



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

PROTECTED A when completed

Applicable CNSC licence number

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Annual Compliance Reporting Form

Select the applicable form from the dropdown list. ACR forms are customized for the activity authorized by the licence. The licensed activity name and number (e.g. "101 - Operate an industrial accelerator"), can be found on each licence under section IV) Licensed Activities.

If you need a hard copy of this ACR form, please contact your CNSC licensing officer at 1-888-229-2672.

Licensed Activity

616 - Operate and service an isotope production accelerator facility

Generate Form



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Declaration of Licensee Representative

I, **Michael Campbell**

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
Radiation Safety Officer

Date (YYYY-MM-DD)
2022-11-07

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

For questions related to the Accelerators and Class II Facilities Division (ACFD) ACR, contact your CNSC Project Officer.

When complete, please submit this form via email to acr-rac@cnsccsn.gc.ca.

Print Form

Submit by Email



ACR forms are intended to report the licensee's activity. To request an amendment, including changes in licensee's representatives (RSO, alternate, applicant authority, signing authority), please submit your request separately to the CNSC.



The ACR **can not** be used by licensees to request changes to the licence.

Any changes requiring a licence amendment or to comply with licence conditions must be submitted separately to the Project Officer when you become aware of the change.



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Licensee Organization Information

Licensee Name

Thunder Bay Regional Health Sciences Centre

Licensee Business Number

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Licensee Corporation Number

Reporting Period

There should not be any lapse from previous ACR reporting period. Do not report for future dates. The reporting period shall cover a full year.

From

2021-11-01

To

2022-10-31

Head Office Address

Street Address

980 Oliver Rd

City

Thunder Bay

Province/State

ON

Country

Canada

Postal/Zip Code

P7B6V4

Mailing Address

The mailing address is the address to which all CNSC correspondence will be mailed.

☐ Check here if same as Head Office Address

Street Address

1040 Oliver Road, Suite B1

City

Thunder Bay

Province/State

ON

Country

Canada

Postal/Zip Code

P7B7A5



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Radiation Safety Officer (RSO)

Name Michael Camobell		Title Radiation Safety Officer	
Telephone Number [REDACTED]	Alternate Telephone Number [REDACTED]	E-mail Address [REDACTED]	

Alternate (if applicable)

Please provide information of an alternate contact to the RSO in this section. The alternate contact can replace the the certified RSO during the RSO's absence for not more than 60 working days in any consecutive 365-day period. Refer to Class II Nuclear Facilities and Prescribed Equipment Regulations sections 15.1 and 15.11.
<https://laws.justice.gc.ca/eng/regulations/sor-2000-205/page-1.html>

☐ Check here if no alternate

Name Sonja Desjardins	Title Cyclotron Associate
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Contact information

Telephone Number [REDACTED]	Alternate Telephone Number [REDACTED]	E-mail Address [REDACTED]
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Signing Authority

The RSO is typically appointed as signing authority. The signing authority is authorized to act for the applicant or licensee for all matters encompassed by the CNSC licence.

☒ Check here if same as 'Radiation Safety Officer'

Name Michael Camobell	Title Radiation Safety Officer
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Contact information

☒ Check here if same as 'Radiation Safety Officer'

Telephone Number [REDACTED]	Alternate Telephone Number [REDACTED]	E-mail Address [REDACTED]
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Financial Contact (if applicable)

Information required only for fee paying licensees.

Name Peter Myllymaa	Title Executive Vice-President, Corporate Services and Operations
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Contact information

Telephone Number 806-684-6023	Alternate Telephone Number	E-mail Address myllymap@tbh.net
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Mailing Address

☐ Check here if same as 'Head Office' Address

Street Address
980 Oliver Road

City Thunder Bay	Province/State ON	Country Canada	Postal/Zip Code P7B6V4
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Applicant Authority

The applicant authority is an individual at the senior management level that has sufficient authority to direct financial and human resources to address any issue of non-compliance as identified by the CNSC. It is a regulatory requirement to notify the CNSC within 15 days of a change in the applicant authority. [Section 15 of the General Nuclear Safety and Control Regulations](#) under the Nuclear Safety and Control Act.

