



NUCLEAR SUBSTANCES AND
RADIATION DEVICES LICENCE

PERMIS PORTANT SUR LES SUBSTANCES
NUCLÉAIRES ET LES APPAREILS À
RAYONNEMENT

12278-26-18.5

I) **LICENCE NUMBER:** 12278-26-18.5

II) **LICENSEE**

Pursuant to section 24 of the Nuclear Safety and Control Act, this licence is issued to:

Nova Scotia Health Authority
90 Lovett Lake Court
Halifax, NS
B3S 0H6
Canada

This licence replaces licence 12278-26-18.4.

III) **LICENCE PERIOD**

This licence is valid from: April 13, 2016 to September 30, 2018 unless otherwise suspended, amended, revoked or replaced.

IV) **LICENSED ACTIVITIES**

This licence authorizes the licensee to:

- (a) possess, transfer, import, use and store the nuclear substances listed in the Appendix: Nuclear Substances and Radiation Devices of this licence.
- (b) conduct licensed activities in the location(s) specified in the Appendix: Locations of Licensed Activities of this licence.

This licence is issued for: laboratory studies (813).

V) **CONDITIONS**

The contents of the appendices attached to this licence form part of the licence.

1. Prohibition of Human Use

This licence does not authorize the use of nuclear substances in or on human beings.
(2696-0)

2. Laboratory Lists

The licensee shall maintain a list of all areas, rooms and enclosures in which more than one exemption quantity of a nuclear substance is used or stored.
(2569-1)

3. Laboratory Procedures

The licensee shall post and keep posted, in a readily visible location in areas, rooms or enclosures where nuclear



substances are handled, a radioisotope safety poster approved by the Commission or a person authorized by the Commission, which corresponds to the classification of the area, room or enclosure.
(2570-3)

4. Storage

The licensee shall:

- (a) ensure that when in storage radioactive nuclear substances or radiation devices are accessible only to persons authorized by the licensee;
- (b) ensure that the dose rate at any occupied location outside the storage area, room or enclosure resulting from the substances or devices in storage does not exceed 2.5 microSv/h; and
- (c) have measures in place to ensure that the dose limits in the Radiation Protection Regulations are not exceeded as a result of the substances or devices in storage.

(2575-2)

5. Area Classification

The licensee shall classify each room, area or enclosure where more than one exemption quantity of an unsealed nuclear substance is used at a single time as:

- (a) basic-level if the quantity does not exceed 5 ALI,
 - (b) intermediate-level if the quantity used does not exceed 50 ALI,
 - (c) high-level if the quantity does not exceed 500 ALI,
 - (d) containment-level if the quantity exceeds 500 ALI; or
 - (e) special purpose if approved in writing by the Commission or a person authorized by the Commission.
- Except for the basic-level classification, the licensee shall not use unsealed nuclear substances in these rooms, areas or enclosures without written approval of the Commission or a person authorized by the Commission.

(2108-3)

6. Contamination Meter Requirements

The licensee shall make available to workers at all times at the site of the licensed activity a properly functioning portable contamination meter.

(2572-1)

7. Contamination Criteria

The licensee shall ensure that for nuclear substances listed in the Appendix: Classes of Radionuclides, attached to this licence:

- (a) non-fixed contamination in all areas, rooms or enclosures where unsealed nuclear substances are used or stored does not exceed:
 - (i) 3 becquerels per square centimetre for all Class A radionuclides;
 - (ii) 30 becquerels per square centimetre for all Class B radionuclides; or
 - (iii) 300 becquerels per square centimetre for all Class C radionuclides; averaged over an area not exceeding 100 square centimetres; and
- (b) non-fixed contamination in all other areas does not exceed:
 - (i) 0.3 becquerels per square centimetre for all Class A radionuclides;
 - (ii) 3 becquerels per square centimetre for all Class B radionuclides; or
 - (iii) 30 becquerels per square centimetre for all Class C radionuclides; averaged over an area not exceeding 100 square centimetres.

(2642-9)



8. Thyroid Monitoring

- (a) Every person who in any 24-hour period uses a total quantity of Iodine-125 or Iodine-131 exceeding:
- (i) 2 MBq in an open room;
 - (ii) 200 MBq in a fume hood;
 - (iii) 20 000 MBq in a glove box; or
 - (iv) any approved quantity in any room, area or enclosure authorized in writing by the CNSC shall undergo thyroid screening within a period more than 24 hours after the last use that resulted in any of the above limits being exceeded and less than 5 days after the limit was exceeded.
- (b) Every person who is involved in a spill of greater than 2 MBq of Iodine I-125 or Iodine-131 shall undergo thyroid screening within a period more than 24 hours after the spill and less than 5 days after the spill.
- (c) Every person on whom Iodine-125 or Iodine-131 external contamination is detected shall undergo thyroid screening within a period more than 24 hours after the contamination and less than 5 days after the contamination.
- (2046-15)

