I) LICENCE NUMBER: 01478-1-27.0

II) LICENSEE

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

St. Thomas Elgin General Hospital
189 Elm Street
St. Thomas , ON
N5R 5C4
Canada

Corporate No.: 59493 (Ontario)

III) LICENCE PERIOD

This licence is valid from: June 1, 2022 to May 31, 2027 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 and the prescribed equipment 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: diagnostic nuclear medicine procedures (862).

V) CONDITIONS

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

1. List of Areas, Rooms and Enclosures
   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.
   (2569-2)

2. Posting of Safety Poster(s)
   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.
   (2570-4)

3. 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)

4. 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)

5. 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.

(2642-10)

6. Thyroid Monitoring
(a) Every person who in any 24-hour period uses a total quantity of Iodine 124, 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 in any 24-hour period uses a total quantity of Iodine-123 exceeding:
(i) 200 MBq in an open room;
(ii) 20,000 MBq in a fume hood;
(iii) 2,000,000 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 8 hours after the last use that resulted in any of the above limits being exceeded and less than 48 hours after the limit was exceeded.
(c) Every person who is involved in a spill greater than 2 MBq of Iodine-124, Iodine-125 or Iodine-131 or on whom external contamination is detected, shall undergo thyroid screening within a period more than 24 hours after the spill and less than 5 days after the spill or contamination.
(d) Every person who is involved in a spill of greater than 200 MBq of Iodine-123 or on whom external contamination

is detected, shall undergo thyroid screening within a period more than 8 hours after the spill and less than 48 hours after the spill or contamination.
(2046-17)

7. Thyroid Screening
Screening for internal Iodine-123, Iodine 124, 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-124, Iodine-125 or Iodine-131, or 10 kBq of Iodine-123; or
(b) a bioassay procedure approved by the Commission or a person authorized by the Commission.
(2600-4)

8. Thyroid Bioassay
If thyroid screening detects more than 10 kBq of Iodine-124, Iodine-125, Iodine-131 or 100 kBq of Iodine-123 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 approved by the Commission to provide internal dosimetry.
(2601-7)

9. Disposal (Nuclear Medicine)
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 limit indicated for each nuclear substance is not exceeded.
(a) The 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 waste 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 and exclude nuclear substances in patient excreta. 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 limits set out in column 4 may be averaged over a one-week period. These limits 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.
(2162-9)

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

(a) the total surface contamination (non-fixed plus fixed) for nuclear substances listed in the table titled "Classes of Nuclear Substances" found in Appendix Y of REGDOC-1.6.1 Licence Application Guide does not exceed:
(i) 0.3 becquerels per square centimetre (0.3 Bq/cm2) for all Class A radionuclides;
(ii) 3 becquerels per square centimetre (3 Bq/cm2) for all Class B radionuclides; and
(iii) 30 becquerels per square centimetre (30 Bq/cm2) 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 surface contamination in excess of the values listed

in paragraph (a), 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.
(2571-6)

11. Annual Compliance Report
The licensee shall, by March 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)

12. Survey Meter Requirements
The licensee shall provide at all times where nuclear substances, except for Hydrogen-3 and Nickel-63, are handled or stored a radiation survey meter.
(2058-1)

13. Area Classification - Nuclear Medicine
a) The licensee shall classify each room, area or enclosure as nuclear medicine:
i) where nuclear substances are prepared for patients;
ii) where nuclear substances are administered to patients;
iii) where nuclear medicine procedures are performed for diagnostic, therapeutic and human research purposes, including imaging.
This requirement does not apply to an in-patient room where the unsealed nuclear substance is administered for diagnostic or human research purposes.

b) The licensee shall not prepare, administer, use or image nuclear substances in a room, area or enclosure without prior written approval of the Commission or a person authorized by the Commission.
(2110-3)

