

November 28, 2025

BP-CORR-00531-06949

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

Dear Ms. Salmon:

Central Maintenance Facility: Commission Approval to Operate a Hot Cell

The purpose of this letter is:

- To request Commission approval to update the licensing basis to include the operation of a hot cell at the Central Maintenance Facility (CMF), pursuant to the Power Reactor Operating Licence, PROL 18.04/2028, Licence Condition G.1, the Licence Conditions Handbook LCH-PR-18.04/2028-R005, Section G.1; and,
- To request a panel hearing and decision by June 30, 2026.

Bruce Power is proposing to operate a hot cell at the CMF on the Bruce Power site. This hot cell will support activities authorized under the Bruce A and B PROL and will initially be used to remove the outer target carrier from the ampoule containing the lutetium-177 powder, as discussed in Reference 1. Currently, this work is being completed at offsite facilities, and Bruce Power is seeking to move this task on site to more effectively manage the logistics and reduce dose to workers and the public.

Bruce Power has assessed the operation of a hot cell against the licensing basis and summarized the impacts to the safety and control areas in Attachment A. The high-level conclusions were discussed informally with CNSC staff, and it was determined that Commission approval was required to revise the licensing basis. The notice of intent for this request was provided in Reference 2.

To safely manage the change to the licensing basis, Bruce Power has also proposed the inclusion of new safety and control measures for the hot cell in the Licence Conditions Handbook (LCH). The proposed revisions to the LCH will be a separate submission to CNSC staff.

Bruce Power is proud to have a historic partnership with the Saugeen Ojibway Nation (SON), in which SON invests in the isotope program and receives a sustained revenue stream to support local development projects.

Ms. C. Salmon

November 28, 2025

Once operational, Bruce Power will look to advance the allowable nuclear substances in the hot cell, for example, as part of the diversification to new isotopes discussed in Reference 2, pending future Commission approval. Ultimately, Bruce Power's goal is to leverage this radiation protection equipment to support our commitment to minimize radiation exposure to As Low As Reasonably Achievable (ALARA).

Bruce Power requests a panel hearing and decision by June 30, 2026, to support the lutetium-177 program by enabling removal of target carriers on site as soon as possible. This timeline is essential to help reduce worker exposure, enhance safety, and improve logistics, as the targets are currently being shipped to various locations within Ontario.

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](mailto:maury.burton@brucepower.com).

Yours truly,

**Lisa Clarke**  
Digitally signed by  
Lisa Clarke  
Date: 2025.11.28  
14:01:00 -05'00'

Maury Burton  
Senior Director, Regulatory Affairs  
Bruce Power

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

Attach.

References:

1. Letter, M. Burton to A. Bulkan, "Bruce B: Regulatory Communication Plan (RCP) for the Lutetium-177 Program Projects", October 17, 2025, BP-CORR-00531-06455.
2. 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.

**Attachment A**

**Supporting Information for the Approval of the Operation of the Hot Cell at  
the Central Maintenance Facility**

**Attachment A:  
Supporting Information for the Approval of the Operation of the Hot Cell at the Central  
Maintenance Facility**

**Executive Summary**

Bruce Power is Canada's only private-sector nuclear generator, producing 30 percent of Ontario's electricity, and is a global leader in the production of medical isotopes, including cobalt-60 (Co-60) and lutetium-177 (Lu-177). The company's Canadian-owned partnership operates with a strong commitment to safety first and environmental stewardship with a focus on transparency and public engagement, including partnerships with Indigenous Nations and communities.

Bruce Power is requesting regulatory approval to operate a hot cell at its Central Maintenance Facility (CMF), to enhance isotope production by allowing for safer, on-site repackaging of Lu-177 targets. The hot cell is designed to protect workers, the public and the environment, and will be used for handling, packaging, and storing radioactive materials under appropriate safety and control measures.

The operation of the hot cell at the CMF represents a significant advancement in Bruce Power's isotope production capabilities and its commitment to safety by assuring As Low As Reasonably Achievable (ALARA) through radiation protection. To ensure safe and compliant operations, Bruce Power must conduct all hot cell activities in accordance with a defined licensing basis, which encompasses regulatory requirements, licence conditions, and supporting safety documentation, as mandated by the Canadian Nuclear Safety Commission (CNSC).

Currently, Bruce Power is authorized to possess, transfer, use, package, manage, and store nuclear substances associated with the operation of Bruce A and Bruce B, as well as the production of medical isotopes such as cobalt-60 and Lu-177. The company has demonstrated its qualifications and robust provisions for environmental protection, worker safety, and national security.

While hot cell operations share similarities with existing practices, the introduction of this facility marks a new tool in Bruce Power's radiation protection program and its commitment to the principle of ALARA. Accordingly, Bruce Power is seeking Commission approval to extend its licensing basis to include hot cell activities, supported by a comprehensive Regulatory Communication Plan and ongoing stakeholder engagement.

The hot cell is designed to safeguard both workers and the public during the handling of nuclear substances, with a particular focus on Lu-177 target management and target carrier removal (TCR). Bruce Power intends to leverage the hot cell's capabilities to enhance safety across a broader range of nuclear substances, ensuring that any new activities remain within the established licensing basis and are communicated to CNSC staff as required.

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## 1.0 INTRODUCTION

Bruce Power is Canada's only private-sector nuclear generator, operating one of the world's largest nuclear facilities on the eastern shore of Lake Huron near Tiverton, Ontario. Established in 2001, Bruce Power is a partnership among TC Energy, OMERS (Ontario Municipal Employees Retirement System), the Power Workers' Union, and The Society of United Professionals. A majority of employees are also owners of the business.

Bruce Power's mission is "to safely provide clean, affordable, reliable power and life-saving medical isotopes while strengthening our communities and protecting the environment to secure tomorrow." In support of this mission:

- The company annually produces about 30 percent of Ontario's electricity, providing reliable, carbon-free energy to homes, hospitals, schools, and businesses across the province.
- Bruce Power's current operations support 22,000 jobs in Ontario directly and indirectly.
- Bruce Power is a global leader in the production of medical isotopes, including Co-60 and Lu-177, which are used for sterilization of medical devices and cancer treatment. The company's innovative Isotope Production System (IPS) was the first commercial power reactor to produce Lu-177, reinforcing Canada's leadership in the global medical isotope supply chain. Bruce Power produces Lu-177 in a historic partnership with the Saugeen Ojibway Nation, who invest in the isotope program and receive a sustained revenue stream to support community priorities.
- Major ongoing Bruce Power investments include the Life Extension Program, which supports 5,000 jobs and will refurbish six of its eight units, ensuring reliable energy and isotope supply through 2064.



*Figure 1 – Bruce B Generating Station*

The company is deeply committed to safety, operational excellence, and environmental stewardship. Its management system is designed to ensure the protection of the health, safety, security, the environment, and compliance with national security and international obligations. Bruce Power's operations are guided by a strong safety culture, continuous improvement, and transparent communication with interested parties.

Bruce Power's site is located within the traditional territory of the Saugeen Ojibway Nation (SON) the shared treaty and traditional territory of the Chippewas of Saugeen First Nation and Chippewas of Nawash Unceded First Nation (Neyaashiinigmiing). Bruce Power is dedicated to honouring Indigenous history and culture and committed to moving forward in the spirit of reconciliation and respect with Indigenous communities it works with. Bruce Power is committed to strong and respectful relationships with the SON, the Métis Nation of Ontario (Region 7) and Historic Saugeen Métis. This includes building meaningful relationships with Indigenous Nations and communities. Through partnerships and initiatives, Bruce Power supports local employment, education, and economic development.

## 1.1 Isotope Production

Bruce Power operates an innovative IPS, designed specifically for CANDU reactors, for the production of Lu-177. An operator uses the IPS to insert and retrieve targets while the reactor is online. The irradiated targets are packaged and transported for off-site processing at another facility.

Lu-177, a radioactive isotope, is a key constituent of advanced prostate and neuroendocrine cancer treatment. The radioactive Lu-177 atoms are linked to targeting molecules, which are administered in the body and selectively accumulate at the disease site. The Lu-177 atoms then emit beta particles, which destroy the cancer cells. In Canada, Lu-177 is currently being used in the form of the approved radiopharmaceutical, Lutathera and Pluvicto, to treat neuroendocrine tumours and prostate cancer.

The IPS is a result of Bruce Power's partnership with Isogen (a Kinectrics and Framatome company). Bruce Power is responsible for operation of the IPS and packaging of the irradiated targets for shipment, providing what is a commercial irradiation service.

Bruce Power has seamlessly transitioned to the operation of the IPS through leveraging the extensive experience and knowledge that Bruce Power personnel have in reactor operations, radiation and conventional safety, and the production, harvesting, and transportation of Co-60. Bruce Power became the first commercial nuclear operator to produce Lu-177 in October 2022, using the IPS installed in Bruce B Unit 7. Since the start of commercial operation, the IPS has delivered a stable, reliable supply of Lu-177, with no missed shipments to Isotope Technologies Munich (ITM), the global distributor, supporting cancer treatment worldwide.

Since the program's inception, Bruce Power and its partners (SON, Isogen, ITM) have improved the system to increase production capacity. The IPS now supports flexible irradiation schedules and higher specific activity per target, enabling more doses per production cycle. This was made possible by:

- Increasing the amount of starting material per target,
- Extending irradiation time in the reactor core; and,
- Installing a second production line in Unit 7, which doubled output to meet rising global demand.

