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Written submission from the Energy and Nuclear Engineering Department, Ontario Tech University

In the Matter of the

Cameco Fuel Manufacturing Inc.

Application to Renew the Class IB Nuclear Fuel Facility Licence for Cameco Fuel Manufacturing Inc. in Port Hope, Ontario

Commission Public Hearing

November 23-24, 2022

Mémoire du Energy and Nuclear Engineering Department, Ontario Tech University

À l'égard de

Cameco Fuel Manufacturing Inc.

Demande de renouvellement du permis d'exploitation de l'installation de combustible nucléaire de catégorie IB pour Cameco Fuel Manufacturing Inc. à Port Hope (Ontario)

Audience publique de la Commission

23 et 24 novembre 2022

Canada

OntarioTech Engineering & Applied Science

September 27, 2022

Canadian Nuclear Safety Commission
280 Slater Street
Ottawa, ON
Canada, K1P 5S9

Re: Cameco's application for renewal of the Cameco Fuel Manufacturing operating license

To the Commission Secretariat and other interested parties,

I am writing in support of Cameco's application to renew their operating license for the Cameco Fuel Manufacturing (CFM) facility in Port Hope, ON. This request comes with two primary components: A) a 20-year license term, and B) a change to their annual production limit.

The CFM facility plays an important role in Canada's nuclear fuel cycle and the generation of clean, reliable, safe, and affordable electricity in Canada. Cameco is an experienced company in the mining, milling, refining, and manufacturing of nuclear fuel to be supplied to Canada's nuclear generating stations with several decades of experience. The role that Cameco has in the Canadian nuclear supply chain is critical in supporting nuclear power generation, which currently contributes about 60% of electricity in Ontario. Furthermore, the nuclear industry employs some 76,000 persons directly or indirectly in Canada.

The primary objective of CFM is to fabricate nuclear fuel bundles ready for use by CANDU nuclear generating stations. CFM receives uranium dioxide powder from its conversion plant, which is then pressed and sintered into small pellets. These pellets are inserted into zirconium alloy fuel tubes and then arranged into a manufactured fuel bundle. Fuel products have been manufactured on this site for several decades. The overall process hasn't changed much – some changes to efficiencies but the focus on safety and quality assurance has been unwavering.

Ontario Tech University offers the only undergraduate Nuclear Engineering program in Canada. As part of our accredited undergraduate nuclear engineering program, students take a class in Nuclear Fuel Cycles, which I have taught since 2017. In this class, all aspects of the conventional nuclear fuel cycle are covered, including fuel manufacturing and the operations of the CFM facility are reviewed (among others). Students learn about the overall fuel manufacturing process, including risks associated with that process and how they are mitigated. In previous years, students (not necessarily part of this class) were able to tour some of Cameco's facilities, including CFM. While on these tours, students get first-hand experience of the high regard to safety and rigour exercised in the Canadian nuclear industry.

The request for a 20-year license renewal (A) appears to be a business decision in alignment with commitments made by Cameco's customers following plant refurbishment. From my perspective, this seems to be a logical request since there are at present no foreseeable significant changes to the fuel design/requirements of Cameco's current customers that would likely impact Cameco's operations in the coming years. The Canadian Nuclear Safety Commission would continue overseeing operations at the CFM facility, and the site and its surrounding areas would be monitored for possible contamination, as has been done for many years. Risks to health and safety appear to be quite low and well mitigated.

The request for an increase to annual production limits at CFM (B) by approximately 24% annually also includes a change to the unit of measure (from megagrams of UO_2 to tonnes of U) and from a monthly limit to an annual limit. The change in unit of measure seems to be out of convenience without foreseeable issues. The change from monthly to annual limits in addition to total annual limit offer greater flexibility, which would likely be helpful to minimize risk to supply chain challenges. This is an understandable mitigation strategy to avoid disruption that could affect the reliability of electricity production in the province.

In my role as Chair of Energy and Nuclear Engineering Department at Ontario Tech, I provide my full endorsement for Cameco's application for a site license renewal at CFM. The successful operation of this facility is critical to supporting the Canadian nuclear supply chain. Thank you for the opportunity to provide this intervention letter and I'd be happy to take any questions that you may have.

Best Regards,

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