

Occupational Health and Safety Bulletin



Radiation Protection Regulation Amended in 2013 – Highlights

The Radiation Protection Amendment Regulation came into effect on July 25, 2013. This Regulation was made after a comprehensive review with extensive public consultation. Only minor changes to the Radiation Protection Regulation were proposed at this time.

What are the changes?

The Radiation Protection Regulation has changed in the following areas:

- (1) Changes in dose limits for ionizing radiation
- (2) Change in exposure limits for radiofrequency electromagnetic fields
- (3) Requirement for the Director of Radiation Health to be notified when radiation equipment changes hands or is brought in or out of service
- (4) Expansion of the pregnant radiation worker section
- (5) Modification to designated radiation equipment requiring a registration certificate
- (6) Introduction of personal exposure monitoring for students
- (7) Reporting of radiation doses to the National Dose Registry
- (8) Updating of Safety Codes and Standards referenced in the Regulation

The following is a brief summary of each of the above amendments:

Alberta Government

(1) Dose limits for ionizing radiation

What changed?

- Introduction of *effective dose* and *equivalent dose*
- Pregnancy dose limit: once pregnancy is declared the dose limit for radiation workers is changed from 2 millisieverts to 4 millisieverts for the balance of the pregnancy
- Dose limit for the lens of the eye is changed from 150 millisieverts annually to 50 millisieverts annually, up to a maximum of 100 millisieverts over five years

Why was the change necessary?

- *Effective dose* and *equivalent dose* are internationally accepted terms for exposure to ionizing radiation
- Harmonization of the dose limit for all pregnant radiation workers with that adopted by Health Canada and Canadian Nuclear Commission. The same standard is agreed to by consensus amongst various jurisdictions in Canada
- The occupational dose limit for the lens of the eye has been lowered internationally, consistent with new scientific evidence of radiation harm

How will the change affect employers and workers?

- All pregnant radiation workers will have one dose limit regardless of the source of the ionizing radiation
- Employers may have to supply, and workers may have to use, protective eyewear for the lens of the eye

How will the change improve radiation health and safety?

- Less confusion and anxiety for pregnant radiation workers
- Increased protection for the lens of the eye for occupationally exposed persons

(2) Maximum Exposure Limits for Radiofrequency Electromagnetic Fields

What changed?

- The Regulation references Health Canada's *Safety Code 6: Limits of Human Exposure to Radiofrequency Electromagnetic Fields* in its entirety rather than just the maximum exposure limits for occupationally exposed persons

Why was the change necessary?

- In 2009 Safety Code 6 was revised and moved from exposure limits based on *Radiofrequency and Microwave Exposed Persons and General Public* to exposure limits based on *Controlled Environments and Uncontrolled Environments*

How will the change affect employers and workers?

- Since workers could be exposed to both controlled and uncontrolled environments referencing the revised Safety Code 6 in its entirety captures the exposure limits for all types of work environments

How will the change improve radiation health and safety?

- Ensures that maximum exposure limits are up to date and consistent with national standards

(3) Provision of information to the Director

What changed?

- New provision to alert the Director of Radiation Health of new designated radiation equipment in the province and of designated radiation equipment being taken out of service

Why was the change necessary?

- Not all owners of designated radiation equipment are registering their equipment at the time of installation. Not all vendors and suppliers are informing their customers of the requirement to register this designated radiation equipment. Addition of this provision in the Regulation “closes the loop” in the registration process.

How will the change affect employers and workers?

- Employers will be informed at the time of purchase of the requirement to register their radiation equipment

How will the change improve radiation health and safety?

- Receipt of this information assists the Director in distributing registration information to new owners of designated radiation equipment

(4) Pregnant workers protected

What changed?

- Expansion of the pregnant radiation worker section to include the requirement for the employer to reassess the employment duties or training activities of a pregnant radiation worker

Why was the change necessary?

- Reassessment and, if necessary, modification of the employment duties of a pregnant radiation worker ensures that the maximum permissible dose for a pregnant person is not exceeded

How will the change affect employers and workers?

- Pregnant radiation worker must inform her employer of her pregnancy in writing
- Employers must review the dose history of the pregnant radiation worker

How will the change improve radiation health and safety?

- The mandatory review of the dose history and job duties facilitate prevention of radiation overexposure of pregnant radiation workers
- The only criterion for maternity-related reassignment for pregnant radiation workers is the dose limit specified in Schedule 1 of the Regulation

(5) Designated radiation equipment

What changed?

- Class 3b or 4 lasers that are enclosed within a laser system with a lower classification do not require a registration certificate

Why was the change necessary?

- Laser hazard classification is based entirely on the laser radiation to which human access is possible during operation
- A laser system which incorporates embedded lasers of higher classes may have a lower classification as the result of engineering features which limit the accessible radiation emission. These lower classes have a lower risk of laser radiation exposure.

How will the change affect employers and workers?

- Employers will not have to register class 3b or 4 lasers that are enclosed within a laser system with a lower classification

How will the change improve radiation health and safety?

- This new requirement ensures that only radiation equipment that poses a radiation risk to workers during operation is designated as requiring a registration certificate

(6) Personal exposure monitoring for students

What changed?

- Student undergoing a course of instruction involving the use of ionizing radiation equipment must be provided with and use an appropriate device to monitor their personal radiation exposure

Why was the change necessary?

- This is to correct an oversight in the previous Regulation – only radiation workers were required to be monitored

How will the change affect employers and workers?

- Employers (educational institutions) will have to ensure that students are monitored for their personal exposure to ionizing radiation

How will the change improve radiation health and safety?

- Students will have a record of their personal exposure to ionizing radiation and will be more readily able to identify any radiation safety concerns with the use of ionizing radiation equipment
- Radiation exposures to students will be kept as low as reasonably achievable

(7) Reporting of radiation doses

What changed?

- Employers must report the doses of radiation workers to the National Dose Registry (NDR)

Why was the change necessary?

- To ensure that the NDR will continue to process the dose records for all Alberta workers

How will the change affect employers and workers?

- There is no change from the current practice, however employers will have the responsibility to ensure that the dose records of their employees are reported to the NDR. These dose records will continue to be submitted by the licensed dosimetry service providers on behalf of the employer.

How will the change improve radiation health and safety?

- Ensures that Alberta has access to a complete dose database for all radiation workers in Alberta through the NDR for the purposes of processing dose records and reporting overexposures.

(8) Updating of Safety Codes and Standards referenced in the Regulation

What changed?

- Adding reference to Safety Code 35 (2008), “*Safety Procedures for the Installation, Use and Control of X-ray Equipment in Large Medical Radiological Facilities*” published by Health Canada
- Updating reference to CAN/CSA-Z386-08, “*Safe Use of Lasers in Health Care Facilities*” published by the Canadian Standards Association
- Updating reference to ANSI Standard Z136.1-2007, “*American National Standard for the Safe Use of Lasers*” published by the American National Standards Institute

Why was the change necessary?

- Safety Code 35 replaces Safety Code 20A, “*X-ray Equipment in Medical Diagnosis*” and Safety Code 31, “*Radiation Protection in Computed Tomography Installations*” published by Health Canada
- Referenced laser standards in the Regulation were outdated

How will the change affect employers and workers?

- Employers will have to comply with the current referenced safety codes and standards

How will the change improve radiation health and safety?

- The updated references provide for the most current radiation protection criteria

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