This year, Bruce Power has been actively working on continuing to improve the program with the following initiatives:

- Changing the target carrier material change from aluminum to titanium,
- Installing an additional IPS on Unit 6; and,
- Diversifying to the production of new isotopes.

## 1.2 Application for Commission approval

Bruce Power is requesting Commission approval to operate a hot cell at the CMF (building B12). This hot cell will be used to support activities authorized under the Bruce A and B PROL and will initially support the expanding isotope production business line - specifically target carrier removal (TCR) from the Lu-177 ampoules, which is a process also known as repackaging.

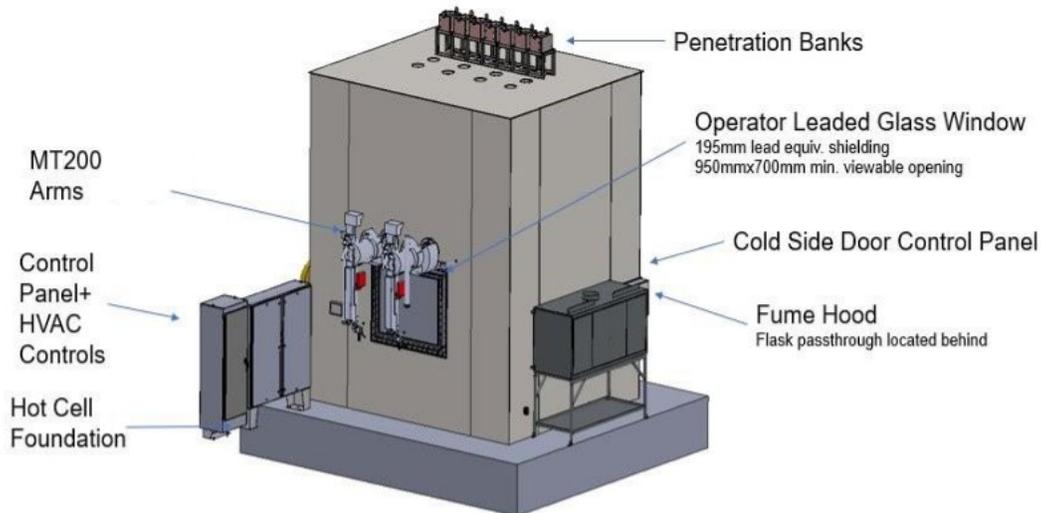


Figure 2 – 3D Rendering of a Hot Cell

This application below discusses the impact of hot cell operation on the suite of CNSC Safety and Control Areas (SCAs), as determined by program leads and subject matter experts as part of a review of the proposed operation.

The review is divided into two sections: general Licence Conditions of the Power Reactor Operating Licence PROL 18.04/2028 are discussed in Section 2, and the SCA-specific licence conditions are discussed in Section 3, organized by Specific Area as associated with each SCA. Note that each licence condition is quoted in italics.

Additionally, Bruce Power documents which require notification per the Licence Conditions Handbook (LCH) LCH-PR-18.04/2028-R05 are also cited in Section 3. Anticipated impacts, if any, to those documents, or other Bruce Power documents not cited in the LCH, are identified within each application sub-section. In some cases, a negligible impact is identified for a Specific Area, indicating no impact or no substantive impact with extremely minor document updates to be made. The facility specific impacts can be found in Section 4.

## 2.0 IMPACT ON GENERAL LICENCE CONDITIONS

### 2.1 Licensing Basis for the Hot Cell at CMF (G.1)

*The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:*

- (i) the regulatory requirements set out in the applicable laws and regulations;*
- (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;*

(iii) *the safety and control measures described in the licence application and the documents needed to support that licence application; unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter “the Commission”).*

Bruce Power is currently authorized to possess, transfer, use, package, manage and store nuclear substances that are required for, associated with, or arise from operating Bruce A and Bruce B as well as possess, transfer, use, package, manage and store nuclear substances that are required for, associated with, or arise from producing Co-60 and Lu-177. Bruce Power has demonstrated that it is qualified to perform these activities and has adequate provisions in place to protect the environment, the health and safety of persons and the maintenance of national security and international obligations.

While the operation of the hot cell is similar to tasks currently performed by Bruce Power workers, it represents a new tool to support Bruce Power’s radiation protection program and our commitment to ALARA. As such, Bruce Power is pursuing Commission approval to extend the licensing basis to include the operation of a hot cell. In Reference A1, Bruce Power submitted a Regulatory Communication Plan to CNSC staff that outlines the project and all associated technical deliverables that will be submitted.

The hot cell is designed to safeguard both the environment and the health and safety of workers and the public during the handling of nuclear substances. This request focusses on the possession, transfer, use, packaging, management, and storage of Lu-177 targets, as well as the removal of target carriers from ampoule bodies—an activity known as TCR.

While the hot cell’s primary role has been established for the Lu-177 program, Bruce Power intends to leverage its radiation protection capabilities to enhance worker safety across a broader range of nuclear substances. Accordingly, this application is not intended to limit the licensing basis associated with operation of the hot cell to activities associated with Lu-177. However, should Bruce Power intend to expand operation of the hot cell (for example, as may be associated with production of isotopes to be authorized in the future, or for other current operational purposes not related to isotope production), Bruce Power will evaluate the changes in accordance with established processes. When necessary, Bruce Power will notify CNSC staff of the change in accordance with Licence Condition G.2, Notification of Changes, as outlined in Section 2.2 below, in order to explain how it has been concluded that the work remains within the licensing basis overall. See Section 3.7.4 for more information on the radiological controls associated with proposed operation of the hot cell.

The existing authorized activities relate to the operation of the hot cell as follows:

- Possess: Bruce Power is authorized to possess Lu-177 targets and associated nuclear substances, including radioactive ytterbium-176 (Yb-176) oxide targets. Possession refers to having these materials on-site, both before and after irradiation, within the IPS, hot cell and designated storage areas.
- Transfer: transfer involves moving Lu-177 targets and ampoules between different locations on-site (e.g., from the reactor to the hot cell at the CMF) and preparing them prior to transfer to a third party for shipping off-site to processing facilities. Transfers are conducted using shielded packages and follow strict protocols to ensure containment and dose minimization. All transfers must comply with the Conditional Transfer Permit process and regulatory requirements for radioactive materials.
- Use: use refers to the handling of Lu-177 targets within the IPS and hot cell. This would include TCR and other isotope production activities. The hot cell enables safe manipulation of highly radioactive materials, protecting workers and the environment during these operations. It is noted that the LCH clarifies that Bruce Power is not authorized to use radioactive prescribed substances in or on human beings.

- **Package:** packaging is the process of securely enclosing irradiated Lu-177 targets and ampoules in certified transport containers (such as ISORAD) for shipment off-site. Packaging must meet CNSC and International Atomic Energy Agency (IAEA) standards for Type B containers, ensuring containment and radiation shielding.
- **Manage:** manage encompasses all activities related to the oversight, documentation, and control of Lu-177 targets and associated substances. This includes inventory tracking, compliance with procedures, reporting to CNSC, and ensuring all handling is performed by trained and qualified personnel.
- **Store:** store refers to the secure retention of Lu-177 targets, ampoules, and any associated waste (such as target carrier material, assumed to be titanium) within designated, controlled areas at the Bruce B station or within CMF. Storage practices are designed to minimize radiation exposure and environmental impact, with waste held until it is freely releasable or ready for disposal.

The maximum quantity of the incoming (Yb-176) targets is based on the amount that can be accommodated in inventory, as per usable design space and storage, prior to being inserted into the IPS. The maximum quantity of outgoing irradiated (Lu-177) targets was based on the amount that can be accommodated in the reactor components, storage containers. However, outgoing targets may also be temporarily stored in the hot cell, increasing Bruce Power’s overall capacity as shown in Table 1 and as discussed in Reference [RCP]. The maximum quantity of radioisotopes associated with production of Lu-177 is incorporated into BP-PROC-01120, Management of Luteium-177 Production. Future changes to the maximum quantity of radioisotopes are subject to written notification to the CNSC in accordance with established processes and Licence Condition G.2.

**Table 1**

<b>Dominant Nuclear Substance</b>	<b>Form</b>	<b>Maximum Quantity per Unit</b>
Incoming radioactive target: ytterbium-176	Powder form encapsulated in target carrier	300
Outgoing irradiated target: lutetium-177	Powder form encapsulated in target carrier	464 <i>(previously 348)</i>

*Please note: the limit of maximum quantity per unit is at any given time, not a throughput per calendar year.*

As part of the expanded isotope production activities at Bruce Power, waste may be generated from the use of target carriers associated with TCR process of the Lu-177 targets. This waste was previously at other vendor locations where the TCR process was performed off-site. Once the hot cell is in operation at the Bruce Power site, the target carriers remaining after the removal of the ampoules will be initially stored within the hot cell at the CMF to ensure dose minimization for workers.

The plan for waste management will ensure that the target carriers are securely contained until their radioactivity has decayed to levels that permit free release or final disposal, in accordance with BP-PROG-12.05, Radiation Protection Program.

Bruce Power is planning a staged approach; the carriers are expected to remain in the hot cell for enough time to allow significant radioactive decay, and then the carriers will be transferred to a temporary shielded storage flask. Further details on the waste strategy are provided in Section 3.11.1.

