



Canada's Nuclear Regulator  
L'organisme de réglementation  
nucléaire du Canada

**PROTECTED B when completed**

# Annual Compliance Reporting Form

**Licensed Activity: Operate and service an isotope production accelerator facility**

**Usetype (616)**

**Revision Date: September 2016**



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

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**Canada**



**Declaration of Licensee Representative**

I,  having the authority to act for the licensee pursuant to Section 15 of the General Nuclear Safety and Control

Regulations, certify that all statements and representations made in this Annual Compliance Report and any supplementary pages appended to this report are true and correct to the best of my knowledge.

Title	Date (YYYY-MM-DD)
Radiation Safety Officer	2019-11-19

It is an offence under the Nuclear Safety and Control Act to knowingly make a false report.

For more information, or for questions on the content and/or filling of ACR forms, please contact the CNSC Directorate of Nuclear Substance Regulation at 1-888-229-2672.

When complete, please submit this form via email to [cnsacrac.ccsn@canada.ca](mailto:cnsacrac.ccsn@canada.ca) or by fax to 613-995-5086.





Licensee Organization Information			
Licensee Name		Licensee Corporation Number (if applicable)	
Thunder Bay Regional Health Sciences Centre		1122866 (Ontario)	
Licensee Business Number		Licence Number	
		01461-21-21.6	
Reporting Period			
This Annual Compliance Report covers the 12 month period.			
From		To	
2018-11-01		2019-10-31	
Head Office Legal Address			
Street Address			
980 Oliver Road			
City	Province/State	Country	Postal/Zip Code
Thunder Bay	ON	Canada	P7B 6V4





**Radiation Safety Officer (RSO)**

Name		Title	
Michael Campbell		Radiation Safety Officer	
Mailing Address			
Street Address		City	
1040 Oliver Road, Suite B1		Thunder Bay	
Province/State	Country	Postal/Zip Code	Telephone Number
ON	Canada	P7B 7A5	XXXXXXXXXX
Alternate Telephone Number	Facsimile	Email Address	
XXXXXXXXXX		XXXXXXXXXXXXXXX	

**Alternate Radiation Safety Officer (if applicable)**

Check here if no alternate RSO

Name		Title	
Sonja Desjardins		Cyclotron Associate	
Mailing Address			
<input checked="" type="checkbox"/> Check here if same as "Radiation Safety Officer"			
Street Address		City	
1040 Oliver Road, Suite B1		Thunder Bay	
Province/State	Country	Postal/Zip Code	Telephone Number
ON	Canada	P7B 7A5	XXXXXXXXXX
Alternate Telephone Number	Facsimile	Email Address	
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXX	



**Financial Contact (if applicable)**

Name		Title	
Peter Myllymaa		Executive Vice-President, Corporate Services and Operations	
Mailing Address			
<input type="checkbox"/> Check here if same as "Radiation Safety Officer"			
Street Address		City	
980 Oliver Road		Thunder Bay	
Province/State	Country	Postal/Zip Code	Telephone Number
ON	Canada	P7B 6V4	XXXXXXXX
Alternate Telephone Number	Facsimile	Email Address	
XXXXXXXX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXX@XXXXXX.XX	

**Signing Authority**

<input checked="" type="checkbox"/> Check here if same as "Radiation Safety Officer"			
Name		Title	
Michael Campbell		Radiation Safety Officer	
Mailing Address			
<input checked="" type="checkbox"/> Check here if same as "Radiation Safety Officer"			
Street Address		City	
1040 Oliver Road, Suite B1		Thunder Bay	
Province/State	Country	Postal/Zip Code	Telephone Number
ON	Canada	P7B 7A5	XXXXXXXX
Alternate Telephone Number	Facsimile	Email Address	
XXXXXXXX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXX@XXXXXX.XX	





Applicant Authority			
<input type="checkbox"/> Check here if same as "Radiation Safety Officer"			
Name		Title	
Peter Myllymaa		Executive Vice-President, Corporate Services and Operations	
Mailing Address			
<input type="checkbox"/> Check here if same as "Radiation Safety Officer"			
Street Address			
980 Oliver Road			
City	Province/State	Country	Postal/Zip Code
Thunder Bay	ON	Canada	P7B 6V4
Telephone Number	Alternate Telephone Number	Facsimile	
8 XXXXX	XXXXXX	XXXXXX	
Email Address			
XXXXXX			





**Inventory: Sealed Sources**

Enter your inventory of CNSC-licensed sealed sources specific to this licence in the table below. Report one source per line.

<input type="checkbox"/> Check here if you currently have no sealed sources in inventory.	Date of inventory (YYYY-MM-DD)
	2019-11-19

NOTE: The information requested on this page may be submitted as a separate spreadsheet attached to the same email as this form. Please ensure your spreadsheet uses the same headings as in the table below, and contains all required information, or see [www.nuclearsafety.gc.ca/acr](http://www.nuclearsafety.gc.ca/acr) for templates.

Sealed Source(s) (List only sealed sources that are not contained in a radiation device)					
Manufacturer	Model	Serial Number	Nuclear Substance	Current Activity †	Activity Units
Please see attached list					

† If the Current Activity is not known, but is known for a date in the past, use the decay calculator located at <http://www.radprocalculator.com/Decay.aspx> to determine the Current Activity

Comments

Per instructions from inspectors some of the sources that previously had been classified as sealed sources are now classified as open unsealed/reference sources

Please see attached lists.





**Inventory Unsealed Sources**

Enter your inventory of CNSC-licensed unsealed sources in possession applicable to this licence.