Name Peter Myllymaa	Title Executive Vice-President, Corporate Services and Operations
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Contact information

Telephone Number [REDACTED]	Alternate Telephone Number	E-mail Address myllymap@tbh.net
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Mailing Address

☐ Check here if same as 'Head Office' Address

Street Address
980 Oliver Road

City Thunder Bay	Province/State ON	Country Canada	Postal/Zip Code P7B6V4
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Inventory: Sealed Sources (List only sealed sources that are not contained in a radiation device)

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

☐ Check here if you currently have no sealed sources in inventory.

Date of inventory (YYYY-MM-DD)

2022-11-07

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 for templates.

List the total nominal activity for each batch of seed sources (e.g.: I-125, etc.) along with the total number of seeds in each batch in possession.

+	Sealed Source(s) List only sealed sources that are not contained in a radiation device						
	Manufacturer	Model	Serial Number (N/A for seed sources)	Nuclear Substance	Current Activity	Quantity (seed sources only)	Activity Units
-	please see attached						

For all sealed nuclear substances that have been transferred or disposed of during the reporting period, please include a copy of the transfer document with the ACR submission.

Additional information

please see attached



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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 (workers not designated as NEWs) during the year ending December 31st. Provide the information in detail, as shown below. Only report doses for staff working in Canada.

NOTE: Please do **NOT** send personal sensitive information, such as social insurance numbers, to the CNSC. If the total number of workers reported for NEWs or Non-NEWs is less than ten (10), do **NOT** report the maximum individual dose.

	Number of Workers in each effective dose category								
	BDL †	> BDL † and ≤ 0.5 mSv	> 0.5 mSv and ≤ 1 mSv	> 1 mSv and ≤ 2 mSv	> 2 mSv and ≤ 5 mSv	> 5 mSv and ≤ 20 mSv	> 20 mSv	Dosimetry Service Provider ††	Maximum Individual Dose (mSv) †††
Number of NEWs	10	4	0	0	0	0	0	Health Canada	0.26
Number of Non-NEWs	2	0	0	0	0	0	0	Health Canada	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 additional information area below.

††† Do not enter a non-personal dose that was the subject of a CNSC approved dose change request.

In accordance with the Radiation Protection Regulations, doses must be reported for a CALENDAR YEAR (January 1 to December 31). Please report your doses for the calendar year preceding your ACR due date (e.g. regardless of the ACR reporting date in licence condition 2912 on your licence, always report the doses for the period Jan 1 - Dec 31 of the previous calendar year).

Additional Information

For the period Jan 1, 2021 to Dec 31, 2021

Emails have been sent to all NEWs with their annual and lifetime doses

Non-NEW's consist of cleaning staff and a graduate student, graduate students monitored by direct read dosimeters.

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.



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Ascertainment of Doses – Extremity

Provide a summary of the annual equivalent extremity radiation doses received by Nuclear Energy Workers (NEWs) and non-NEWs (workers in position not designated as NEWs) during the year ending December 31st. Provide the information in detail, as shown below. Only report dose for staff working in Canada.

NOTE: Please do **NOT** send personal sensitive information, such as social insurance numbers, to the CNSC. If the total number of workers reported for NEWs or Non-NEWs is less than ten (10), do **NOT** report the maximum individual dose.

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

	Number of Workers in each effective dose category								
	< 10 mSv	≥ 10 mSv and ≤ 50 mSv	> 50 mSv and ≤ 100 mSv	> 100 mSv and ≤ 200 mSv	> 200 mSv and ≤ 350 mSv	> 350 mSv and ≤ 500 mSv	> 500 mSv	Dosimetry Service Provider †	Maximum individual dose (mSv) ††
Number of NEWs	10	4	0	0	0	0	0	Health Canada	48.43
Number of Non-NEWs	2	0	0	0	0	0	0	health Canada	BDL

† 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 additional information area below.

†† Do not enter a non-personal dose that was the subject of a CNSC approved dose change request.

In accordance with the Radiation Protection Regulations, doses must be reported for a CALENDAR YEAR (January 1 to December 31). Please report your doses for the calendar year preceding your ACR due date (e.g. regardless of the ACR reporting date in licence condition 2912 on your licence, always report the doses for the period Jan 1 - Dec 31 of the previous calendar year).

Additional Information

Readings are for the 12 month period ending Dec 31, 2021
Readings are the sum of left and right hand dosimeter rings
Non-NEWs were all BDL



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Workload - Isotope Production Accelerator

Provide a summary of the workload of the Class II prescribed equipment during the reporting period for all operating modes. If you have exceeded your approved annual workload, please submit details in the "Additional Information" 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 that in all cases, records of workload must be maintained for inspection by the CNSC.

