



**Written submission from the
CANDU Owners Group**

**Mémoire du
CANDU Owners Group**

In the Matter of the

À l'égard d'

Ontario Power Generation Inc.

Ontario Power Generation Inc.

Application to extend the operation of
Pickering Nuclear Generating Station
Units 5 to 8 until December 31, 2026

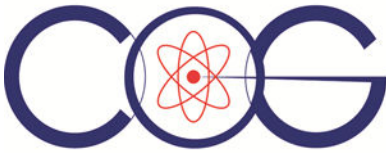
Demande visant à prolonger l'exploitation
des tranches 5 à 8 de la centrale nucléaire de
Pickering jusqu'au 31 décembre 2026

Commission Public Hearing

Audience publique de la Commission

June 2024

Juin 2024



April 15, 2024

Canadian Nuclear Safety Commission Secretariat
c/o Louise Levert
Canadian Nuclear Safety Commission
280 Slater Street, P.O. Box 1046
Ottawa, OM K1P 5S9

Email: interventions@cnsccsn.gc.ca

**Subject: Ontario Power Generation's Request for Authorization to Operate
Pickering NGS Units 5 to 8 beyond December 31, 2024**

Dear Ms. Levert,

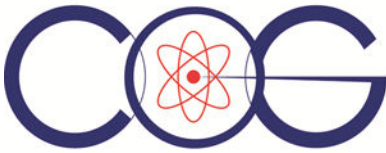
This submission is in support of Ontario Power Generation's request for authorization to operate Pickering NGS units 5 to 8 until the end of 2026.

The CANDU Owners Group (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.



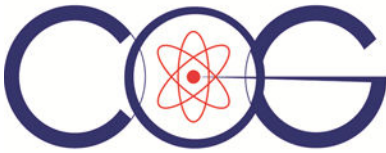
The work facilitated by COG on behalf of its members relies on capable, knowledgeable, suppliers with deep expertise, human capacity, and facilities to undertake ground-breaking nuclear science. This research, and the associated engineering activity, is undertaken mostly in Canada by organizations such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

The Pickering Nuclear Generating Station units 5 to 8 started commercial operations in the early 1980s around the same time COG was founded. Over the past four decades, Pickering NGS has benefited numerous times from the direct application of the work facilitated by COG that has supported the safe operation of its units. For example, Pickering NGS staff have access to COG's Operational Experience (OPEX) database that catalogues a large number of events from which lessons learned are drawn, shared, and internalized, and to a Q&A Forum used to easily exchange information on various topics in the areas of Engineering, Operations, and Maintenance. Numerous Pickering NGS staff have attended the leadership training courses offered by COG, whose quality is recognized at international levels, and are also active participants in COG's peer groups, working groups, and task teams where experiences, expertise, and new ideas are shared among staff from fellow operating plants to support each other and ensure industry alignment when facing challenging issues.

Also, over the years Pickering NGS has participated in many COG joint projects such as the experimental work carried out to confirm that the operational life of the PNGS fuel channels could be extended to the end of 2026 in the Fuel Channel Life Cycle Management program. In the area of R&D, COG and Pickering NGS have worked with the rest of the industry to prepare technical deliverables required to address demanding challenges, for instance, the reproduction of thermal-hydraulic operating conditions in simulated fuel channels and fuel bundles to develop the new critical heat flux and post-dry out correlations, or the development of the passive autocatalytic hydrogen recombiners, or the behaviour of systems, structures, and components (SSCs) during severe accident conditions.

All of the aforementioned work has supported the safe operation of the Pickering NGS units since the beginning of their commercial operation more than 40 years ago and has been used to safely extend their useful life beyond the initial estimations. In other words, the collaboration executed via COG supports the safe, continued operation of Pickering NGS through 2026.

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. However, to avoid a potential shortage of electricity supply, Pickering NGS units 5 to 8 need to operate until the end of 2026 to ensure that the refurbishment of Unit 4 at Darlington NGS, the last unit to be refurbished, is finished and the unit is returned to service.

Safety has always been OPG's highest priority. Pickering NGS has a robust design with multiple layers of safeguard systems and is staffed by highly trained Nuclear Professionals in Operations, Maintenance, and Engineering, who conduct their duties with utmost diligence and strong commitment to meeting the rigorous safety requirements and standards. In addition, a Periodic Safety Review prepared in support of the Pickering NGS 2018 relicensing was reassessed to demonstrate that the design and operation of SSCs support the safe operation of Pickering NGS units 5 to 8 until the end of 2026. Pickering NGS has a strong and comprehensive aging management program in place that is aligned with Industry best practices to ensure the condition of SSCs is well understood and maintained. Furthermore, a recent evaluation by the World Association of Nuclear Operators has confirmed that Pickering NGS is an example of a nuclear power plant with excellent performance.

Over the past decades, numerous highly paid technical jobs directly related to the operation of nuclear plants were created in Ontario, and more jobs were added to support the needed supply chain to build and maintain the reactors and support the ongoing research and development needed for the continuous improvement of the plants. The planning and execution of the Pickering NGS refurbishment will create many additional jobs that will bring even more prosperity to the Durham region where the Pickering NGS is located.

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 request for authorization to operate Pickering NGS units 5 to 8 until the end of 2026 and is confident that OPG will continue with its exemplary safety record in every aspect of its operations. COG looks forward to providing additional context through an oral intervention in June.

Sincerely,

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

Rachna Clavero
President and CEO