

January 23, 2026

BP-CORR-00531-07200

Ms. Candace Salmon
Commission Registrar
Bruce Regulatory Program Division
Canadian Nuclear Safety Commission
P.O. Box 1046
280 Slater Street
Ottawa, Ontario
K1P 5S9

Dear Ms. Salmon:

Central Maintenance Facility:
Supplemental Information for the Commission Approval Related to the Hot Cell

The purpose of this letter is to provide supplemental information related to Bruce Power's request in Reference 1, as discussed with CNSC staff, including:

1. Clarification that Bruce Power is requesting Commission approval to perform additional tasks for lutetium 177 (Lu-177) production that were not considered in the previous Lu-177 production application (References 2, 3 and 4);
2. Description of differences from the previous Lu-177 production application (References 2, 3 and 4) that result from performing additional tasks at the Central Maintenance Facility (CMF);
3. Clarification that Bruce Power is requesting that the Commission approval is applied to tasks associated with Lu-177 production in all units within Bruce A and Bruce B stations; and,
4. Clarification that Bruce Power is not requesting Commission approval to produce isotopes other than Lu-177 at this time.

Clarification of Requested Approval

It should be noted that operation of a hot cell is not, strictly speaking, an activity that is licensable pursuant to the Nuclear Safety and Control Act. However, the application (References 2 and 3) and record of decision (Reference 4) restrict the licensing basis for production of Lu-177 such that Bruce Power is not authorized to perform certain tasks at the Bruce site (these tasks are currently performed offsite by other licensees).

Accordingly, Bruce Power is requesting that the Commission approve that Bruce Power can perform additional tasks for Lu-177 production at the Bruce site. Operation of the hot cell is intended to be an engineered barrier that ensures the safe performance of these tasks and will become a safety and control measure for the execution of these tasks if the Commission grants approval.

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Therefore, Bruce Power has requested Commission approval solely with respect to expansion of the licensing basis for production of Lu-177. Bruce Power is not seeking Commission approval with respect to any other licensed activities (i.e., operation of Bruce A and Bruce B).

Consistent with Reference 1, Bruce Power is not proposing an amendment of the licence to include a specific licence condition related to the operation of the hot cell, nor is Bruce Power proposing a change to the existing licence condition for Lu-177 production. Bruce Power instead expects that necessary safety and control measures can be included in the Licence Conditions Handbook.

Description of Differences Related to Additional Tasks

This clarification is intended to ensure that Bruce Power's request is clear. Bruce Power plans to perform the removal of the quartz ampule from the outer target carrier material in a hot cell at the CMF. Accordingly, the following is intended to highlight changes from Bruce Power's previous Lu-177 application (References 2 and 3) and the subsequent Commission approval for Lu-177 production (Reference 4). These items are reviewed here to ensure clarity in Reference 1 and to ensure understanding that Bruce Power's request encompasses the following changes:

- The previous descriptions of the high-level steps for Lu-177 production in the application (Reference 2) and the record of decision (Reference 4) implied that once targets were discharged from the system that they would be immediately packaged (in the vicinity of the Isotope Production System (IPS)) and shipped offsite for processing. The hot cell will additionally allow the removal of the target carrier material prior to shipment, which was previously completed by other licensees offsite. A description of how the existing licensed activities apply to these tasks is provided in Reference 1, Section 2.1. Governance for the operation of the hot cell and removal of the outer target carrier material will be developed, as discussed in Reference 1, Section 3.1.1. The intermediate steps to transfer material to the CMF and repackage after the removal of the outer target carrier material will be managed as per Reference 1, Section 3.14.
- Bruce Power did not previously envision performing activities related to isotope production at the CMF; however, Bruce Power believes the CMF is an appropriate location as discussed in Reference 1, Section 2.1. The use of the CMF for these activities will result in some differences to associated safety and control measures, including:
 - The application (Reference 2) indicated that there was no impact on site characterization as the system is completely contained within the reactor. This remains true, although the hot cell will allow some of the tasks supporting isotope production to be performed at CMF. This doesn't impact the overall site characterization, as discussed in Reference 1, Section 3.5.
 - The application (Reference 2) and record of decision (Reference 4) described the use of the station's contaminated exhaust stack and high-efficiency particulate air (HEPA) filters to prevent impacts on the environment, particularly in the accident scenario of a broken ampule. Similarly, the hot cell design uses HEPA filters to prevent any potential effluent release, as discussed in Reference 1, Sections 3.5 and 3.9, which are suitable in the rare event of a broken ampule.

