Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 21-H107.6

File/dossier : 6.01.07
Date : 2021-08-18
e-Docs pdf : 6626108

Written submission from the Curve Lake First Nation

Mémoire de la Curve Lake First Nation

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

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August 18, 2021

RE: Curve Lake First Nation Comments on Ontario Power Generation's licence amendment application for a Molybendum-99 Irradiation System at the Darlington Nuclear Generating Station

Dear Secretariat,

On behalf of our Consultation Department at Curve Lake First Nation (CLFN), we hope that this written intervention finds you safe and healthy during these difficult times and hope that members and staff at CNSC are doing well.

Ontario Power Generation's Project(s) and ongoing facility operations are located in the traditional territory of the Michi Saagiig and Chippewa Nations, collectively known as the Williams Treaties First Nations, which include: Curve Lake, Hiawatha, Alderville, Scugog Island, Rama, Beausoleil, and Georgina Island First Nations.

Curve Lake First Nation is the steward and caretaker of the lands and waters within our territory in perpetuity, as we have been for thousands of years, and we have an obligation to continue to steadfastly maintain this responsibility to ensure their health and integrity for generations to come. Protection, conservation, and sustainable collaborative management are a priority for Curve Lake First Nation.

This written intervention represents the views of CLFN only. Consultation and accommodation are critical in ensuring the rights and interests of the Mississauga Anishinabek Nation are prioritized regarding projects in our territory. Our Consultation Department has emphasized that environmental protection and sustainability is an integral component of the future of the Curve Lake First Nation. All plans and activities must be viewed through the lens of environmental protection and sustainability. These requirements ensure that Curve Lake First Nation's interests and rights are being protected within our territory; that we are able to protect the ability to exercise our rights as people – physically, culturally, and spiritually; that we are able to foster sovereignty, cultural identity, and sustainable succession. This is central to all relationships being progressed with various regulators and proponents.

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We would like to thank the CNSC for providing us with this opportunity, through capacity funding, to support the review of OPG's license amendment application. Due to the number of other topics for consultation, this particular topic was not put on the agenda in our routine meetings in 2021 with CNSC nor with OPG. Likewise, this particular topic was not put on the agenda in our routine meetings in 2021 with BWXT. That said, the CNSC has made CLFN aware of this Commission hearing and how to participate in the Commission's hearing process, and the availability of participant funding. CLFN has taken this opportunity to review the main documents.

To begin, CLFN is encouraged and would like to learn more about the efforts of OPG as OPG and third parties external to OPG develops a Canadian supply chain of Technetium-99 (Tc-99m), an important medical isotope used for diagnostic nuclear medicine. In principle, CLFN is supportive of the health and societal benefits of nuclear medicine and potentially life-saving diagnostic procedures. CLFN recognizes that the Mo-99 Isotope Irradiation System (IIS) that is the basis of OPG's Licence Amendment Application, is a First-Of-A-Kind (FOAK) project, and as such, would like to learn more about and participate in relevant areas of such a project as it is developed and as experience is gained and evolved through time.

Early in CNSC's staff CMD (i.e., 1.1.1 Station), the location of the Darlington NGS is described. In the future, adding a description or statement of the relevant treaty territory would make this type of section more complete and more inclusive.

It is important to CLFN that when the statement below is made, that there is some mechanism that we would be informed and engaged at a future date in order to make an assessment of relevance and priority.

"In the proposed supply chain for Mo-99, OPG would be responsible for the irradiation of natural molybdenum. All other aspects of the overall process would be handled by third parties external to OPG and are thus out of scope in this license amendment request. Despite being out of scope to the current licensing process, the following aspects of the supply chain also require a valid CNSC licence, obtained from a distinct CNSC licensing process:

- *Certification of Type-B package to be used for off-site transportation of Mo-99*
- *Radioisotope processing and disposal of associated radioactive wastes*
- *Manufacturing, use, and disposal of Tc-99m generators"*

It is important to CLFN to continue our ongoing overall discussions with CNSC and OPG on various Environmental Protection topics (e.g., Environmental management system, Environmental risk assessment, Assessment and monitoring, Effluent and emissions control, etc.), such that there is a deeper understanding of the analysis involved and the conclusions reached (i.e., when using the terms "negligible", "not significant" in describing environmental impacts).

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CLFN has an interest to obtain a copy of the Provincial Nuclear Emergency Response Plan (PNERP) technical study, which we understand may hold relevant information to the Mo-99 licence amendment application. We understand that this is now available as of August 16, 2021. Ultimately, we hope that this will assist in our understanding of how extreme weather events and climate change are assessed and incorporated into design.

The following sections of this review will provide specific details of concern for CLFN and are focused as follows:

Appendix A: Environmental Impacts from Mo-99 IIS Design and Operation
Appendix B: Risk Assessment of Mo-99 IIS Design and Operation
Appendix C: Hazardous Events and Future Implications

It is our hope that there is enough information in this submission that will help guide the future dialogue between OPG, CNSC, and CLFN Consultation Department staff to make progress from information sharing, to engagement, all the way to meaningful consultation as we continue our work together on this and other topics.

We do this work to uphold our responsibilities to care for the earth and waters, for our people, our nation, and for all our relations. Our foundational belief is balance; our values and principles are built upon the respect, care, and nurturing of all life as part of an interconnected whole and necessary for the balance and harmony required for Mino-Bimaadiziwin now and for future generations.