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 for templates.

+					
	Target identifier or Part Number ¹	Annual uA-hours ²	Annual Production (GBq)	Number of batches/year	Number of targets rebuilt
-	LT	104.1	17,092	116	1
	Totals	104.1	17,092	116	1

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 uA-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.)

Additional Information

Above includes 8 runs producing N-13 to test equipment totaling 282 GBq of activity and 3h 20m run time



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Additional Information for Nuclear Substances and Class II Facilities

Please provide additional information related to the Class II prescribed equipment, as detailed below. Note that provision of this information is not a regulatory requirement; CNSC requests this information in order to examine nuclear-safety-related trends and to inform future compliance strategies.

+			
	Prescribed equipment Item Number ¹	Greatest extent servicing performed during the reporting period. ²	Radiation survey performed during reporting period? If yes, see Note 3.
-	1	Corrective	No

1. Refer to the sections of your licence entitled "Appendix: Nuclear Substances and Class II Prescribed Equipment" and "Appendix: Location(s) of Licensed Activities" to determine the item number of each piece of prescribed equipment. Report one item per row. Add additional rows as necessary.

2. The various extents of servicing are defined as follows:

- Not applicable: Not licensed to service Class II prescribed equipment
- None
- Preventive maintenance: Limited to basic servicing activities and periodic inspections
- Corrective maintenance: Limited to preventive maintenance, plus troubleshooting and limited repairs or adjustments
- Extensive servicing: Corrective maintenance, plus replacement of major components, refurbishment of Class II prescribed equipment, installation or replacement of the prescribed equipment or nuclear substances contained within the prescribed equipment, or dismantling of the prescribed equipment

3. Submit the results of the most recent radiation surveys performed during the reporting period or reference it if already submitted to the CNSC during the reporting period.

Additional Information



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Oversight Activities – Safety Performance Indicators

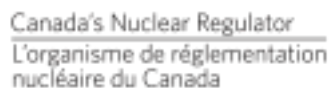
Provide information regarding any regulatory oversight activity performed during the reporting period. Note that provision of this information is not a regulatory requirement; CNSC requests this information in order to examine nuclear-safety-related trends and to inform future compliance strategies.

- ☒ Performed review of radiation safety policies and procedures
- ☒ Performed self-audit/inspection of radiation safety program¹
- ☐ Performed peer-audit/inspection of radiation safety program²
- ☒ Other (please describe)

Other regulatory oversight activity or additional information

Radiation Safety Training Provided to new students

1. Self audit/inspection is defined as an audit conducted by internal team members to determine the extent of compliance with the act, the regulations and the licence.
2. A peer audit/inspection is defined as an audit/inspection conducted by participants who have no direct responsibility in the work/process being audited in order to maintain objectivity.

**Applicable CNSC licence number**

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2	1	
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3	1	
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Provide information regarding any communication/outreach performed during the reporting period to inform members of the public of your licensed activities. Note that provision of this information is not a regulatory requirement; CNSC requests this information in order to examine nuclear-safety-related trends and to inform future compliance strategies.

Note: Only fill this table if the licence condition entitled *Public Information and Disclosure Program* is on your licence (LC-2901).

☐ Check this box if no information/outreach activities were performed during the reporting period.

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	Date	Activity
-	2022-07-08	Presentation on cyclotron and radiation to SHAD Valley students at Lakehead University ~150 students
-	2022-07-11	Virtual Cyclotron tour for SHAD Valley students at Lakehead University and remote experiment (determination of half-life) by zoom

Additional Information

2021 ACR posted to Public information website



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Transport Carriers

List all carriers employed to transport radioactive materials for the purposes of this licence during the reporting period. Note that provision of this information is not a regulatory requirement; CNSC requests this information in order to examine nuclear-safety-related trends and to inform future compliance strategies.

+				
	Carrier Name	Contact Telephone	Full name of contact (if available)	Location of Carrier (City, Province)
-	Carrick Express Inc.		carrickexpress@tbaytel.net	Thunder Bay, Ontario

Note: Do not list all shipments, list only carriers hired to transport radioactive materials for the purposes of this licence during the reporting period.
DO NOT include licensee employees in this list. If no carriers were hired, leave the table blank. If using the same carrier, there should be only one entry in the table.