



**Written submission from
Kinectrics**

**Mémoire de
Kinectrics**

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

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May 27th, 2021

Commission Secretariat
Canadian Nuclear Safety Commission
280 Slater Street
P.O. Box 1046, Station
B Ottawa, Ontario
K1P 5S9

Commission Hearing, Amendment to Allow the Production of Lutetium-177 at the Bruce Nuclear Generating Station, Ref. 2021-H-100

Dear Commission Secretariat,

The purpose of this letter is to express Kinectrics' support for Bruce Power's application to amend its Power Reactor Operating Licence (PROL) 18.01/2028 to allow for the production of Lutetium-177 (Lu-177) through the installation and operation of an Isotope Production System (IPS) at Bruce B Unit 7 in partnership with Isogen.

Kinectrics is a proudly Canadian company, committed to sustainable, long-term global growth. We provide complete life cycle management solutions to the electricity industry, working with our customers to fight climate change and save lives through clean electricity generation and medical isotope production. Our headquarters are in Etobicoke, Ontario with offices in Pickering, downtown Toronto, Bruce County, the United States, Germany, Denmark, Romania, United Kingdom and India. We have over 30 laboratories including CNSC licensed facilities and employ more than 1,200 staff, 70% of whom have technical, science or engineering degrees.

At Kinectrics, we invest in state-of-the-art facilities and tools to provide the best and most comprehensive services to our customers. Our laboratories provide testing facilities for a broad range of areas in support of the nuclear industry, including materials analysis, nuclear radiation safety, and chemical analysis. Our world-class experts deliver services including project management and controls, design engineering and nuclear safety analysis and licensing. In addition to supporting Bruce Power in these areas, we provide similar services to OPG, Hydro One, other provincial and local utilities, and over 200 clients elsewhere in North America, Europe, the Middle East and Asia. We also provide the broader electricity industry with electrical transformer testing and renewable energy grid interconnection.



Kinectrics has made significant investments in the production of medical isotopes and we share Bruce Power's vision of the importance of providing therapeutic medical isotopes. With the installation of the IPS in a CANDU reactor, Bruce Power will be able to provide a constant supply of the short-lived medical isotope, Lu-177. Bruce Power is uniquely positioned to create the world's largest and most reliable supply of Lu-177. This will be achieved through the reliability and uptime of a commercial power reactor, and over the long term, through redundancy of multiple IPS's installed at different Bruce B reactor units. This reliability and scale have not been achieved elsewhere in the world and positions Canada to be the most important source of medical isotopes, starting with Lu-177, for the treatment of cancer. Kinectrics believes that it is important to continue to invest in Canadian-based technologies that will maintain Canada's prominence in medical isotope production, and that it is our responsibility to ensure that these isotopes are available in Canada and throughout the world for protecting the health of patients.

Kinectrics provides a broad range of services to Bruce Power which contribute to continued safe operation including:

- Services in the areas of design engineering, project management, project/field engineering and project controls.
- Development and deployment of specialized tools, both manual and robotic, to inspect the reactor core and station infrastructure. These tools inspect various components and structures for signs of fatigue, wear, and/or chemical residue.
- Undertaking of deterministic and probabilistic safety assessments in support of the design and licensing bases for the Stations and their safe operation.
- Provision and qualification of safety-related components where the original equipment manufacturer no longer fabricates to the necessary nuclear quality assurance standards.

As of early 2021, Kinectrics has over 200 full-time staff working either at the Bruce Site, Teeswater, Kincardine or its KI North facility in Tiverton. Kinectrics staff who work at the Bruce Power site are trained in, and adhere to, Bruce Power's rigorous procedures in nuclear, conventional and radiation safety and environmental protection. With our extensive experience working closely with Bruce Power, we can attest that Bruce Power's effective management of their facilities provides a safe work environment for our staff and we have confidence in their commitment to maintain and operate the Isotope Production System safely and reliably.



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With respect to protection of the environment, Kinectrics provides analytical and environmental services that support environmental assessments and monitoring programs. Through the provision of these services for Bruce Power, we affirm they uphold their mandate to continuously monitor discharges while working to minimize environmental impacts.

Kinectrics is a proud member of the Canadian Council for Aboriginal Business (CCAB), which aims to strengthen the relationship between Aboriginal and non-Aboriginal peoples, businesses, and communities. In this regard, we are pleased to work with Bruce Power, which is also a member of the CCAB and has demonstrated a strong commitment to Aboriginal communities. Bruce Power and its supplier partners created an Indigenous Relations Supplier Network (IRSN) to further strengthen their relationships with local indigenous communities and, with our expanding presence in Bruce County, Kinectrics is also a member of the IRSN.

In summary, by working closely with Bruce Power and understanding their principles and safety culture, combined with our personal interaction at all levels from trainees to executives, we are confident Bruce Power is capable of manufacturing and supplying Lu-177 safely and reliably from its Bruce B Unit 7 reactor.

On this basis we support Bruce Power's application to amend its Power Reactor Operating Licence to allow for the production of Lu-177 through the installation and operation of a Lu-177 Isotope Production System at Bruce B Unit 7. If you have any questions or require clarification, please do not hesitate to contact me at 416.207.6511 or david.harris@kinectrics.com.

Sincerely,

David Harris
President and CEO

Kinectrics Inc