Sincerely,

Submitted by Francis Chua (Support to Curve Lake First Nation Consultation Department)
by email on behalf of

Dr. Julie Kapyrka
Lands Resource Consultation Liaison
Curve Lake First Nation

cc:
Chief Emily Whetung, Curve Lake First Nation
Kaitlin Hill, Lands Resource Consultation Liaison, CLFN
Blair Carter (CNSC)
Cassandre Roy-Drainville (CNSC)
Adam Levine (CNSC)

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Appendix A: Environmental Impacts from Mo-99 IIS Operation

Environmental protection and sustainability is integral to the future and well being of Curve Lake First Nation and "*All our relations",* the idea that everything in the universe is connected. Therefore, a focus of this review was to assess the results of the predicted environmental impact from the proposed Mo-99 IIS.

As previously mentioned, the use of wording such as "negligible" and "no significant harm" is seen throughout both OPG's and CNSC's CMDs, especially when discussing the potential environmental impacts of the proposed Mo-99 IIS operation. As well, the information and details provided by OPG on the Predictive Environmental Risk Assessment (PEA) is brief in itself. OPG states that there will be no unacceptable environmental impact from a human health and ecological risk assessment perspective. The only evidence provided is that the highest potential dose to a member of the public would not exceed 0.006uSv/year. These statements or conclusions are extremely difficult to interpret or review without any background information and corresponding discussion.

OPG states that the Mo-99 IIS project will not impact groundwater protection and monitoring, yet CNSC notes that "in case" tritium is released into the groundwater, OPG's monitoring network would provide timely detection. This may be a contradiction and can be discussed further. CLFN previously identified the issue of "shifting baseline syndrome" apparent in OPG's and CNSC's monitoring programs. This is defined by the gradual change in the accepted normalities for the conditions present in the natural environment. CLFN would like to see the inclusion of indigenous knowledge to help move towards a more comprehensive monitoring system.

CLFN has an interest in the PEA conducted by OPG for the FOAK Mo-99 IIS project and would like to see information sharing that goes beyond the superficiality of this assessment. It is difficult for CLFN to be confident in its understanding of the environmental impacts of the Mo-99 IIS without any empirical evidence prior to commissioning. CLFN is not satisfied with its own understanding of this area as well as with CNSC's, and OPG's conclusion there will be no significant impacts from the Mo-99 IIS project.

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Appendix B: Risk Assessment of Mo-99 IIS Design and Operation

As stewards and caretakers of the lands and waters within our territory, Curve Lake First Nation would like to ensure that the safety of *All our Relations* is held to the highest standard. The Mo-99 IIS design is a FOAK project, consequently, a cautionary approach must be taken for all safety aspects of this design. The limited, or absent, details on the rationale for the Mo-99 IIS design makes it difficult to comprehensively review related safety concerns, however main concerns are summarized below.

The many partners that are involved in the Mo-99 IIS project adds to the complexity of the project itself, with OPG, as the licensee ultimate responsibility for ensuring safe production of Mo-99 and the continued safe operations of the Darlington NGS. OPG provided limited details on the novel process of the Mo-99 IIS production (aside from a simplified flow chart). Information is extremely brief for both the transportation and waste management processes, with no information given on the elevator, basket system, hydraulic system, pneumatic system, or capsule-drying system.

CLFN seeks more meaningful information sharing through continued dialogue with both OPG and CNSC staff to address the lack of details above.

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Appendix C: Emergency Management and Future Implications

In previous dialogue with CNSC staff, CLFN has noted concerns relating to the non-disclosure of the Provincial Nuclear Emergency Response Plan (PNERP) Technical study from the Office of the Fire Marshall and Emergency Management (OFMEM). It is in our interest that the CNSC provide transparency through these documents that hold critical studies and accident modelling relating to the event of a nuclear emergency. To our knowledge, the PNERP Technical study has only been recently made publicly available.

The PNERP Technical Study completed in 2019 was commissioned following public consultation and an independent advisory committee recommended that additional considerations such as at least 365 days of weather and to topographical characteristics that could influence plume dispersal. In that same year, the International Atomic Energy Agency (IAEA) published their report on the diverse range of impacts on the energy sector resulting from gradual climate change and extreme weather events. Notably they address the vulnerability of existing nuclear plants to extreme weather events and future design need to account for a changing climate. Furthermore, various types of extreme weather events may lead to critical safety system failures. The most notable impact of climate change to nuclear plants is the degradation of thermal efficiency and the volume and temperature in adjacent water bodies affecting cooling availability.

It is unclear from the brief details provided from OPG's safety assessments and CNSC's review, if extreme weather events and the future impacts of climate change were considered in the safety analyses. Using the existing Consolidated Nuclear Emergency Response Plan (CNEP) as guidance, CNSC has deemed there are no fundamental safety concerns for the safe installation and operation of the Mo-99 IIS however there is insufficient information for CLFN to understand this conclusion. CLFN would like to move towards greater understanding on this issue.

In general, we encourage collaboration between Indigenous knowledge holders and science practitioners to work together to understand the potential impacts that climate change will have on the safety of *all our relations*.