



**Written submission from
Canadian Nuclear Isotope Council**

**Mémoire de
Canadian Nuclear Isotope Council**

In the Matter of

À l'égard de

**Application to allow the production of
lutetium-177(Lu-177) at the Bruce Nuclear
Generating Station (NGS)**

**Demande de modification de permis visant à
permettre la production de lutécium 177 à la
centrale nucléaire de Bruce**

Public Hearing - Hearing in writing based on
written submissions

Audience Publique - Audience fondée sur des
mémoires

June 2021

Juin 2021



May 26, 2021

Tribunal Officer, Secretariat
Canadian Nuclear Safety Commission
280 Slater Street
P.O. Box 1046, Station B
Ottawa, Ontario K1P 5S9
Email: cnsic.interventions.ccsn@canada.ca

Re: Bruce Power Licence Amendment Application (June 25, 2021 Hearing in Writing)

Dear President and Commission Members,

On behalf of the Canadian Nuclear Isotope Council (CNIC) we are pleased to offer our support for Bruce Power's License Amendment Application.

The Canadian Nuclear Isotope Council (CNIC) is an independent organization consisting of representatives from various levels within the Canadian health sector, nuclear industry, and research bodies, convened specifically to advocate for our country's role in the production of the world's isotope supply. The CNIC serves as a voice in safeguarding the continued availability of isotopes, ensuring our public policies are risk-informed and science-based, and support the highest levels of public health and safety.

Bruce Power was not only a founding member of the CNIC but was the catalyst that led to its initial creation. Bruce Power recognized the need to ensure that Canada continue to be a leader in the research and development of isotopes and created the CNIC to establish a pan-Canadian isotope ecosystem. Since that time the ecosystem has flourished, and numerous projects are underway to ensure the stable, reliable, and redundant supply of critical isotopes.

Beyond catalyzing the Canadian isotope sector to build strategic partnerships, for more than 30 years, the four reactors at Bruce Power's Bruce B generating station have been a reliable Cobalt-60 supply for Nordion, an Ottawa-based company. Bruce Power's Cobalt-60 helps to sterilize 40 per cent of the world's single-use medical devices, including sutures, syringes, masks, gloves and more. Bruce Power also produces medical-grade Cobalt-60 that is used in radiation-based cancer treatments.

Bruce Power in collaboration with their trusted partners, are building on their collective expertise and industry knowledge to meet the global demand for new and emerging isotopes that treat various types of cancer. With demand for medical isotopes expected to grow substantially in the next decade, there is a need for additional irradiation capacity which will be enabled through this license amendment process.

Approval of this license amendment will be a game changer in the global medical isotope supply chain, providing unprecedented capacity to produce some medical isotopes with the existing Bruce Power infrastructure. Once operational, the Isotope Production System (IPS) will have the capacity to produce a wide variety of isotopes and will open the door to large-scale research and development opportunities in Canada. Due to the unique design of Bruce Power's CANDU reactors, medical isotopes can be removed while the reactor is still online, and without interrupting the station's generation of clean energy.

The IPS will first be used to produce Lu-177, which is currently used to treat neuroendocrine tumors, and has additional applications for prostate and breast cancer treatments. Bruce Power's ability to contribute to the supply chain of Lutetium-177 will become increasingly important for Canadians and patients around the world. Its



unique properties emit sufficient gamma radiation for imaging, while its beta radiation allows for the therapeutic treatment of tumours, helping to save thousands of lives.

Beyond improving patient outcomes, Bruce Power has fostered strong, meaningful relationships with Indigenous communities. In fact, Bruce Power has partnered with the Saugeen Ojibway Nation (SON) to explore ways of jointly marketing new isotopes, in support of the global fight against cancer, while also working together to create new economic opportunities within the SON territory. This will also be enabled through this amendment process and approval of this application.

The revenue sharing program with the SON will provide economic benefits to the SON community from their return on investment in the project, enabling SON to take a self-directed approach to managing social and economic conditions within their community. This revenue stream will provide opportunities to address wealth creation and improve well-being for the SON community.

By using nuclear reactors and expanding the production of radioisotopes, Bruce Power will continue to keep the country at the forefront of innovations that save lives, improve quality of life, and invest in our economy. For these reasons, the CNIC is happy to support Bruce Power's Licence Amendment Application.

The CNIC is pleased to have the opportunity to provide a written submission in support of this amendment proposal and would be delighted to discuss any of these matters further.

Sincerely,

Andrew Thiele

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