The CMF is located within Bruce Power’s site perimeter at “Centre of Site”, and is a specialized building dedicated to supporting the maintenance, refurbishment, and operational reliability of Bruce A and B, which Bruce Power has control over. When Bruce Power assumed the site in 2001, the CMF had a Waste Nuclear Substance Licence, which was subsequently amalgamated in the Class 1A Power Reactor Operating Licence (PROL) in 2017. This demonstrates the functionality of CMF and its ability to continue to handle radioactive materials from the stations.

CMF core functions and features include:

#### Maintenance and Refurbishment

The CMF is equipped for mechanical custom fabrication, welding, and repair of reactor components and tooling. It provides a controlled environment for the inspection, maintenance, and overhaul of equipment used in the reactors and associated systems. The facility supports the Major Component Replacement (MCR) program, which involves the replacement and refurbishment of key reactor components to extend the operational life of Bruce Power's units.

#### Support for Outage and Life-Extension Projects

During scheduled outages, the CMF is used to store, maintain, and test equipment and tooling between outages. This ensures that all components are in optimal condition for use during maintenance windows and major refurbishment projects. The CMF plays a critical role in the Life Extension Program, helping to secure the site's operation until 2064 by enabling efficient and high-quality maintenance activities.

#### Radiological Safety

The Radiation Protection program, BP-PROG-12.05 applies at the CMF. Specifically with the hot cell, the hot cell will be equipped with radiation monitoring, including remote monitoring and radiation detection devices.

#### Safety Systems and Procedures

The CMF is equipped with advanced fire detection and protection systems, active ventilation, and service/instrument air systems to ensure safe operations and compliance with regulatory standards.

#### Planned Hot Cell Operations

The CMF will house the hot cell, a shielded enclosure designed for handling highly radioactive materials. The hot cell supports isotope production activities, such as the TCR of Lu-177 ampoules, and may be used for other nuclear substances in the future.

Other specific impacts on Safety and Control Areas (SCAs) are discussed in more detail in Section 3.0.

## **2.2 Notification of Changes (G.2)**

*The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.*

As stated, this document provides supporting information to extend the licensing basis of PROL 18.04/2028, in accordance with Licence Condition G.1, to operate the hot cell. Should there be any future changes to the operation of the hot cell, Bruce Power will evaluate these changes against the licensing basis and provide prior notification of the change in accordance with Licence Condition G.2, if required. This includes expanding the use of the hot cell to work other than the TCR.

## **2.3 Land Use and Occupation (G.3)**

*The licensee shall control the use and occupation of any land within the exclusion zone.*

The hot cell will be located within the CMF (building B12), which is located roughly in the center of Bruce site, outside of the exclusion zone for Bruce A and Bruce B. However, the CMF is located within the site perimeter fence, and thus Bruce Power can guarantee the related safety and control measures in Section 3.



Figure 3 – Aerial view of Bruce Nuclear Generating Site, CMF location and site perimeter

## 2.4 Office for CNSC Onsite Inspectors (G.4)

*The licensee shall provide, at the Bruce site and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of Bruce A and B (onsite Commission staff).*

There is no change to the office for CNSC Onsite Inspectors because of the operation of a hot cell at CMF.

## 2.5 Public Information and Disclosure (G.5)

*The licensee shall implement and maintain a public information and disclosure program.*

There is no change to the public information and disclosure program due to the operation of a hot cell at CMF; however, it is being leveraged to manage both stakeholder and Indigenous engagement.

### 2.5.1 Stakeholder Engagement

Bruce Power has demonstrated a robust commitment to stakeholder engagement throughout the development of the hot cell at the CMF. Internally, the company has proactively informed and involved staff by hosting targeted information sessions for CMF workers, producing podcasts and internal news and intranet articles, and installing clear signage to communicate the new hot cell's location and purpose.

Externally, Bruce Power has actively participated in conferences and meetings, and leveraged news media to ensure the broader public is well-informed about the installation and future operation of the hot cell at the Bruce site. These efforts reflect Bruce Power's dedication to transparency, collaboration, and open communication with all stakeholders.

## **2.5.2 Indigenous Engagement**

Bruce Power is located within the traditional territory of the Anishinaabe people of the SON, including the Chippewas of Nawash (Neyaashiinigmiing) Unceded First Nation and the Chippewas of Saugeen First Nation. Bruce Power is committed to honouring Indigenous history and culture, as well as moving forward in the spirit of reconciliation and respect with Indigenous communities we work with. We are committed to strong and respectful relationships with the SON, the Métis Nation of Ontario (Region 7) and Historic Saugeen Métis.

Beginning in 2019, Bruce Power and the SON established the Gamzook'aamin aakozwin partnership, a groundbreaking collaboration to advance the global fight against cancer through the production and marketing of medical isotopes—most notably Lu-177, a cancer-fighting isotope used in precision oncology.

Throughout 2024-2025, the partnership expanded with new investments in isotope production infrastructure, including a second production line at Bruce Power's Unit 7. This expansion was supported by Canada's Strategic Innovation Fund and will double production capacity, ensuring a stable supply of Lu-177 even during scheduled outages. The expansion is designed to meet growing global demand for cancer-fighting isotopes and to further strengthen SON's role in the project.

Bruce Power meets quarterly with SON and provides updates regarding ongoing projects and items at Bruce Power. During the meetings in May 2025, October 17, 2025, and October 24, 2025, Bruce Power provided the update of the hot cell installation and operation for the isotope program. Bruce Power also held two open houses (including information handouts) in the Chippewas of Nawash (Neyaashiinigmiing) Unceded First Nation and the Chippewas of Saugeen First Nation communities and informed them of the hot cell installation and operation on October 27, 2025, and October 28, 2025.

Bruce Power meets quarterly with the Métis Nation of Ontario and provides updates regarding ongoing projects and items of interest at Bruce Power. During the October 1, 2025, meeting, Bruce Power provided an update regarding the planned hot cell installation and operation for the isotope program. At this time, no concerns have been raised.

Bruce Power meets quarterly with Historic Saugeen Métis and provides updates regarding ongoing projects and items of interest, including the hot cell, at Bruce Power.

## **3.0 IMPACT ON SAFETY AND CONTROL AREAS**

This document provides supporting information for the notice of intent submitted to the CNSC (Reference A2), pursuant to the PROL 18.04/2028, Condition G.1, and the associated Licence Conditions Handbook, LCH-PR 18.04/2028 R004, Section G.1.

### **3.1 MANAGEMENT SYSTEM**

*The licensee shall implement and maintain a management system.*

### 3.1.1 Management System

The Bruce Power Management System (BPMS) is documented in BP-MSM-1, Management System Manual, and a suite of business programs, which are considered second tier of documents in the BPMS. Each program is, in turn, a suite of related procedures and processes that are managed collectively. The governance provided by the BPMS controls changes to interdependent processes, organizational structure, and document structures that are essential to managing business.

The BPMS describes the structure of Bruce Power, as well as its key processes and expectations. It defines how all aspects of the business align in an integrated manner and drives Bruce Power towards excellence. The BPMS supports the enhancement and improvement of safety culture, excellence in worker performance, and the achievement of nuclear safety, security, and business results.

By design, the BPMS contributes to the establishment of a healthy culture for nuclear safety and security. The BPMS assures that the "Four Pillars" of nuclear safety (reactor, environmental, industrial, and radiological safety) and nuclear security are met during normal operations, as well as during abnormal events.

The BPMS complies with CSA Standard N286-12, Management System Requirements for Nuclear Facilities. CSA N286-12 is based on generic management system principles, as well as specific requirements for various facilities (including high energy reactor facilities such as the Bruce Nuclear Generating Stations). The general principles and specific requirements are satisfied through the BPMS suite of programs and implementing procedures.

Aspects of the Management System, described in the LCH (LC 1), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Management System Manual	BP-MSM-1
Conduct of Business	BP-PROG-16.01
Supply Chain	BP-PROG-05.01
Compliance Internal Audit	BP-PROG-15.01
Project Management and Construction	BP-PROG-14.01
Contractor Management	BP-PROG-14.02 *
Organization Structure Change	BP-PROC-00001
Quality Assurance Program	BP-PROG-17.01

*\*This document is now obsolete per Reference A3 and will be removed from LCH during its next revision.*

The hot cell safety and control measures will be reflected in the Radiation Protection Program, BP-PROG-12.05.

### 3.1.2 Organization

Bruce B operators, who currently operate the IPS and handle the Lu-177 work within the station, will complete the hot cell tasks at CMF to remove the target carrier from the quartz ampoule. Operators are being trained on hot cell specific information. For more information on training, see Section 3.2.2. There will be negligible impact to the organization Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.1.3 Performance Assessment, Improvement and Management Review**

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the Performance Assessment, Improvement and Management Review Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.1.4 Operating Experience**

Bruce Power has gained operating experience (OPEX) on the IPS and Lu-177 production from the past three years of operation since the previous Licence Amendment Application (Reference A4). OPEX is captured in Station Condition Reports (SCR).

Bruce Power, in partnership with Isogen, have worked closely to review and understand the OPEX from the facilities that are currently completing the target carrier removal activities to incorporate it in the Bruce Power process. There is negligible impact on the OPEX Specific Area because of the activities that will be conducted at the CMF and the hot cell.

