



**Written submission from the
McMaster University**

**Mémoire de
l'Université McMaster**

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



Vice-President
(Research)

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May 26, 2021

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

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

Dear President and Commission Members,

McMaster University is Canada's most research-intensive university, and consistently ranks among the top 100 universities in the world. It is also our nation's preeminent nuclear research institution comprising a unique suite of world class nuclear research facilities anchored by the 5MW McMaster Nuclear Reactor. McMaster University's nuclear programs and facilities enable discoveries in medicine, clean energy, nuclear safety, materials, environmental science, and medical isotopes.

Medical isotopes are an essential part of modern health care but they can only be generated at specialized nuclear facilities and have a typical shelf-life of only hours or days. McMaster University is the world's leading supplier of two medical isotopes: iodine-125 and holmium-166.

Bruce Power and McMaster University formed a key partnership through a Memorandum of Understanding in 2020 to collaborate on advancing nuclear technologies including medical isotopes. Together, the collaboration explores applications of established medical isotopes, and addresses opportunities around emerging medical isotopes, including Lutetium-177, which has shown great promise for treating several types of cancers.

Bruce Power is proud to continue to supply life-saving medical isotope Co-60 across the globe to keep medical equipment sterilized and assist in fighting disease. However, the demand for medical isotopes is expected to grow substantially in the next decade and there is a need for additional irradiation capacity. To support the growing need, Bruce Power's Isotope Production System will be a game changer in the global medical isotope supply chain, providing significant capacity to produce some medical isotopes leveraging the existing Bruce Power infrastructure. Bruce Power's ability to contribute to the supply chain of Lutetium-177 in particular will become increasingly important for Canadians and patients around the world.

Bruce Power submitted a license amendment application in November 2020 and plans to begin to supply the world market with Lu-177 in 2022. McMaster University believes that leveraging Canadian infrastructure to produce life-saving treatments for cancer patients will be critical to ensuring a resilient global supply chain so that patients do not go untreated.

Sincerely,

Dr. Karen Mossman
Vice President Research
Professor, Department of Medicine