9. Thyroid Screening

Screening for internal Iodine-125 and Iodine-131 shall be performed using:

- (a) a direct measurement of the thyroid with an instrument that can detect 1 kBq of Iodine-125 or Iodine-131; or
 - (b) a bioassay procedure approved by the Commission or a person authorized by the Commission.
- (2600-3)

10. Thyroid Bioassay

If thyroid screening detects more than 10 kBq of Iodine-125 or Iodine-131 in the thyroid, the licensee shall immediately make a preliminary report to the Commission or a person authorized by the Commission and have bioassay performed within 24 hours by a person licensed by the Commission to provide internal dosimetry.

(2601-6)

11. Extremity Dosimetry - Beta Emitters

The licensee shall ensure that any person who handles a container which contains more than 50 MBq of phosphorus 32, strontium 89, yttrium 90, samarium 153 or rhenium 186 wears a ring dosimeter. The dosimeters must be supplied and read by a dosimetry service licensed by the Commission.

(2578-1)

12. Decommissioning

The licensee shall ensure that prior to decommissioning any area, room or enclosure where the licensed activity has been conducted;

(a) the non-fixed contamination for nuclear substances listed in the licence application guide table titled "Classification of Radionuclides" does not exceed:

- (i) 0.3 becquerels per square centimetre for all Class A radionuclides;
- (ii) 3 becquerels per square centimetre for all Class B radionuclides; and
- (iii) 30 becquerels per square centimetre for all Class C radionuclides; averaged over an area not exceeding 100 square centimetres;

(b) the release of any area, room or enclosure containing fixed contamination, is approved in writing by the Commission or person authorized by the Commission;

(c) all nuclear substances and radiation devices have been transferred in accordance with the conditions of this licence; and



(d) all radiation warning signs have been removed or defaced.
(2571-4)

13. Operation Limitations

Subject to any other condition of this licence and unless otherwise permitted by the prior written approval of the Commission or a person authorized by the Commission, the licensee shall carry out the licensed activities in accordance with the documents or parts thereof referred to in the Appendix: Licence Document(s).
(2917-7)

14. Disposal (General)

When disposing of unsealed nuclear substances set out in column 1 of the Appendix: Disposal Limits to municipal waste, to sewer systems or to atmosphere, the licensee shall ensure that the concentration limit set out for each nuclear substance is not exceeded.

(a) The concentration limits set out in column 2 apply to quantities of solid waste of less than three tonnes per building per year. Nuclear substances released to the municipal garbage system must be in solid form and uniformly distributed in the waste with a concentration that is less than the limits in column 2. Where more than one nuclear substance is disposed of at one time, the sum of the quotients obtained by dividing the quantity of each substance by its corresponding limit in column 2 shall not exceed one.

(b) The limits set out in Column 3 apply to the water soluble liquid form of each nuclear substance which may be disposed

of per building per year. Where more than one nuclear substance is disposed of at one time, the sum of the quotients obtained by dividing the quantity of each substance by its corresponding limit in column 3 shall not exceed one.

(c) The concentration limits set out in Column 4 may be averaged over a one-week period and apply to releases of less than 3 million cubic metres per year. Where more than one nuclear substance is disposed of at one time, the sum of the quotients obtained by dividing the quantity of each substance by its corresponding limit in column 4 shall not exceed one.

(2160-12)

15. Inaccuracies Notification

The licensee shall report to the Commission or a person authorized by the Commission, as soon as is practicable, the discovery of any inaccuracy or incompleteness in the documents referred to in the Appendix: Licence Document(s).
(2920-6)

16. Financial Guarantee

The licensee shall, as of April 1, 2015, maintain at all times a financial guarantee in respect of the activities authorized by this licence of a value set by the Commission and in a form acceptable to the Commission.
(2020-1)

17. Sealed Source Security Requirements

The licensee shall implement the security measures for sealed sources as set out in Regulatory Document REGDOC-2.12.3. Security of Nuclear Substances: Sealed Sources, as amended from time to time:

- a) by no later than May 31, 2015, for Category 1 and 2 sealed sources, and
- b) by no later than May 31, 2018, for Category 3, 4 and 5 sealed sources.

The sealed source categories are specified in REGDOC-2.12.3.
(2490-1)



18. Annual Compliance Report

The licensee shall, by July 31 of each year, submit to the Commission a written annual compliance report in the form specified at www.nuclearsafety.gc.ca/acr.
(2912-3)

Designated Officer pursuant to paragraph 37(2)(c) of the Nuclear
Safety and Control Act