### **3.1.5 Change Management**

The Lu-177 program has gone through several enhancements since the start of commercial operation in 2022. This program follows BP-STND-00242, Programs, General Practice Documents and Supporting Documentation, when updating documentation associated with the Lu-177 program, BP-PROC-01120, Management of Luteium-177 Production, and BP-PROG-18.01, Irradiation Services. Once the new procedure is created it will be similarly managed in accordance with Bruce Power's processes.

There is negligible impact on the change management Specific Areas because of the activities that will be conducted at the CMF and at the hot cell.

### **3.1.6 Safety Culture**

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the safety culture Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.1.7 Configuration Management**

Bruce Power followed the Engineering Change Control (ECC) process for the hot cell design change. Further details are discussed in Section 3.5.1.

There is negligible impact to the configuration management Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.1.8 Records Management**

All records generated by the hot cell installation project and Lu-177 program are kept in accordance with relevant Records Retention Authorization (RRA) within Content Server at Bruce Power.

There is negligible impact on the record management Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.1.9 Management of Contractors

Bruce Power has a contract with the vendor, Kinectrics Inc., for the hot cell project which encompasses the design, procurement, installation, commissioning, and training of staff to ensure they are fully qualified to safely operate and maintain the hot cell. Bruce Power will be following the processes of BP-PROG-14.01, Project Management & Construction, for the hot cell project.

There is negligible impact to the management of contractors Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.1.10 Business Continuity

BP-BC-00037, Business Continuity Plan, Irradiation Services, has assessed the potential for lost revenue if Lu-177 were not produced. The target carrier removal services would add a negligible increase to the impacts that have already been assessed.

There is negligible impact on the business continuity Specific Area because of the activities that will be conducted at CMF and the hot cell.

## 3.2 HUMAN PERFORMANCE MANAGEMENT

*The licensee shall implement and maintain a human performance program.*

### 3.2.1 Human Performance Program

Bruce Power's standards for human performance are governed by BP-PROG-16.01, Conduct of Business, which describes a system of interrelated inputs whose purpose is to protect the individual from causing errors through managing defences. Standards governed by BP-PROG-16.01 detail the hierarchy of defences that include engineered, administrative, cultural, and oversight controls. As a last line of defence, the standard describes the various human performance tools, which are used to anticipate, prevent and detect errors before they cause harm to people, the plant, property or the environment.

Aspects of the Human Performance Program, described in the LCH (LC 2), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Limits to Hours of Work	BP-PROC-00005
Conduct of Business	BP-PROG-16.01
Human Resources Management	BP-PROG-02.01
Fitness for Duty	BP-PROC-00610

The goal of human factors engineering work is to analyze and evaluate the elements that impact human performance, system usability, and to make recommendations, where possible, to improve the elements in compliance with CSA N290.12-14, Human Factors in Design for Nuclear Power Plants, and in accordance with BP-PROC-01116, Human Factors Engineering Program Plan. Human factors has followed the ECC process, adding recommendations throughout the design, with the final report being completed after detailed design is finished.

### 3.2.2 Personnel Training

*The licensee shall implement and maintain training programs for workers.*

Aspects of the Personnel Training Program, described in the LCH (LC 2), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Worker Learning and Qualification	BP-PROG-02.02
Systematic Approach to Training Process	BP-PROC-01071

The training change management process is documented and governed in BP-PROG-02.02, Worker Learning and Qualification. The work plan was developed to meet the requirements of REGDOC-2.2.2, Personnel Training. Bruce Power's systematic approach to training (SAT) ensures identified training needs are analyzed, and appropriate performance-based training is designed, developed, implemented and evaluated.

A training needs analysis (TNA) has been developed and identified the work groups and training required for hot cell operation and maintenance. Kinectrics will provide training for the operation of the hot cell, including both classroom and hands-on learning. This training has been initiated and is ongoing.

Bruce Power is responsible for continuing training for required personnel. The proficiency learned from the IPS and Lu-177 operators will be extended to the hot cell. There are negligible impacts to the personnel training Specific Area as a result of the activities that will be conducted at the CMF and the hot cell.



*Figure 4 – Operations staff testing out the manipulator arms*

### 3.2.3 Personnel Certification

The operation of the hot cell will be performed by non-certified operators; therefore, none of the written notification documents in LC 2.4 apply. There is negligible impact to the Personnel Certification Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.2.4 Initial Certification Examination and Requalification Tests

The operation of the hot cell will be performed by non-certified operators, therefore, none of the written notification documents in LC 2.4 apply. There is negligible impact to the initial certification examination and requalification tests Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.2.5 Work Organization and Job Design

Senior management completed staffing verification to ensure that the required headcount for the isotope program will be increased. This increased headcount will be responsible for both the operation of the IPS and operation of the hot cell. There is negligible impact to the Work Organization and Job Design Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.2.6 Fitness for Duty

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the fitness for duty Specific Area because of the activities that will be conducted at CMF and the hot cell.

## 3.3 OPERATING PERFORMANCE

*The licensee shall implement and maintain an operations program, which includes a set of operating limits.*

### 3.3.1 Conduct of Licensed Activities

Bruce Power conducts licensed activities in a manner that complies with legal requirements, ensuring the protection of workers, the public, and the environment.

Aspects of the conduct of licensed activities, described in the LCH (LC 3), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Operating Policies and Principles – Central Maintenance and Laundry Facility	BP-OPP-00003
Bruce Power Safeguards Site Plan 2015	NK37-CORR-00531-02784

### 3.3.2 Procedures

BP-OPP-00003 will be reviewed to assess any potential impacts. Should impacts be identified, they will be communicated to CNSC staff through the established written notification process.

The management and operation of all supporting documentation, equipment, and utilities up to the hot cell will be governed by BP-PROG-05.03, Site Services, and implemented via BP-STND-00225, Centre

of Site Operations. A dedicated operating manual is being developed to support both the hot cell and the TCR process for the Lu-177 program, including procedures for scenarios such as a broken quartz ampoule. These procedures are currently in draft form and will be validated according to established protocols. Additionally, a new procedure, as outlined in Section 3.7.4, will be created to define the boundaries and requirements for hot cell operations.

BP-PROC-01120, Management of Lutetium-177 Production, under BP-PROG-18.01, Irradiation Services, will be updated to reflect changes in the Lu-177 production process at the Bruce Site.

The activities conducted at CMF and within the hot cell are expected to have negligible impact on area-specific procedures.

### **3.3.3 Reporting Requirements**

*The licensee shall notify and report in accordance with CNSC regulatory document REGDOC-3.1.1, Reporting Requirements for Nuclear Power Plants.*

Any events that occur in the CMF will be evaluated against the criteria in REGDOC-3.1.1 and reported if necessary. There is negligible impact to the Reporting Requirements Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.3.4 Outage Management Performance**

The hot cell is being installed at the CMF, outside of the stations. As such, there is negligible impact to the outage management performance Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.3.5 Safe Operating Envelope**

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the safe operating envelope (SOE) Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.3.6 Severe Accident Management and Recovery**

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the severe accident management and recovery Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.3.7 Accident Management and Recovery**

There is minimal change from the previous Licence Amendment Application (Reference A4) and negligible impact to the accident management and recovery Specific Area because of the activities that will be conducted at CMF and the hot cell.

## **3.4 SAFETY ANALYSIS**

*The licensee shall implement and maintain a safety analysis program.*

Bruce Power integrates deterministic safety analysis (DSA) and probabilistic safety assessment (also known as probabilistic risk assessment) to ensure nuclear safety requirements are defined for issues that may impact the station's design basis or safety analysis basis. The safety analysis verifies that regulatory requirements (such as dose limits) are met, to assist in defining the SOE, and to verify that special safety systems and safety-related systems can perform their mitigating role for design basis accidents (DBA).

Aspects of the safety analysis, described in the LCH (LC 4), will apply to the operation and use of the hot cell.

### **3.4.1 Deterministic Safety Analysis**

DSA is performed, in accordance with REGDOC-2.4.1, Deterministic Safety Analysis. A generic final safety analysis report is being prepared for submission to CNSC staff, and the report concludes that the radiological consequences are within the accident-dependent reference public dose limits specified in the siting guide. Additionally, a site-specific safety analysis report will also be prepared to confirm this for the Bruce Power hot cell location.

### **3.4.2 Hazard Analysis**

The CSA N289 series of standards includes general requirements for seismic hazard evaluation, seismic design and qualification, and testing and monitoring, as applicable for the seismic qualification of nuclear power plant structures, systems, and components necessary for safe shutdown, fuel cooling, the containment of potential releases of radioactive material, and the monitoring and control of essential safety-related functions in the event of an earthquake. A site-specific hazard analysis is being completed and will be provided to CNSC staff.

The fire protection assessment report—including fire protection code compliance review (CCR) and fire hazards assessment (FHA) – is completed and updated in accordance with CSA N393, Fire Protection for Facilities that Process, Handle, or Store Nuclear Substances. Changes to the facility (engineering changes) are assessed to determine whether the change adversely affects assumptions in the fire protection assessment report. The FHA and CCR will assess the fire risk to the new hot cell from fire, as well as the risk from the hot cell in the event of a fire in the area. This includes fire scenarios around the hot cell inside the building, as well as exposure risks to the building from the new generator.

Adequacy of the existing fire protection and detection systems in the CMF are also assessed. The detailed engineering review process provides the Bruce Power fire protection specialists with the details needed to determine the level of independent review required and when it will be included in the FHA.