14. Financial Guarantee
The licensee shall 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.
(2020-2)

15. Sealed Source Security Requirements
The licensee shall meet 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. The sealed source categories are specified in REGDOC-2.12.3.
(2490-3)

16. 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)

17. 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)

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

Appendix: Nuclear Substances and Radiation Devices

St. Thomas Elgin General Hospital

Unsealed Nuclear Substances

Nuclear Substance	Maximum Total Quantity In Possession
Gallium 67	1.11 GBq
Iodine 131	2.22 GBq
Technetium 99m	30 GBq
Thallium 201	222 MBq

Sealed Nuclear Substances

Nuclear Substance	Maximum Quantity Per Sealed Source
Cesium 137	8 MBq
Cobalt 57	370 MBq
Gadolinium 153	444 MBq
Iodine 125	400 MBq

Radiation Devices

Equipment Make and Model	Sealed Source Assembly	Nuclear Substance	Maximum Quantity per Radiation Device
Siemens AutoQC	n/a	Gadolinium 153	444 MBq
	n/a	Cobalt 57	2.22 MBq

end of appendix

Appendix: Location(s) of Licensed Activities

St. Thomas Elgin General Hospital

189 Elm Street
St. Thomas, ON

end of appendix

Appendix: Licence Document(s)

LICENCE DOCUMENTS

[A1] STEGH Radiation Safety Manual, January 7, 2022. CNSC Document Number 6793129

end of appendix

Appendix: Disposal Limits

Column 1 Nuclear Substance	Column 2 solids to municipal garbage system (qty per kg)	Column 3 liquids (water soluble) to municipal sewer system (qty per year)	Column 4 gases to atmosphere (qty per cubic metre)
Gallium 67	0.037 MBq	100 MBq	n/a
Iodine 131	0.037 MBq	10 MBq	0.175 kBq
Technetium 99m	3.7 MBq	1000 MBq	n/a
Thallium 201	0.037 MBq	100 MBq	n/a

end of appendix

Appendix: Classes of Radionuclides

The most commonly licensed radionuclides have been grouped into Class A, Class B and Class C, based upon their radiological properties as shown in the table below.

CLASS	RADIONUCLIDE				
CLASS A	all alpha emitters and their daughter isotopes				
	Ag-110m	Bi-210	Co-56	Co-60	Cs-134
	Cs-137	I-124	Lu-177m	Mn-52	Na-22
	Po-210	Pu-238	Pu-239	Pu-240	Sb-124
	Sc-46	Sr-82	U-234	U-235	U-238
	V-48	Zn-65			
CLASS B	Au-198	Ba-133	Br-82	Ce-143	Co-58
	Cu-67	Fe-59	Hg-194	Hg-203	I-131
	Ir-192	La-140	Mo-99	Nb-95	Pa-233
	Ra-223	Re-186	Re-188	Ru-103	Sb-122
	Sm-153	Sr-90	Xe-127	Y-86	Y-90
	Yb-169	Zr-89	Zr-95		
CLASS C	C-11	C-14	Ca-45	Cd-109	Ce-141
	Cl-36	Co-57	Cr-51	Cu-60	Cu-61
	Cu-64	F-18	Fe-55	Ga-67	Ga-68
	Ge-68	H-3	I-123	I-125	In-111
	In-113m	In-114	K-42	Kr-85	Lu-177
	Mn-52m	Mn-56	N-13	Na-24	Nb-98
	Ni-63	O-15	P-32	P-33	Pd-103
	Pr-144	Pu-241	Rh-106	S-35	Sc-44
	Sn-113	Sr-89	Tc-94m	Tc-99	Tc-99m
	Te-127	Tl-201	V-49	W-181	W-188
	Xe-133	Zn-63			

When using more than one radionuclide in a room, the radionuclide with the lowest contamination limit must be used to determine the limit, Class A, Class B or Class C that applies to the room.
If a radionuclide is not listed in the table, contact the CNSC at 1-888-229-2672.

end of appendix