Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 21-H107.8

File/dossier : 6.01.07
Date : 2021-08-18
e-Docs pdf : 6625744

Written submission from The Society of United Professionals

Mémoire de The Society of United Professionals

In the Matter of

À l'égard de

Application for a licence amendment to authorize activities related to the production and possession of Molybdenum-99 (Mo-99) at the Darlington Nuclear Generating Station (NGS)

Demande de modification de permis en vue d'obtenir l'autorisation de produire du molybdène 99 (Mo-99) à la centrale nucléaire de Darlington

Public Hearing - Hearing in writing based on written submissions

Audience Publique - Audience fondée sur des mémoires

September 2021

Septembre 2021

Canada

SOCIETY *of*
UNITED PROFESSIONALS
IFPTE 160

PRODUCTION AND POSSESSION OF MOLYBDENUM-99 AT DARLINGTON NGS

SUBMITTED TO ONTARIO POWER GENERATION BY THE SOCIETY OF UNITED PROFESSIONALS

AUGUST 9, 2021

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The Society of United Professionals appreciates the opportunity to comment on Ontario Power Generation's application to amend the Darlington Power Reactor Operator Licence (PROL) 13.02/2025 in order to permit production of the radioisotope molybdenum-99 (Mo-99) from Unit #2 at the Darlington Nuclear Generating Station.

The Society of United Professionals ("Society") represents more than 8,700 engineers, scientists, supervisors, and other professionals mostly concentrated in Ontario's energy and legal sectors. The Society has represented professional workers since 1944.

The Society represents employees working for more than a dozen different employers in the energy sector, including Ontario Power Generation (OPG), Bruce Power, Nuclear Waste Management Organization, Hydro One, the Independent Electricity System Operator, the Ontario Energy Board, New Horizon System Solutions, Toronto Hydro, Inergi, Kinectrics, and BWXT.

Society members work in every aspect of the electricity industry. They are involved in generation, transmission and distribution of electricity, management of the electricity system and market, and regulation and enforcement of standards. They are employed as first-line managers and supervisors, professional engineers, scientists, information systems professionals, economists, auditors and accountants, as well as serving in many other professional, administrative, and associated occupations.

The Society's members are knowledge workers who take great pride in exercising their civic, social, and professional responsibilities. As a union, the Society stands behind our members' professionalism, integrity, and commitment to excellence in all areas, particularly workplace safety, public health, and environmental sustainability.

Society members' expertise was acknowledged in Ontario's 2017 Long Term Energy Plan wherein it was stated:

> For more than four decades, Ontario's electricity sector labour unions have been key partners in Ontario's nuclear industry. Today, Power Workers' Union and Society of Energy Professionals [as the Society of United Professionals was known at the time] together represent more than 23,000 employees in Ontario's electricity system, including our nuclear plants and supply chain companies. OPG and Bruce Power will continue to rely on their skills and expertise to refurbish our nuclear fleet and ensure safe operation for decades to come.

The Society takes great interest in proposals to capitalize on the wide-ranging benefits of nuclear technology. Not just as a crucial source of carbon-free electricity generation but a source of important medical isotopes used in diagnostic imaging and treatment.

Ontario Power Generation's application for a licence amendment to authorize the production of Molybdenum-99 (Mo-99) seeks to install and operate a Mo-99 Isotope Irradiation System. The decay isotope of Mo-99, Technetium-99m (Tc-99m), is used to perform medical diagnostic procedures. Per OPG's license application, "this translates into over 30 million heart, cancer and bone diagnostic scans,

which are performed annually using Tc-99m." This isotope is used in approximately 80% of all diagnoses involving a nuclear substance.

Mo-99 production at the Darlington Unit 2 site would be of significant value to the medical community and their patients. As social justice advocates, the Society believes that access to timely and affordable health care is a right of every Canadian. As such, the Society believes that it is vital to secure a reliable Canadian supply chain for Mo-99. This supply chain is of particular importance due to the global shortage of Mo-99 since the shutdown of the National Research Reactor Universal at Chalk River, Ontario in 2016.

Given that Mo-99 will be produced where Society members are embedded, we are confident that their expert knowledge and training will align with the operational requirements of the proposed system. Moreover, standing tripartite committees such as the Joint Health and Safety Committee serve as vanguards ensuring that Society members who operate the proposed Mo-99 Isotope Irradiation System will have a forum to raise concerns of potential hazards and insist on training in accordance with the appropriate radiation protection qualification.

The Society, having reviewed OPG's license amendment application, as well as the CNSC's Staff Submission on the license amendment application, supports the CNSC Staff's recommendation that the Commission accept OPG's license amendment request.

The CNSC Staff's Submission concluded that OPG "has a management system that meets regulatory requirements with adequate processes in place to manage and ensure the successful completion of the Mo-99 project[1]", and that "OPG's established process to foster a healthy safety (sic) culture and to ensure business continuity will not be impacted by the installation and operation of the Mo-99 IIS.[2]" This is grounded in a detailed examination of the Safety and Control areas, which concluded that the installation of the Mo-99 system is not expected to have a significant impact on the safe operation of the reactor, the public or the environment (per the predictive environmental effects assessment). In conjunction with the aforementioned safety analysis, the use of Regulatory Hold Points embedded in the proposed Licence Condition 15.6 will authenticate OPG's operational readiness and continued safe operation of the Darlington NGS.

Based on a review of OPG's licensing application and CNSCs staff assessment, it is noted that there is negligible impact on Darlington's licensing basis, governance, and established programs and processes. It is understood that OPG has engaged Indigenous and First Nations groups throughout 2019 and 2020 on the proposed project and has identified areas of concern. Furthermore, ongoing consultation is being planned in different forms.

The Society is satisfied with the CNSC Staff's conclusions on OPG's ability to possess, transfer, produce, package, manage and store Mo-99 and its associated decay products as the licensee has a robust radiation protection program which addresses occupational and public exposure to radiation hazards.

[1] https://www.nuclearsafety.gc.ca/eng/the-commission/hearings/cmd/pdf/CMD21/CMD21-H107.pdf
[2] ibid

In accordance with paragraphs 24(4)(a) and (b) of the Nuclear Safety and Control Act (NSCA), OPG has demonstrated and CNSC staff have concluded that the licensee:

a. Is qualified to carry on the activity that the licence will authorize the licensee to carry on; and

b. Will, in carrying on that activity, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

As such, the Society supports OPG's application to amend the Darlington Power Reactor Operator Licence (PROL) 13.02/2025 to allow for the production of Mo-99 on Unit 2 at the Darlington Nuclear Generating Station.

The Society requests that OPG provide regular updates to the Society's Local Vice President responsible for the Darlington Nuclear Generating Station.

Respectfully submitted,

Michelle Johnston
President, Society of United Professionals