For the hot cell, the CCR identified one code related deviation, and the FHA resulted in one recommendation that requires action for the modifications to meet the intent of the fire protection goals and objectives of CSA N393. The resolution to the minor code deviation, related to the type of cables being used, is still under discussion and will be addressed as part of the FHA and CCR submission with CNSC staff. The FHA and CCR report will be submitted to CNSC staff for acceptance.

### **3.4.3 Probabilistic Safety Analysis**

Probabilistic safety analysis (PSA) is performed in accordance with REGDOC-2.4.2, PSA for Nuclear Power Plants. Bruce Power has a robust process for the PSA, to evaluate the safe operation of the stations against defined safety goals. Without the presence of a reactor in the design, no Fault Tree or Event Tree analysis are required.

A generic final safety analysis report is being prepared, which screens out any external (on-site) hazard from the hot cell facility to both Bruce A and Bruce B, in that there is no direct impact (i.e. from initiating events (IEs) arising in hot cell facility), and no indirect impact, e.g., emergency mitigating equipment (EME) deployment and staffing is not impacted from IEs arising in hot cell facility.

#### **3.4.4 Criticality Safety**

The operation of the hot cell has negligible impact to the criticality safety Specific Area because of the activities that will be conducted at CMF.

#### **3.4.5 Severe Accident Analysis**

The hot cell will be located externally to the Bruce A and Bruce B powerhouses, and will have no impact on severe accident analysis.

#### **3.4.6 Management of Safety Issues (including R&D Programs)**

There is no impact to the management of safety issues Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.5 PHYSICAL DESIGN**

*The licensee shall implement and maintain a design program.*

*The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.*

#### **3.5.1 Design Governance**

The physical design of the Bruce site facilities is managed through the Configuration Management program. This program provides a disciplined approach to the control of the physical configuration, design requirements, and facility configuration information such that structures, systems, and components are fully functional and support safe, reliable plant and site operations. Using Bruce Power's processes, effective use of stakeholder involvement and the corrective action program continue to drive further improvements in design engineering governance.

The overall objective of the program is to ensure that systems, structures, components and tools meet design basis requirements and enable the site to operate safely, reliably, and efficiently for the duration of its operating life. This program includes processes that ensure:

- Design requirements are defined and documented,
- Changes are correct, documented, controlled, and approved; and,
- Operations, maintenance, and training documents are up to date and are consistent with the design.

Organizational responsibilities and change approval authority are assigned to promote proficiency through standard processes and activities while maintaining Bruce Power's commitment to the four pillars of safety of nuclear safety (reactor, radiological, environmental, and industrial safety).

With respect to the hot cell, Kinectrics is performing the design activities within their own organizational quality assurance programs, as accepted by Bruce Power. All design work has been completed in accordance with the quality assurance requirements of CSA N299.2.

Since the CMF is a center of site building, CSA N285.0 requirements do not apply. Pressure retaining portions of the hot cell are instead governed by the Technical Standards and Safety Act, Ontario Regulation 220/01, unless otherwise exempted by the Technical Standards and Safety Authority (TSSA) Safety Bulletin SB007.

Bruce Power is performing design oversight and is responsible for final review and approval of all design deliverables. Aspects of the physical design, described in the LCH (LC 5.1 and 5.2), will apply to the operation and use of the hot cell. This includes the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Configuration Management	BP-PROG-10.01
Engineering Change Control (ECC)	BP-PROC-01081
Pressure Boundary Quality Assurance (PBQA) Manual	BP-QMAN-00002

### 3.5.2 Site Characterization

The Bruce Power site is located on the eastern shore of Lake Huron in the Municipality of Kincardine, Bruce County, Ontario. The site hosts many buildings including the location of the hot cell in the CMF. The addition of the hot cell will have negligible impact on overall site characterization as the system is completely contained within the CMF.

### 3.5.3 Facility Design

The hot cell design is based on REGDOC-2.5.6, Design of Rooms Where Unsealed Nuclear Substances are Used, and BP-PROC-01081, Engineering Change Control (ECC). The applicable design requirements and guidance extracted from REGDOC-2.5.6 are assessed in a design assessment form.

There are minimal impacts to the CMF facility design because of the hot cell as the system is being designed within the existing facility design. There will be some minor modifications (partial wall removal, removal of interferences, and decreasing the length of the loading bay) to the loading bay (M183) at the CMF with the addition of the hot cell. Also, the hot cell will tie into existing CMF electrical distribution panels, and a new contaminated exhaust line has been designed to connect the hot cell and fume hood to the main contaminated exhaust stack. Bruce Power submitted a separate design letter to CNSC staff in Reference A5. The following Sections 3.5.2 – 3.5.6 highlight some key elements of the design.

### 3.5.4 Structure Design

The civil design of the system will be designed through the ECC process, using supporting procedures and standards to assess the civil integrity of the hot cell and surrounding building structure.

Specifically, structural floor loading has been completed within the loading bay at the CMF due to the significant weight of the new shielding and concrete structures with no concerns. Additionally, the structure of the hot cell itself has also been assessed with no concerns identified.

### **3.5.5 System Design**

The hot cell measures approximately 13 ft L x 11 ft W x 16 ft H and is constructed by joining modular ceiling and wall weldments to form a single cohesive structure. Internally, the cell footprint is approximately 8 ft L X 6 ft W, providing ample workspace for TCR operations, inclusive of waste handling. The cell features a work table at operator height, designed to use the required tooling and facilitate operational tasks efficiently. The cell walls are 2.5 ft thick and composed of high-density concrete encased in steel plates, ensuring effective radiation shielding and structural integrity.

Manipulators are located above the shielded glass assembly to allow operator actions to be replicated within the hot cell, while ensuring dose to operators is minimized. One wall of the cell is designated for PADIRAC operations (from the future Unit 6 IPS), while the opposing wall has a fume hood to allow for passthrough of smaller shielded flasks from Unit 7 IPS and the outbound inserts of the Type B (U) transport containers. The top of the cell is equipped with a penetration bank for passthrough of required services, inclusive of electrical, data, pneumatic, and contaminated exhaust. The cell is designed to be under constant negative pressure to ensure the internal volume is ventilated by the existing CMF active exhaust system, which is designed to always be available. Any potential effluent release is prevented by use of passive High Efficiency Particulate Air (HEPA) filters. The operations within the hot cell are managed through a control panel, situated adjacent to the hot cell, which provides precise control and monitoring of applicable systems.

### **3.5.6 Component Design**

Where possible, off-the-shelf components will be utilized within the design of the hot cell. The selection of these components, as well as the design of any custom components will be facilitated using the ECC process and applicable supporting standards and procedures.

## **3.6 FITNESS FOR SERVICE**

*The licensee shall implement and maintain a fitness for service program.*

### **3.6.1 Equipment Fitness for Service, Equipment Performance**

The Equipment Reliability Program, governed by BP-PROG-11.01, Equipment Reliability is intended to ensure that structures, systems and components (SSCs) perform in a safe, reliable, and cost-effective manner. Bruce Power's integrated and coordinated equipment reliability business program is based on the Institute of Nuclear Power Operations (INPO) AP-913, Equipment Reliability Process Description, with appropriate enhancements to address the regulatory and business requirements applicable to Bruce Power.

Bruce Power's equipment reliability objectives and processes apply to operation of the hot cell. The equipment reliability program requires that equipment and system performance criteria are established, and that system data is collected to enable performance monitoring, identification of adverse trends and implementation of corrective actions as required. Bruce Power plans to incorporate pre-requisite functional and performance checks and tests into standard operating procedures to ensure equipment reliability prior to use.

Aspects of the fitness for service (FFS), described in the LCH (LC 6), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Plant Maintenance	BP-PROG-11.04
Equipment Reliability	BP-PROG-11.01

### 3.6.2 Maintenance

Preventative maintenance is a key part of the equipment reliability program. The new components being introduced from the hot cell will be added to Bruce Power's master equipment list so that data such as the critical category, duty cycle and service condition can be identified to determine the required preventative maintenance strategy and frequency.

Additional maintenance activities will be prescribed based on technical input from the designers and manufacturers of components, as well as from the system failure modes and effects analysis. The conduct of maintenance (i.e., use and adherence to maintenance procedures, fundamentals and technical skills, training, qualified staff working on pressure boundary systems, etc.) will be in accordance with the maintenance program.

### 3.6.3 Structural Integrity

Structural integrity is maintained by lifecycle management practices which include inspection, testing and maintenance activities under BP-PROG-11.01. Structural assessments have been performed to ensure the addition of the new loads from the hot cell design and weight will have no impact on the structural integrity of the loading bay and associated areas surrounding the hot cell.

### 3.6.4 Aging Management

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the aging management Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.6.5 Chemistry Control

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the chemistry control Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.6.6 Periodic Inspection and Testing

There is negligible impact to the periodic inspection and testing Specific Area as a result of the activities that will be conducted at CMF and the hot cell.

## 3.7 RADIATION PROTECTION

*The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.*

Aspects of the Radiation Protection Program, described in the LCH (LC 7), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Radiation Protection Program	BP-PROG-12.05
ALARA Program	BP-RPP-00044
Dosimetry Requirements	BP-PROC-00280
Dose Limits and Exposure Control	BP-RPP-00009

### 3.7.1 Application of ALARA

The Bruce Power radiation protection program governs the processes used to control contamination and monitor radiation doses received by workers. Radiological hazards are identified, measured and controlled to ensure worker doses remain below regulatory limits and collective dose is reduced to be ALARA.