- Similarly, the CMF is subject to its own Derived Release Limits / Environmental Actions levels under the environmental protection program and is subject to Action Levels / Administrative Dose Limits under the radiation protection program. These limits and levels differ from the stations' limits and levels. No changes to the environmental limits / levels are expected, as discussed in Reference 1, Section 3.9. Bruce Power may pursue changes to the radiation protection limits / levels in accordance with normal change control processes, but will not impact the intent of the controls to protect the environment, the public and workers.
- The record of decision (Reference 4) concluded that Bruce Power's emergency response workers will be able to respond effectively to emergencies at the IPS location. While the hot cell will be located at the CMF instead, the existing emergency preparedness program remains suitable, as discussed in Reference 1, Section 3.10.
- The application (Reference 2) indicated that workers accessing the IPS would be subject to the existing security practices, which included protected area access controls. The CMF is located outside of the protected area, but will still be subject to appropriate security controls, as discussed in Reference 1, Section 3.12.
- It was represented in the application (Reference 2) and the record of decision (Reference 4) that no radioactive waste will be generated at the Bruce Power site other than personal protective equipment. Other licensees are currently responsible for waste downstream in the supply chain. The outer target carrier material removed in the hot cell will now be waste, which is generated at the Bruce Power site prior to shipment. This waste will be managed using Bruce Power's existing waste management program as described in Reference 1, Section 3.11.
- The application (References 2 and 3) and the record of decision (Reference 4) indicated that targets will arrive and leave the site in the same form (i.e., encapsulated in target carriers). By removing the target carrier material onsite, the outgoing targets will differ physically from the incoming targets but can still be safely managed, including the packaging and transportation discussed in Reference 1, Section 3.14.

Production of Lu-177 in All Units

As the Commission has already approved the production of Lu-177 in all units (subject to the approved licensing basis and Licence Conditions G.1 and G.2), Bruce Power's request also applies to all units. While Bruce Power's application discusses current Lu-177 production in Bruce B Unit 7 and planned production in Unit 6, this was not intended as a limitation. Rather, Bruce Power's request to perform additional tasks related to Lu-177 production is intended to apply to all units.

Production of Other Isotopes

It was noted in Reference 1 that the hot cell may be used to support future isotope production. Bruce Power has not yet requested Commission approval to produce isotopes other than Lu-177 or cobalt 60 (Co-60). Until such an approval is obtained, it is understood that Bruce Power is not authorized to produce other isotopes nor authorized

to undertake tasks associated with such production. Bruce Power will pursue necessary approvals for other isotopes as discussed in Item 2 of Reference 5.

Summary

In summary, Bruce Power is requesting Commission approval to perform additional tasks for Lu-177 production. These tasks are described in Reference 1 and differ from the current licensing basis as described in the previous Lu-177 application (References 2 and 3) and the Commission approval for Lu-177 production (Reference 4).

Should the Commission grant the approval as requested, it is Bruce Power's understanding that the approval would apply to all units and would not authorize production of isotopes other than Lu-177.

If you require further information or have any questions regarding this submission, please contact Mr. Maury Burton, Senior Director, Regulatory Affairs, at (519) 386-2394 or maury.burton@brucepower.com.

Yours truly,



Digitally signed by Maury Burton
Date: 2026.01.23 10:38:42 -05'00'

Maury Burton
Senior Director, Regulatory Affairs
Bruce Power

cc: CNSC Forms / Formulaire
Ms. Anupama Bulkan, CNSC - Ottawa
Dr. Alexander Viktorov, CNSC - Ottawa

References:

1. Letter, M. Burton to C. Salmon, "Central Maintenance Facility: Commission Approval to Operate a Hot Cell", November 28, 2025, BP-CORR-00531-06949.
2. Letter, M. Burton to M. Leblanc, "Application for the Amendment of the Power Reactor Operating Licence", November 25, 2020, BP-CORR-00531-00982.
3. Letter, M. Burton to M. Leblanc, "Bruce A and B Lu-177 Isotope Project: Supplement to the Application for Amendment of the Power Reactor Operating Licence", June 3, 2021, BP-CORR-00531-01671.
4. Letter, CNSC Secretariat to M. Burton, "Nuclear Power Reactor Operating Licence Bruce Nuclear Generating Stations A and B - PROL 18.02/2028 - Record of Decision - Bruce Power Lu-177 - CMD 21-H100", September 22, 2021, e-Doc 6462573, BP-CORR-00531-02088.
5. Letter, M. Burton to C. Salmon, "Notice of Intent to Request Approval for a Hot Cell and Submit an Application to Amend the Power Reactor Operating Licence for New Isotopes", September 26, 2025, BP-CORR-00531-06582.