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Oral presentation

Written submission from the Center for Nuclear Energy Research on the University of New Brunswick's Fredericton campus

In the Matter of the

New Brunswick Power Corporation, Point Lepreau Nuclear Generating Station

Application for the renewal of NB Power's licence for the Point Lepreau Nuclear Generating Station

Commission Public Hearing
Part 2

May 11 and 12, 2022

Exposé oral

Mémoire du Centre de recherche sur l'énergie nucléaire à l'Université du Nouveau-Brunswick, Campus de Fredericton

À l'égard de la

Société d'Énergie du Nouveau-Brunswick, centrale nucléaire de Point Lepreau

Demande de renouvellement du permis d'Énergie NB pour la centrale nucléaire de Point Lepreau

Audience publique de la Commission
Partie 2

11 et 12 mai 2022

Canada

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March 28, 2022

Commission Secretariat
Canadian Nuclear Safety Commission
280 Slater Street
Station B, Ottawa, Ontario
K1P 5S9

Subject: Intervention for the May 11-12, 2022 License Renewal Hearings for the Point Lepreau Nuclear Generating Station

Dear Commission Secretariat;

I am pleased to offer this intervention for the license renewal of the Point Lepreau Nuclear Generating Station (PLNGS) on behalf of the Centre for Nuclear Energy Research (CNER) on the University of New Brunswick's (UNB) Fredericton campus and would welcome the opportunity to appear in person at the hearings. While issuing this intervention for CNER, I can also speak to the value and necessity of the continued operation of Point Lepreau from the perspective of an Engineering Professor within UNB's Department of Chemical Engineering.

For nearly 18 years, in addition to chemical engineering core curriculum, I have taught undergraduate and graduate students in the Chemical Engineering program courses such as Nuclear Power Plant Chemistry and Corrosion, Reactor Physics, Nuclear Safety and Reliability and Energy and the Environment, which focusses on sustainable, low-carbon energy production and compares all options of electricity production available to society. From all these educational experiences, it is clear that electricity production from nuclear power is a highly beneficial and necessary component of the province's, the country's and the world's energy mix. I fully support the application from NB Power and the Point Lepreau Nuclear Generating Station in their license renewal for the next five years.

Over the past 40 years, Point Lepreau has provided significant value to the province of New Brunswick. This is not solely by providing approximately one third of the province's electricity; Point Lepreau is a valuable community stakeholder that is responsible for high-skill employment for over 800 employees, many of whom have graduated from New Brunswick Universities. I, personally, have been a regular visitor to the station and frequently work directly with graduates from the engineering program at UNB. This is an invaluable and intangible benefit to the continued operation of the station: keeping bright young engineers, scientists and technicians home, in New Brunswick.

Not only does Point Lepreau provide employment opportunities for New Brunswick natives and UNB graduates, it also provides significant research and development opportunities for New

Brunswick companies and universities. Through CNER, UNB has collaborated with NB Power and Point Lepreau on numerous R&D projects over the years. One of these projects led to the successful installation of CNER's HEPro corrosion monitor, a prototype sensor for monitoring the corrosion rate of the outlet feeder pipes that was created, designed, constructed and installed by CNER and the Research and Productivity Council of NB (RPC) - completely home-grown technology deployed for the benefit of Point Lepreau and the nuclear industry in Canada. The HEPro is still installed at Point Lepreau and is acting as the key industrial demonstration of the technology. The continued collaboration with Point Lepreau on the HEPro technology recently led to another successful deployment at a CANDU station in Ontario and generated significant additional interest from the nuclear industry domestically and abroad. A key success of CNER's interaction with Point Lepreau is the recently announced commercial partnership between CNER and the Canadian Nuclear Laboratories (CNL) where we are now participating and even more engaged in providing expertise and services to nuclear utilities in Canada and abroad. The partnership is now in full swing and expanding further the commercial opportunities and potential for HEPro deployment.

Other current interactions between UNB, CNER and Point Lepreau include targeted R&D collaborations surrounding key processes in the station's End Shield Cooling System, test programs sprung from the HEPro installation examining chemistry effects in the primary heat transport system, consulting activities on station chemistry and radiation protection, undergraduate cap-stone design projects surrounding tritium removal from the moderator system, water treatment plant upgrades, heavy water upgrading and biofouling prevention in the station's cooling water systems. The benefits to the UNB community and to the province of the continued operation of Point Lepreau are numerous and expanding every year, providing challenging design projects for undergraduate students and interesting R&D opportunities for Masters and PhD students.

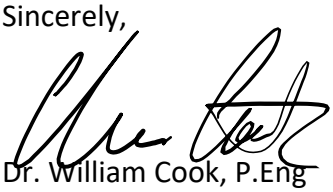
Further still, renewed interest and support for the continued operation of Point Lepreau and NB Power's commitment to future nuclear growth through the small modular reactors (SMR) program has sparked a resurgence in students looking for nuclear-related courses at UNB. As a result, in 2019 the Department of Chemical Engineering relaunched the Nuclear Power Option program, which graduated its first four students in Spring 2021 and currently has 20+ chemical engineering students registered at various points in their degree programs. With this success, in partnership with the provincial government's department of Postsecondary Education Training and Labour (PETL), the Faculty of Engineering at UNB is currently examining the potential to expand the Nuclear Option Program to all departments in the faculty with the possibility of growing the program to offer a full Nuclear Engineering degree, one that would be only the second of its kind offered in Canada.

Point Lepreau provides more than just electricity for the province's electrical grid. Through interactions with the station and UNB, young minds are open to the possibly of building a career in New Brunswick, R&D opportunities flourish and commercial technology that has been home-grown in New Brunswick, can and has been developed and deployed. Point Lepreau is an

invaluable asset to the province of New Brunswick and I fully support its license renewal and continued operation for the next five years.

Thank you for your consideration of my intervention. If you have any questions or comments, please feel free to contact me at any time.

Sincerely,



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