The operation of the hot cell and supporting activities will follow all aspects of BP-PROG-12.05, Radiation Protection Program. The work will fall under requirements for ALARA planning and oversight as determined by BP-RPP-00044, ALARA Program.

The hot cell has been engineered to maintain low gamma dose rates outside its enclosure, even when radioactive sources are present inside. The hot cell was designed with a maximum dose rate of 0.3 mrem/h at a distance of 30 cm from any external surface. Analytical assessments confirm that there is a significant safety margin to this level.

### 3.7.2 Worker Dose Control

A dose assessment has been carried out for hot cell workers and the surrounding area, using the most up-to-date information and processes associated with the IPS in Unit 7. This evaluation does not reflect several improvements currently underway, which are expected to be completed before hot cell commissioning.

The findings show that radiation exposure for workers from hot cell operations will be very low, with an estimated dose of only 0.1 mrem per five targets. Most worker exposure is expected to result from activities outside the hot cell, such as preparing shielded vessels for unloading and carrying out final shipment preparations after TCR. Taking a conservative approach, the collective worker dose is estimated to remain below 100 mrem per harvest. In practice, actual exposures are likely to be even lower once additional operating experience is gained and further optimization measures are put in place.

Negligible radiation dose is anticipated for workers in areas surrounding the hot cell. Tools used in Bruce Power's robust radiation protection program include using clear signage, proactive communication, public address announcements, and routine radiological surveys.

It is also important to note that the upcoming IPS installation in Unit 6 will implement processes designed to eliminate many manual tasks in both the station and the hot cell. Once the IPS in Unit 6 becomes operational, worker dose is expected to decrease even further.

### 3.7.3 Radiation Protection Program Performance

Action Levels (ALs) and Administrative Dose Limits (ADLs) are implemented through the Radiation Protection Program to alert the licensee that a loss of control of some part of the program may have occurred. The current ALs and ADLs for the CMF are documented in BP-PROG-12.05, Radiation Protection Program, and summarized in the LCH for convenience. Given the ongoing and substantial movement of radioactive material in and out of the CMF as part of hot cell operations, a comprehensive review of the CMF's radiation protection action levels is being conducted. Should Bruce Power want or need to revise any Action Levels, they will be provided in a separate submission to CNSC staff.

### 3.7.4 Radiological Hazard Control

For the radiological work at the hot cell, radiological hazards will be identified, measured and controlled in accordance with BP-PROG-12.05. Work is planned and executed in a manner that controls worker doses and prevents dose to the public.

Under BP-PROG-12.05, a procedure will be created that captures information about the hot cell from a radiological perspective. The procedure will include a description of the hot cell and the main radiological elements associated with the use and monitoring of work in the hot cell. It will also be used to develop any required training related to the radiological aspects of the hot cell. This radiation protection procedure will not govern operation of the hot cell but will specify some radiological requirements and limitations. The operational steps of the TCR activities within the hot cell will be controlled through the operations manual.

Workplace surveys, alarming dosimeters and area radiation monitors are used extensively to prevent unplanned exposures and to ensure worker doses do not exceed regulatory limits for the operation of the hot cell. The hot cell is equipped with radiation protection monitoring devices that read out and alarm locally, and also transmit through the corporate network to allow remote monitoring.

As with all radioactive material on site, the movement of hot cell related radioactive material will be carefully planned, monitored and controlled to ensure radiological safety of workers and to prevent releases.

### 3.7.5 Estimated Dose to the Public

The operation of the hot cell to produce Lu-177 is expected to result in negligible changes to the dose to the public.

## 3.8 CONVENTIONAL HEALTH AND SAFETY

*The licensee shall implement and maintain a conventional health and safety program.*

Aspects of Conventional Health and Safety, described in the LCH (LC 8), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Health and Safety Management	BP-PROG-00.06

### 3.8.1 Performance, Practices, Awareness

Bruce Power has a well-established occupational health and safety management system designed to identify, assess and control conventional health and safety hazards. The Bruce Power Health and Safety Management Program (BP-PROG-00.06) is structured to ensure legal, as well as other requirements to which Bruce Power subscribes, are met.

In comparison to the IPS location, the hot cell location at the CMF is more desirable as it offers lower noise and more comfortable temperatures. There is a negligible impact to the performance, practices, awareness Specific Area because of the activities that will be conducted at CMF and the hot cell.

## 3.9 ENVIRONMENTAL PROTECTION

*The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.*

Aspects of Environmental Protection, described in the LCH (LC 9), will apply to the operation and use of the hot cell. There is negligible change or impact to the environmental protection program resulting from the hot cell operation. This includes the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Environmental Management	BP-PROG-00.02
Derived Release Limits and Environmental Action Levels for Central Maintenance and Laundry Facility	NK37-REP-03482-00001
Radiological Emissions and Effluent Monitoring	BP-STND-00049

### 3.9.1 Environmental Risk Assessment

CSA N288.6-12, Clause 11.1, identifies the circumstances in which an Environmental Risk Assessment (ERA) update is required:

*“Facility ERAs should be reviewed on a five-year cycle or more frequently if major facility changes are proposed that would trigger a predictive assessment (see Figure 5.1). Prior to each update, the most recent ERA should be reviewed to identify [...]*

*(b) changes to the physical facility or facility processes that have the potential to change the nature of facility effluent(s) and the resulting risks to receptors [...]*

*The purpose of the periodic review of the ERA is to identify and assess any risks that might have emerged since the last ERA review. This review can indicate that the potential for risks is substantively the same and therefore that the ERA does not require changes.”*

Bruce Power’s most recent ERA, B-REP-03443-00024, was completed in 2022.

An ERA gap analysis was completed to determine whether the hot cell TCR operations has the potential to change the nature of the CMF radiological emissions and risk to receptors, which would trigger an update to the ERA per N288.6-12 Clause 11.1. This assessment was completed using the generic final safety analysis report and is subject to change based upon changes reflected in the final safety analysis report.

The analysis considers bounding releases during normal operation and accident scenarios (maximum probable emissions). The assessed impacts of these scenarios found that the installation of a new hot cell for isotope TCR operations does not affect the conclusions of the ERA. Based on the CSA N288.6-12 requirements described above, the hot cell TCR activities will not trigger an ERA update, and the ERA will instead be updated within the expected five-year cycle.

### **3.9.2 Effluent and Emissions Control (releases)**

The hot cell is designed to handle normal operation and accident scenarios. The target ampoules are contained and leak-tested before being inserted in a target carrier. It is expected the ampoule will remain intact. In the rare event of breakage, engineering controls will mitigate releases from the contaminated exhaust stack. Monitoring from this release pathway is discussed in Section 3.9.3.

The hot cell and associated fume hood will be provided with a dedicated independent contaminated exhaust system to ensure the hot cell is under constant negative pressure during normal operation when compared to the area surrounding the hot cell (as discussed in Section 3.5.5). The hot cell contaminated exhaust will tie into the CMF contaminated exhaust stack downstream of the CMF stack filter trains. The hot cell contaminated exhaust will include a dedicated HEPA filter for the hot cell and two parallel HEPA filter trains for the combined exhaust from the hot cell and fume hood.

Based on information provided in the preliminary safety report, no changes to derived release limits (DRLs) and environmental action levels (EALs) are anticipated due to the hot cell TCR activities. The release of airborne particulates is expected to be negligible and are predicted to generate no additional risk.

As a dry system, the hot cell poses no risk of liquid radiological or conventional spills. No changes to the liquid effluents are expected because of hot cell TCR operations. Environmental risks/controls would be re-evaluated for any future uses of the hot cell beyond TCR.

### **3.9.3 Assessment and Monitoring**

The LCH, Section 9.1, requires Bruce Power to establish emissions and effluent monitoring in accordance with CSA N288.5-11. The effluent monitoring program is designed using a risk-based graded approach. The monitoring requirements are evaluated with consideration of the probability and severity of a radiological emission from each effluent stream and pathway.

Emissions entering the gas stream would be bounded by the activity inside an irradiated target ampoule. The most radiologically significant radionuclides present in an irradiated target are ytterbium-175 (Yb-175), ytterbium-177 (Yb-177) and Lu-177. Due to their activity and half-life, Yb-175, Yb-177 and Lu-177 are the most likely radionuclides to be measured on particulate filters; others contribute negligibly.

The particulate release corresponding to a hot cell maximum probable emission scenario is a negligible fraction of the CMF particulate annual and operational (weekly) DRL. While not required per BP-STND-00049, Radiological Emissions and Effluent Monitoring, performance monitoring for particulate beta/gamma has been selected for the CMF contaminated exhaust stream, consistent with existing CMF protocols, to demonstrate effectiveness of protection measures in place.

Should a material change in CMF releases occur, Bruce Power will investigate and determine corrective actions (as applicable) to minimize the environmental impact of these incremental releases. The environmental impact of increased activity would be included in the weekly emission report and reported to the CNSC on a quarterly basis.

Based on information provided in the generic final safety analysis report, the planned hot cell TCR is not expected to have an impact on the environment. In the unlikely event of an ampoule dropped in the hot cell, emissions would be directed to the exhaust stack and be contained by the HEPA filters prior to release as described in Section 3.9.2. Weekly monitoring for Yb-175, Yb-177 and Lu-177 will commence with the hot cell commissioning.

