Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 26-H110.10

Date: 2026-06-25

Written Submission from Lawson Research Institute

Mémoire du Lawson Research Institute

In the matter of

À l'égard du

Bruce Power

Bruce Power

Application to change the lutetium-177 production process at Bruce A and B Nuclear Generating Stations

Demande visant à modifier le processus de production de lutécium 177 aux centrales nucléaires de Bruce A et B

Hearing in Writing

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Canada

June 17, 2026

To the Canadian Nuclear Safety Commission,

Re: Support for Bruce Power Hot Cell Facility for Medical Isotope Processing

We are writing in strong support of Bruce Power's initiative to establish a dedicated hot cell facility for the on-site processing of medical isotopes. This investment represents an important and timely step in strengthening Canada's leadership in the production and supply of critical isotopes that underpin modern cancer care and precision medicine.

Bruce Power has demonstrated global leadership in isotope production, with decades of experience producing cobalt-60, which is used to sterilize approximately 30% of the world's single-use medical devices and to treat cancers such as brain and breast malignancies.
More recently, Bruce Power has advanced innovation in the field by becoming the first commercial nuclear reactor in the world to produce lutetium-177 (Lu-177), a cornerstone isotope in theranostic applications for diseases such as prostate cancer.

The proposed hot cell facility is a critical component of this evolving supply chain. By enabling on-site processing of irradiated targets into material suitable for downstream radiopharmaceutical production, it will streamline logistics, enhance operator safety, reduce transportation-related emissions, and strengthen Ontario's medical isotope infrastructure. By reducing the time between isotope production, processing, and downstream radiopharmaceutical preparation, the facility may also help preserve usable activity that would otherwise be lost to radioactive decay, improving efficiency across the supply chain. These improvements are not incremental—they are essential to ensuring a reliable, resilient, and scalable supply of isotopes required for clinical and research applications.

Importantly, this facility would advance Canada toward a more sovereign and integrated Lu-177 supply chain by combining domestic reactor-based isotope production with domestic processing capability. For Canadian hospitals, researchers, and radiopharmaceutical developers, this would reduce dependence on international processing capacity, improve resilience against global supply disruptions, and help ensure that Canadian patients benefit directly from isotopes produced in Canada. This is particularly important as Lu-177–based radiopharmaceutical therapies continue to expand across prostate cancer, neuroendocrine tumours, and emerging theranostic indications.

The impact of this investment would be especially relevant to London, where Lawson, St. Joseph's Health Care London, London Health Sciences Centre, and Western University are building integrated clinical, translational, and imaging-research capacity in molecular imaging and theranostics. From the perspective of Lawson Research Institute and our Molecular Imaging and Theranostics Program, access to a robust and domestically supported isotope supply is foundational. Theranostics, combining diagnostic imaging and targeted radionuclide therapy, represents one of the most transformative

advances in oncology. Isotopes such as Lu-177 enable highly specific targeting of cancer cells, with the potential to improve the therapeutic index by concentrating radiation dose in target-expressing disease while limiting off-target exposure. The rapid growth of theranostics is driving increasing global demand for reliable isotope supply, and Canada is uniquely positioned to be a leader in both supply and innovation.

Strengthening domestic capabilities in isotope processing directly enhances our ability to conduct cutting-edge clinical research. Reliable access to isotopes accelerates clinical trials, supports the translation of new radiopharmaceuticals, and ultimately improves patient access to life-saving therapies. Initiatives such as the Bruce Power hot cell will therefore have a direct and meaningful impact on advancing theranostic research programs at institutions like Lawson, fostering innovation and enabling Canada to remain competitive on the global stage.

In addition, Bruce Power's ongoing partnerships, including collaboration with Indigenous communities, demonstrate a responsible and inclusive approach to growth, ensuring that the benefits of isotope production extend beyond healthcare and into economic and community development.

In summary, the establishment of the hot cell facility is a strategically important investment that will:

- Strengthen Canada's leadership in medical isotope production and processing
- Advance sovereign Canadian capability in Lu-177 supply
- Support the rapidly expanding field of theranostics and precision medicine
- Enhance supply-chain efficiency, operator safety, and environmental sustainability
- Enable clinical trials, radiopharmaceutical translation, and therapeutic innovation at Lawson and across Canada

We strongly support this initiative and encourage its advancement. This project aligns with national priorities in healthcare innovation, economic development, and global leadership in medical isotopes.

Please do not hesitate to contact me if additional information would be helpful.

Sincerely,

Michael Kovacs, PhD
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Lawson Research Institute

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