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Written submission from the North American Young Generation in Nuclear (NAYGN) – Durham Chapter

In the Matter of

Ontario Power Generation Inc.

Application to amend the Pickering Waste Management Facility to authorize construction and operation of the Pickering component storage structure

Public Hearing - Hearing in writing based on written submissions

July 2025

Mémoire de North American Young Generation in Nuclear (NAYGN) – Durham Chapter

À l'égard d'

Ontario Power Generation Inc.

Demande de modification du permis de l'installation de gestion des déchets de Pickering pour autoriser la construction et l'exploitation de la structure de stockage des composants de Pickering

Audience Publique - Audience par écrit fondée sur des mémoires

Juillet 2025

Canada

February 28th, 2025

Tribunal Officer, Commission Registry
Canadian Nuclear Safety Commission
280 Slater Street
P.O. Box 1046, Station B
Ottawa, Ontario K1P 5S9
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Re: Application to amend the waste facility operating license for the Pickering Waste Management Facility (PWMF).

Salutation President and Commission Members

To preface, we would like to thank you for allowing us to contribute an intervention on behalf of the North American Young Generation in Nuclear (NAYGN) - Durham Chapter, in support of Ontario Power Generation's (OPG) application to amend the PWMF's operating license.

The NAYGN –Durham Chapter is a local branch of NAYGN and represents roughly 1500 members studying and working across Ontario's Durham Region. As a youth run, youth driven organization, the Durham Chapter is committed to organizing and supporting various professional development and community events such as public advocacy in schools, technical seminars, and community engagement events.

Ontario Power Generation has long since demonstrated their interest in helping supply Ontario's energy needs. With increased on-site waste storage capacity, the proposed license amendment will help ensure that nuclear waste is handled properly; all the while limiting radiological exposure.

NAYGN actively supports the application to amend the waste facility operating license for the PWMF for the following reasons:

1. The PCSS fulfills a requirement for the Pickering Nuclear Generating Station (PNGS) Refurbishment Project.

2. OPG has proven its ability to maintain performance metrics.

3. OPG's existing safety record and the Pickering Component Storage Structure's (PCSS) benefits to public safety.

The PCSS fulfills a requirement for the PNGS Refurbishment Project.

Commercial nuclear power has over half a century of operational history in Canada, and Canada's journey with nuclear waste management has seen multiple legislative iterations

over the same period. Storage of nuclear waste can be fundamentally broken into 2 categories: interim and permanent. Interim storage is handled by the waste generator – which is the justification behind sites such as the Western Waste Management Facility (WWMF), the Darlington Waste Management Facility (DWMF), and the PWMF. Permanent storage of nuclear waste is a far more complicated matter. In the 2002 Nuclear Waste Act, a non-profit organization called the Nuclear Waste Management Organization (NWMO) was introduced. The NWMO's core purpose is to advise the Canadian government on the most comprehensive, integrated, and economically secure approaches to managing the country's used nuclear fuel and radioactive waste. NWMO's initial scope was the creation and submission of a study focused on various international approaches to handling nuclear waste, and in turn determining what the application and utilization of such approaches would look like in Canada. Solutions such as Deep Geological Repositories, on-site storage at nuclear reactor sites, and centralized above-ground storage facilities were all evaluated.

OPG, and the PNGS, is aware of the various regulatory, legislative, and company-driven requirements it must meet to ensure that the PNGS 5-8 Refurbishment is a success. One such requirement is the ability to store interim waste produced during the refurbishment process until it can be safely and securely stored at a permanent low and intermediate level waste (L&ILW) storage facility. The PCSS helps achieve the waste storage requirements of the Pickering Refurbishment and decommissioning projects by creating approximately 40,000 square feet of L&ILW interim storage space. This would prevent the risk of exceeding OPG's existing waste storage capacity via the WWMF.

OPG has confirmed in their application to this body that the proposed PCSS building, and it's role as interim storage of L&ILW, complies with CNSC and CSA regulations surrounding the management of radioactive waste at the levels required for L&ILW. OPG has provided written confirmation that the PCSS facility will adhere to the same licensing standards as the existing PWMF, and any written licensing restrictions not currently met, such as a detailed plan for the eventual decommissioning of the PCSS, have been identified and committed to.