**3.9.4 Environmental Management System (EMS)**

There is negligible impact to the environmental management system (EMS) Specific Area because of the activities that will be conducted at CMF and the hot cell.

**3.9.5 Protection of the Public**

The ERA (specifically the human health risk assessment) assesses the dose to members of the public based on emissions and measurements of radionuclides in the environment.

Since there are negligible potential emissions from the hot cell TCR operations, negligible changes to the dose to the public are expected.

**3.10 EMERGENCY MANAGEMENT AND FIRE PROTECTION**

*The licensee shall implement and maintain an emergency preparedness program.*

Aspects of emergency management and fire protection, described in the LCH (LC 10), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Bruce Power Nuclear Emergency Response Plan	BP-STND-00001
Radioactive Material Transportation Emergency Response Plan	BP-PLAN-15000*
Emergency Management and Fire Protection	BP-PROG-08.01

*\*This is a new document that superseded BP-PLAN-00005 per Reference A6*

**3.10.1 Conventional Emergency Preparedness and Response**

Emergency response is implemented through emergency response plans and associated procedures, using the Incident Management System approach. Specific emergency response plans include plans for nuclear emergencies, winter storm transportation, electricity emergencies, radioactive material transportation emergencies, conventional emergencies, fire safety management, and business continuity. Bruce Power is ready to respond to on-site emergencies without external assistance for a minimum of 72 hours even with loss of external power.

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the conventional emergency preparedness and response Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.10.2 Nuclear Emergency Preparedness and Response

Bruce Power maintains a nuclear emergency plan, along with a set of abnormal incident manuals and emergency operating procedures. The nuclear emergency plan addresses nuclear emergencies and transportation-related emergencies, as well as treatment of individuals with radioactive contamination.

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the nuclear emergency preparedness and response Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.10.3 Fire Emergency Preparedness and Response

*The licensee shall implement and maintain a fire protection program.*

Licensee Documents that Require Notification of Change	
Document Title	Document #
Fire Safety Plan	BP-STND-00166
Conventional Emergency Plan	BP-STND-00136*

*\*This is a new document that superseded BP-PLAN-00006 per Reference A7*

A comprehensive FHA has been completed for the hot cell, with details provided in Section 3.4.2. The hot cell's design complies with CSA N393.

There is negligible impact to the fire emergency preparedness and response Specific Area because of the activities that will be conducted at CMF and the hot cell.

## 3.11 WASTE MANAGEMENT

*The licensee shall implement and maintain a waste management program.*

Waste management, characterization and minimization practices are applicable to all Bruce Power facilities and all qualified workers performing radioactive waste activities at Bruce Power, whether they are full time or part time staff, or contractors.

Aspects of waste management, described in the LCH (LC 11), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Radiation Protection Program	BP-PROG-12.05

### 3.11.1 Waste Characterization

In addition to the hot cell project, Bruce Power is undertaking a separate initiative to replace the current aluminum outer carrier of Lu-177 targets with titanium (see Reference A1). This project includes material analysis on post irradiated targets to fully characterize the new target carriers. Additional details will be shared with CNSC staff as the project progresses. It is expected that the activation from the impurities in the titanium carriers is expected to be less waste than the current aluminum carriers. These changes will have negligible impact on the waste characterization Specific Area because of the activities planned at CMF and within the hot cell.

### **3.11.2 Waste Minimization**

During the construction phase, the hot cell project is anticipated to generate minimal waste. As outlined in Section 3.11.1, Bruce Power is also advancing a parallel initiative aimed at reducing waste from target carriers, addressing concerns previously identified by our partner, Isogen. Comprehensive material characterization efforts are ongoing to support this objective.

During operational activities, waste generated from the target carriers may be stored on site for extended periods to allow for radioactive decay, ultimately enabling the material to be free-releasable. The overall waste management strategy is still being finalized, and Bruce Power will provide additional updates to CNSC staff to confirm the feasibility of this approach.

Given the nature of activities planned at CMF and within the hot cell, the impact on waste minimization is expected to be negligible.

### **3.11.3 Waste Management Practices**

When the Bruce Power licence was previously amended for the production of Lu-177 (Reference A4), Bruce Power was not removing nor storing the target carrier waste on site (this activity was performed by a vendor under a separate licence). This waste will now be managed on the Bruce Power site using the existing waste management practices. There is negligible impact to the waste management practices Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.11.4 Decommissioning Plans**

*The licensee shall notify the Commission of any changes regarding the obligations of decommissioning and financial guarantees under the Lease Agreement with Ontario Power Generation Inc. as described in 15.1 of the LCH.*

The scope of financial guarantee by Ontario Power Generation (OPG) includes decommissioning of Bruce A, Bruce B, Central Storage Facility (CSF) and the CMF. OPG is also responsible for lifecycle management of all used fuel, as well as low-and-intermediate-level waste produced by these facilities. OPG provides the CNSC with a decommissioning cost estimate and technical update every five years.

Bruce Power has provided OPG with the details of the hot cell, describing the anticipated waste arising at the end of life, and is working with OPG to update the CMF section of the Preliminary Decommissioning Plan for RWOS-1, CMF and CSF.

There is negligible impact to the Decommissioning Plans Specific Area because of the activities that will be conducted at CMF and the hot cell.

## **3.12 SECURITY**

*The licensee shall implement and maintain a security program.*

### **3.12.1 Facilities and Equipment**

The Bruce Power site is protected by a series of defence-in-depth security measures, starting at the outer boundary of the Bruce site. The nuclear security program satisfies all requirements of high-security sites pursuant to the Nuclear Security Regulations and associated regulatory documents.

Aspects of security, described in the LCH (LC 12), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Nuclear Security	BP-PROG-08.02
Cyber Security	BP-PROC-00784
Site Security Plan	B-REP-08160-00001

The hot cell will be situated outside the designated protected areas, with security measures implemented to ensure that all hot cell equipment—including control panels, personnel entry doors, transport container passthroughs—and the storage location for target carrier waste remain securely locked and inaccessible to unauthorized personnel.

It is recognized that new Nuclear Security Regulations have been approved and are applicable to the Bruce Power site. As described in Section 3.11.1, Bruce Power plans to characterize the new target carriers, which will be located in the vicinity of the hot cell after removal. This characterization will allow Bruce Power to determine how to apply the new requirements to the nuclear substance materials stored within the hot cell and its surrounding areas. There is negligible impact to the Facilities and Equipment Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.12.2 Response Arrangements**

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the response arrangements Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.12.3 Security Practices**

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the security practices Specific Area (including, but not limited to, site access security clearance and site visitor sponsorship and registration with security) because of the activities that will be conducted at CMF and the hot cell.

### **3.12.4 Drills and Exercises**

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the drills and exercises Specific Area because of the activities that will be conducted at CMF and the hot cell.

### **3.12.5 Cyber Security**

Bruce Power will apply the requirements of CSA N290.7-21, Cyber Security for Nuclear Facilities, to the hot cell design. The design will be assessed against these requirements, and appropriate physical and cyber security controls will be implemented to mitigate identified threats. This approach ensures robust protection against internal and external risks, consistent with Bruce Power’s cyber security standards and governance outlined in BP-PROC-00784, Cyber Security.

### **3.13 SAFEGUARDS AND NON-PROLIFERATION**

*The licensee shall implement and maintain a safeguards program.*

#### **3.13.1 Nuclear Material Accountancy and Control**

Pursuant to the Power Reactor Operating Licence, Bruce Power supports the CNSC and International Atomic Energy Agency (IAEA) in implementing Canada's obligations under the Treaty on the Non-Proliferation of Nuclear Weapons.

Bruce Power accounts for the nuclear material on site and reports to the CNSC in accordance with REGDOC-2.13.1, Safeguards and Nuclear Material Accountancy. This includes tracking of inventory, conducting regular physical inventories, and providing monthly and annual nuclear material accountancy reports through the CNSC electronic system.

Aspects of safeguards and non-proliferation, described in the LCH (LC 13), will apply to the operation and use of the hot cell.

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the nuclear material accountancy and control Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **3.13.2 Access and Assistance to the IAEA**

The IAEA has been notified of the hot cell installation at Bruce Power. Installation and operation of the hot cell will have negligible impact on access and assistance to the IAEA. The IAEA reserve the right to inspect the hot cell prior to the introduction of any nuclear substance.

There is negligible impact to the access and assistance to the IAEA Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **3.13.3 Operational and Design Information**

The Lu-177 program provides operational information regarding isotope production and shipping schedules, which will continue when the hot cell is in operation. Bruce Power will continue to provide this information to the CNSC and IAEA, in alignment with established processes for provision of operational information.

There is negligible impact to the operational and design information Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **3.13.4 Safeguards Equipment, Containment and Surveillance**

Installation and operation of the hot cell will have negligible impact on existing safeguards equipment. After initial discussions with the CNSC and IAEA, the IAEA is not expected to request installation of any additional safeguards equipment.

There is negligible impact to the safeguards equipment, containment and surveillance Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.13.5 Import and Export

The operation of the hot cell will have negligible impact on import and export of controlled / prescribed information or equipment. Our partners, Isogen, hold the applicable CNSC licences to authorize export for processing and subsequent import for use for Lu-177 production.

