



**Written submission from
CANDU Owners Group Inc.**

**Mémoire de
CANDU Owners Group Inc.**

In the Matter of

À l'égard d'

Ontario Power Generation

Ontario Power Generation

**Ontario Power Generation – Application to
change the licensing basis for the Pickering
Waste Management Facility**

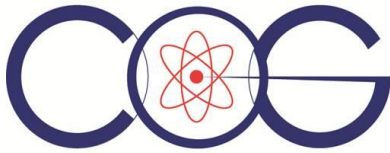
**Ontario Power Generation – Demande
visant à modifier le fondement
d'autorisation de l'installation de
gestion des déchets de Pickering**

Public Hearing – Hearing in writing based on
written submissions

Audience publique – Audience fondée sur
des mémoires

June 2024

Juin 2024



May 6, 2024

Canadian Nuclear Safety Commission Secretariat
c/o Julie Bouchard
Canadian Nuclear Safety Commission
280 Slater Street, P.O. Box 1046
Ottawa, ON K1P 5S9

Email: interventions@cnsccsn.gc.ca

Subject: Ontario Power Generation's Application to Change the Licensing Basis for the Pickering Waste Management Facility.

Dear Ms. Bouchard,

This CANDU Owners Group (COG) submission is in support of Ontario Power Generation's Application to Change the Licensing Basis for the Pickering Waste Management Facility (PWMF).

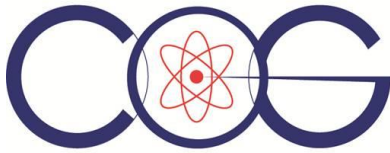
COG is a not-for-profit organization with membership from all owners of CANDU reactors both in Canada and internationally, focused on achieving *excellence through collaboration*. COG is dedicated to information sharing and collaboration on nuclear sector research and development on CANDU and advanced nuclear technologies. Together with its members, suppliers, research, and partner organizations, COG is continuously innovating nuclear plant equipment and processes to ensure the highest standards of safety, efficiency, and environmental performance.

To fulfill these objectives, COG is organized around the following four operational program areas:

- Nuclear Safety and Environmental Affairs
- Research and Development
- Information Exchange
- Joint Projects

COG members spend approximately \$75 million a year in R&D and Joint Projects to strengthen the safety, reliability, environmental, and cost performance of the CANDU nuclear plants. Investment into R&D is made by our members in proportion to the number of operating units, which makes OPG the largest current contributor to COG's R&D program. This, in turn, benefits the entire CANDU community, both domestic and international. In addition, COG has developed a leadership and knowledge management training program to strengthen leadership and management skills amongst high-potential technical managers in the nuclear industry.

The work facilitated by COG on behalf of its members relies on capable, knowledgeable, suppliers with deep expertise, human capacity, and facilities to undertake ground-breaking nuclear science. This research, and the associated engineering activity, is undertaken mostly in Canada by organizations such as Canadian Nuclear Laboratories, Kinectrics, AtkinsRéalis, Stern Laboratories, and Calian to support nuclear utilities such as OPG.



Over the past decades, the Pickering Nuclear Generating Station (PNGS) has benefited numerous times from the direct application of the work facilitated by COG that has supported the safe operation of its units and the PWMF. The COG Decommissioning and Waste Management Peer Group along with the Waste Management R&D and Strategic R&D, have produced position papers on radioactive waste processing, disposal, and storage to ensure alignment and a common understanding within the Industry, and to promote the adoption of domestic and international best practices. Meanwhile, COG's R&D activities continue to develop tools and methodologies to minimize, sort, segregate, and characterize radioactive waste so it can be processed and disposed of in an environmentally responsible manner as per Canada's Policy for Radioactive Waste Management and Decommissioning.

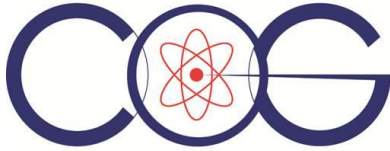
The Pickering Nuclear Generating Station units 5 to 8 began commercial operation in the 1980s and its design includes a single Irradiated Fuel Bay (IFB). The used fuel discharged by the daily fueling operations of all units and from outage work is stored in the IFB for about ten years and under several meters of water to protect the station personnel. The design of the IFB includes a dedicated cooling system that supplies a temperature-controlled, constant flow of water to remove the decay heat from the used fuel. Even with the large volumetric capacity of the IFBs, the used fuel is moved after ten years from its wet storage at the IFBs to Dry Storage Containers (DSCs) to preserve the operational volume of the IFB. The DSCs are later transported to and stored at the different storage buildings of the Pickering Waste Management Facility (PWMF) located to the East of PNGS.

COG and the rest of the Canadian Nuclear Industry were pleased to learn that the Government of Ontario had endorsed OPG's proposal to refurbish Pickering NGS units 5 to 8. That will ensure many more years of safe, clean, reliable, and affordable electricity production for the people of Ontario while producing high-value radioisotopes such as Cobalt-60 and helping meet Canada's Net Zero Goals by 2050. The refurbishment will require the almost simultaneous defueling of the four units toward the end of 2026, an activity that may challenge the capacity of the IFB and cause unnecessary delays if the used fuel is not moved out earlier than ten years.

To address the above challenge, OPG developed a sound approach to minimize delays and risks to personnel, the public, and the environment. The approach consists of moving the used fuel from wet storage to the DSCs after six years in the IFB since after that period the used fuel can be effectively cooled only by air without adversely affecting the physical integrity of its fuel sheath; the expected higher equilibrium temperature and higher dose of the six-year-old fuel are within the design conditions of the DSCs. To ensure that the expected higher dose is not a threat to its personnel and meets the dose regulatory limit at the perimeter of the station, OPG plans to rearrange the DSCs at the PWMF: DSCs containing younger fuel are placed at the centre of the storage buildings and are surrounded by DSCs with older fuel that function as a radiation shield.

In summary, COG and its members continuously improve safety, reliability, affordability, and environmental outcomes in Canada's nuclear plants, and Ontario Power Generation is a leader in these efforts. COG fully supports OPG's application to load its DSCs with six-year-old fuel instead

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of ten-year fuel and store them at its Pickering Waste Management Facility, which is a change of its licensing basis. COG is confident that OPG will continue with its exemplary safety record in every aspect of its operations.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rachna Clavero', written in a cursive style.

Rachna Clavero
President and CEO
CANDU Owners Group