OPG and its ability to maintain performance metrics.

NAYGN Durham firmly believes that OPG has consistently demonstrated its ability to meet and exceed performance standards across multiple key areas. OPG's commitment to operational excellence is reflected in the company's strong track record of reliability, efficiency, safety, and technological innovation. These core values not only drive OPG's on-going success but contribute significantly to the energy needs of Ontario.

OPG excels in the reliability and efficiency of its power generation. Operating across multiple energy sources, including nuclear, hydroelectric, and natural gas, OPG has optimized the performance of its plants to ensure a consistent and reliable supply of power. The Darlington and Pickering nuclear stations are known for their high availability and capacity factors. These plants consistently perform above the industry average, achieving exceptional uptime and power output. For instance, in Q3 of 2024, Darlington reported a unit capability factor (UCF) of 91.12%, and Pickering reported a UCF of 95.8% - striking values when compared to Canada's reported 2023 UCF average of 69.7% across her 19 reactor units as per the IAEA's PRIS data. High unit capability allows for a stable energy grid, which is crucial for Ontario. OPG's operational efficiency allows the company to deliver a reliable and affordable energy supply to millions of Ontarians, meeting the province's ever-growing demand for electricity. The Pickering plant alone produced approximately 14% of all energy consumed in Ontario in Q3 2024.

In terms of operational excellence, the CNSC needn't look further than the completion of Darlington Unit 3: a recent milestone of the Darlington Refurbishment project. This multi-billion-dollar initiative is a shining example of OPG's ability to meet its set performance metrics with unit 3 being completed on budget and 5 months ahead of schedule. By extending the operational life of its nuclear units, OPG continues to ensure that the Darlington facility provides reliable, efficient energy while adhering to the highest safety standards. Safety and regulatory compliance are core pillars of OPG's operations.

OPG's existing safety record and the PCSS' benefits for public safety.

While it is true that the annual radiation dose to the nearby community will increase due to the construction and usage of the PCSS, the predicted dose would still be below CNSC's and OPG's acceptable public dosage limits. Allowing the addition of the PCSS to the PWMF operating license permits OPG to capitalize on established and successful radiation protection procedures and measures by building off existing infrastructure. The PCSS design will possess containment and shielding measures to par with the existing PWMF, ensuring that radiation exposure levels remain within safe limits to the public.

On the other hand, from a logistics standpoint, the PCSS would significantly minimize the transportation of irradiated materials. The incorporation of on-site storage is particularly important given the size and complexity of transporting steam generators (SGs) and other components. Providing interim on-site storage of the radioactive waste allows an overall reduction in transportation costs and safety considerations by simplifying material transportation needs prior to its permanent internment. On site storage will produce an efficient logistics plan to reduce the amount of vehicle traffic leaving the project site.

Alternatively, off-site interim storage would necessitate additional safety and security considerations as a new location would be naturally beyond existing site infrastructure.

OPG's radiation protection programming strives to protect the community from radiation by minimizing public exposure. Some key attributes in maintaining this programming include keeping public exposure below regulatory limits and introducing safeguards to prevent unplanned radiation exposures. OPG routinely conducts audits, self-assessments, and inspections to ensure compliance with industry standards and to identify areas for improvement for all nuclear sites. While emissions of nuclear material can occur during regular operation, throughout OPG's 50+ years of service no harm has ever come to the public from their nuclear operations. A study found that in 2017, living near an OPG nuclear generating station resulted in an additional average dose of less than 0.001 mSv. This is less than a 0.1% increase in the average Canadians' yearly radiation dose of 1.8 mSv.

Considering the importance of the Pickering Refurbishment towards meeting the province of Ontario's energy demands, and both the province and country's commitments towards increasing the availability of low emission, sustainable energy, NAYGN greatly supports the amendment of WFOL-W4-350.00/2028 to allow for the construction of the PCSS.

Thank you,

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