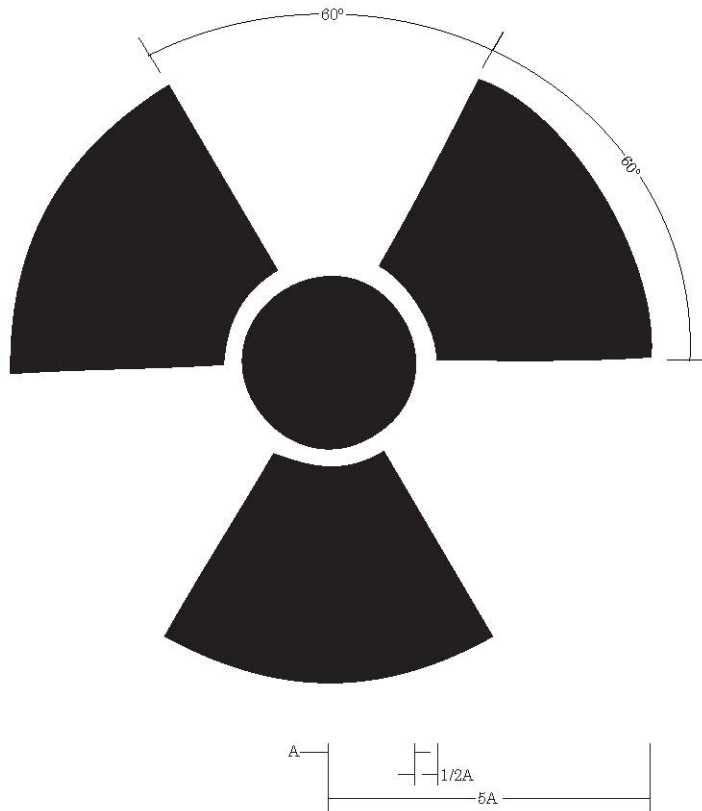
¹ When skin is unevenly irradiated, the equivalent dose received by the skin is the average equivalent dose over the 1 cm² area that received the highest equivalent dose.

PART 2

Figures

FIGURE 1

[Clause 18(b) and subclause 19(1)(b)(iii)]

Radiation Hazard Symbol

A = Radius of the central disc

Note: Construction lines do not appear in the actual symbol

16 Feb 2024 cS-15.1 Reg 14.