Check here if you currently have no unsealed sources in inventory

Date of inventory (YYYY-MM-DD)

2019-11-19

NOTE: The information requested on this page may be submitted as a separate spreadsheet attached to the same email as this form. Please ensure your spreadsheet uses the same headings as in the table below, and contains all required information, or see [www.nuclearsafety.gc.ca/acr](http://www.nuclearsafety.gc.ca/acr) for templates

**Unsealed Sources**

Nuclear Substance	Current Activity †	Activity Units
please see attached list		

† If the Current Activity is not known, but is known for a date in the past, use the decay calculator located at <http://www.radprocalculator.com/Decay.aspx> to determine the Current Activity

Comments

Please see attached list.







**Ascertainment of Doses: Whole Body**

Provide a summary of the annual effective whole body radiation doses received by Nuclear Energy Workers (NEWs) and non-NEWs during the year ending December 31st. Provide the information in detail, as shown below.

NOTE: Please do NOT send personal information, such as social insurance numbers, etc. to CNSC.

	Number of Workers in each effective dose category							Dosimetry Service Provider ††	Maximum individual dose (mSv)
	(mSv)								
	BDL †	> BDL † and ≤ 0.5	> 0.5 and ≤ 1	> 1 and ≤ 5	> 5 and ≤ 20	> 20 and ≤ 50	> 50		
<b>Number of NEWs</b>	11	0	0	0	0	0	0	Health Canada - NDS	BDL
<b>Number of Non-NEWs</b>	2	0	0	0	0	0	0	Health Canada - NDS	BDL

† BDL = Below Detectable Limits for the dosimeter being used.

†† Enter the name of the dosimetry service provider. If a dosimetry service provider is not used, enter "ESTIMATED" and provide brief details on how dose estimates were derived in the comments area below.

Comments

Above readings are for the 12 month period ending September 30, 2019 based on the quarterly reporting from NDS. Non-NEW's consist of cleaning staff and a graduate student. Badges are also located in public spaces on main floor as area monitors. None of the area monitor badges have shown a reading above background.

The readings are lower than would normally be expected for two reasons.

- 1) The facility has not been producing FDG on a regular basis while they focus on getting the Health Canada license in place
- 2) The cyclotron was not operating for ~2 months due to the cyro-Compressor being sent out for servicing





**Ascertainment of Doses – Extremity Doses**

If your organization monitors workers for extremity exposures, provide a summary of the extremity doses received by NEWs and non-NEWs during the year ending December 31 st. Provide the information in detail, as shown below.

NOTE: Please do NOT send personal information, such as social insurance numbers, etc. to CNSC.

Check here if your organization has no extremity dose information to submit for the reporting period.

	Number of Workers in each effective dose category						Dosimetry Service Provider †	Maximum individual dose (mSv)
	(mSv)							
	<10	>10 and ≤ 50	> 50 and ≤ 100	> 100 and ≤ 200	> 200 and ≤ 350	> 350 and ≤ 500	> 500	
<b>Number of NEWs</b>	11	0	0	0	0	0	0	Health Canada - NDS 5
<b>Number of Non-NEWs</b>	2	0	0	0	0	0	0	Health Canada - NDS 0

† Enter the name of the dosimetry service provider. If a dosimetry service provider is not used, enter "ESTIMATED" and provide brief details on how dose estimates were derived in the comments area below.

Comments

The dose measurements reported are the sum of Left and Right hand doses.  
Readings are for the 12 month period ending September 30, 2018  
Reading of 0 for Non-new indicates BDL





### Workload - Isotope Production Accelerator

Provide a summary of the workload of isotope production accelerators during the reporting period for all operating modes. If you have exceeded your approved annual workload, please submit details in the comments area below, including an explanation as to why the approved workload was exceeded, and calculations showing that doses to persons in adjacent areas are still ALARA.

NOTE: In all cases, records of workload must be maintained for inspection by CNSC.

Target Identifier or Part No. <sup>1</sup>	µA-hours <sup>2</sup>	Annual production (GBq)	Number of batches/year	No. of target failures
LT - F18	1641	3234	46	0
STT - C-11	0	0	0	0
HC Target Station - Dummy target	0	0	0	0
Neutron activation Au-197 -> Au-198	note 1	0.01	11	0
<b>Totals</b>	1641	3234.01	57	0

NOTES:

1. The target Identifier listed here should match the Target Identifier in the "Part No." column of the Appendix: Licensed Targets on your licence
2. If reporting on dual-beam targets, provide the sum of µA-hours from both beams
3. If reporting on research/test/dummy targets, list each type of target individually
4. If different beam types were used with the same target, report each beam type on a separate line (i.e. research targets with proton beams, research targets with deuteron beam, etc.)

Comments

For the period from Nov 1, 2018 to October 31, 2019

Notes:

1) For Au-198 production is done concurrently with F-18 production. The current on the F-18 target was 809 µA-hours for the development of the gold activation process and is included with the F-18 totals. All Au-198 is allowed to decay in house.

Activity for gold is a conservative estimate based on Gamma-spec measurements. Activity was below the detection limits for our dose calibrator. The 11 batches for gold is also includes in the 46 batches of F-18.





**Transport Carriers**

List all carriers employed to transport radioactive materials for the purposes of this licence during the reporting period:

Carrier Name	Contact Telephone (ex. 123-456-7890)	Full name of Contact (if available)	Location of Carrier (City, Province)
Carrick Express Inc.	(807) 345-7331	carrickexpress@tbaytel.net	Thunder Bay, Ontario

NOTE: do not list all shipments, list only carriers used to transport packages during the reporting period. If using the same carrier, there should be only one entry in the table.