There is negligible impact to the import and export Specific Area because of the activities that will be conducted at CMF and the hot cell.

## 3.14 PACKAGING AND TRANSPORT

*The licensee shall implement and maintain a packaging and transport program.*

### 3.14.1 Package Design and Maintenance

Pursuant to the Packaging and Transport of Nuclear Substances Regulations, 2015, radioactive material is required to be transported within a package for which the design was certified by the CNSC, if it meets Type B classification per IAEA SSR-6 Regulations for the Safe Transport of Radioactive Material, 2018. Additionally, users of that package design must apply as registered users with the CNSC prior to use of the package.

Aspects of packaging and transport, described in the LCH (LC 14), will apply to the operation and use of the hot cell. This may include the implementation of the following documents:

Licensee Documents that Require Notification of Change	
Document Title	Document #
Radioactive Material Transportation	BP-RPP-00188

There is minimal change from the previous licence amendment application (Reference A4) and negligible impact to the package design and maintenance Specific Area because of the activities that will be conducted at CMF and the hot cell.

### 3.14.2 Packaging and Transport

Bruce Power has extensive experience in safely packaging radioactive materials for transport. The process for managing radioactive shipments is an element of Bruce Power's robust radiation protection program, which is described at a high level in Section 3.7.

The process for managing radioactive shipments complies with the *Transportation of Dangerous Goods Regulations*, *Packaging and Transport of Nuclear Substances Regulations, 2015*, and *IAEA SSR-6, Regulations for the Safe Transport of Radioactive Material*.

Only trained and qualified workers may prepare radioactive materials for shipment. Oversight and associated reporting are provided by Bruce Power's site transport coordinator. In brief, materials are prepared for shipment, surveyed for radioactivity, classified, packaged securely in a container consistent with the requirements of the classification, and then surveyed for radioactivity on the exterior of the package. The package is then inspected, labelled, and provided to a Class 7 trained carrier in association with appropriate documentation.

Lu-177 produced at Bruce B will be transferred to CMF via the conditional transfer permit process outlined in BP-RPP-00033, Unconditional Releases and Conditional Transfers of Material. A shielded package will be used to transfer the Lu-177 to CMF to ensure the contents remain contained and dose rates are ALARA. Following removal of the irradiated ampoule carriers, the ampoules will be repackaged at the CMF and transferred to a 3<sup>rd</sup> party to transport them with reduced package dose rates.

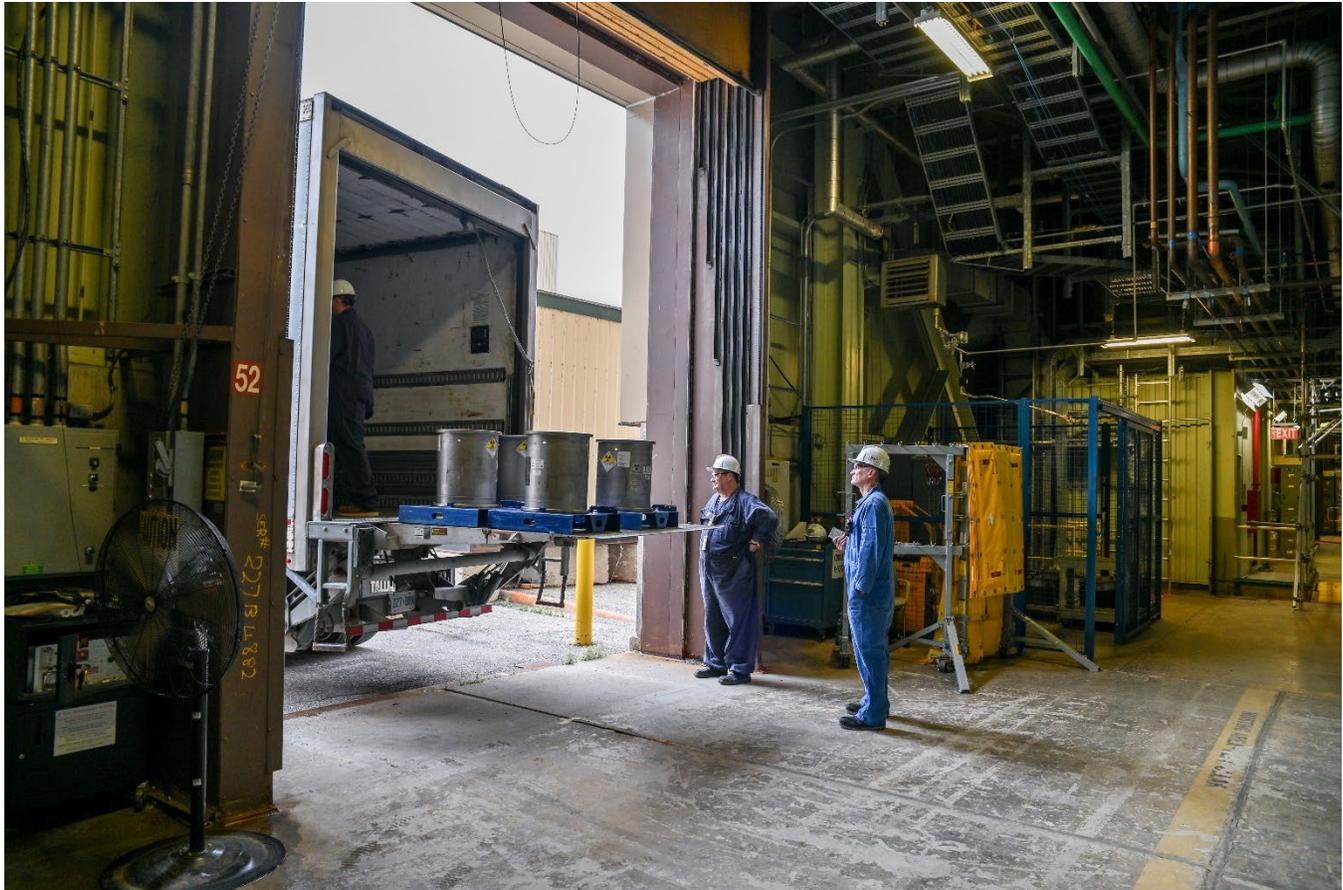


Figure 5 – Loading the transport containers onto the truck for shipment to offsite facility.

### 3.14.3 Registration for Use

Bruce Power is a registered user of various packages of certified designs, pursuant to the Packaging and Transport of Nuclear Substances Regulations, 2015. It is anticipated that Bruce Power will start using a new transport container, ISORAD, to package the Lu-177 ampoules the hot cell. Bruce Power will apply to be a registered user of this container.

## 4.0 IMPACT ON FACILITY-SPECIFIC LICENCE CONDITIONS

### 4.1 Lease Agreement

The hot cell is permitted under the terms of the Lease Agreement and will have a negligible impact to the lease agreement facility Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.2 Integrated Implementation Plan**

There is negligible impact to the Integrated Implementation Plan Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.3 Removed**

n/a

#### **4.4 Return to Service Plan**

There is negligible impact to the return to service plan Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.5 Regulatory Hold Points for Return to Service and Continued Operation**

There is negligible impact to the regulatory hold points for return to service and continued operation Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.6 Periodic Safety Review**

There is negligible impact to the periodic safety review Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.7 End of Commercial Operations**

There is negligible impact to the end of commercial operations Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.8 Booster Fuel**

There is negligible impact to the booster fuel Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.9 Criticality Program**

There is negligible impact to the criticality program Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.10 Cobalt and Lutetium-177**

There will be changes to the Lu-177 process and the proposed revisions for the LCH and associated procedure, BP-PROC-01120, Management of Lutetium-177 Production, will be submitted to CNSC staff in a separate submission .

There is negligible impact to the Co-60 Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.11 Class II Nuclear Facility**

There is negligible impact to the Class II nuclear facility Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **4.12 Nuclear Substance and Prescribed Equipment**

There is negligible impact to the nuclear substance and prescribed equipment Specific Area because of the activities that will be conducted at CMF and the hot cell.

#### **5.0 References:**

- A1. Letter, M. Burton to A. Bulkan, "Bruce B: Regulatory Communication Plan for the Lutetium-177 Program Projects", October 17, 2025, BP-CORR-00531-06455.
- A2. 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
- A3. Letter, M. Burton to A. Bulkan, "Bruce A and B: Semi-annual Status Update on the Implementation of Management System Documentation, Action Item 2020-07-21092", April 25, 2025, BP-CORR-00531-06388.
- A4. Letter, M. Burton to M. Leblanc, "Application for the Amendment of the Power Reactor Operating Licence", November 25, 2020, BP-CORR-00531-00982.
- A5. Letter, M. Burton to A. Bulkan, "Bruce A and B: Design of the Hot Cell for the Isotope Program", September 15, 2025, BP-CORR-00531-06456.
- A6. Email, J. Thompson to A. Bulkan, "Notification of a Revision to an LCH Document: Revision 000 of BP-PROC-15000, Radioactive Material Transportation Accident Emergency Response, Superseding BP-PLAN-00005", March 28, 2025, BP-CORR-00531-06385.
- A7. Email, M. Burton to A. Bulkan, "Notification of Revision to an LCH Document: Revision 000 of BP-STND-00136, Conventional Emergency Plan, Superseding BP-PLAN-00006", January 28, 2025, BP-CORR-00531-06035.