



Oral presentation

Exposé oral

Written submission from the Canadian Nuclear Society

Mémoire de la Société Nucléaire Canadienne

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



Canadian Nuclear Society
Société Nucléaire Canadienne

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Ref. 2024-H-05

April 25, 2024

Senior Tribunal Officer, Commission Registry
Canadian Nuclear Safety Commission
280 Slater Street,
PO Box 1046, Station B
Ottawa, ON K1P 5S9

**Intervention: Ontario Power Generation's Request for Authorization to Operate Pickering
NGS Units 5 to 8 Beyond 2024**

This is the written intervention of the Canadian Nuclear Society (the Society) for Ontario Power Generation's (OPG) request for authorization to continue operating Pickering Nuclear Generating Station (NGS) Units 5 to 8 beyond 2024. Having read the submitted information and considered the historic performance of OPG, the Society sees considerable advantages to the continued operation of the units and no good reason for them not to be operated. Therefore, the Society is intervening in support of Ontario Power Generation's request for authorization to extend commercial operation of Pickering NGS Units 5 to 8 beyond 2024.

While selected members of the Society plan to attend the Public Hearing to provide response to any question by the Commission, this written intervention does not constitute a request for an oral presentation.

The Canadian Nuclear Society is a society of learned experts promoting the exchange of information and technical insights, and to encourage education and knowledge sharing in areas related to nuclear science, nuclear technologies, and their peaceful applications including nuclear power generation.

The Society is comprised of around 1000 members from across the Canadian nuclear industry, consultants, academia, and those interested in nuclear energy. Many of our members and their families live and work close to the Pickering NGS and their safety is important to both them and the Society.

Both the federal and provincial governments consider nuclear power as essential to support the reliability, affordability, and sustainability of electricity systems. The need to maintain Ontario's existing capacity is supported by the future predictions of electricity demand by the Independent Electricity System Operator (IESO). Commercial nuclear power plants are identified in Canada and internationally as necessary for rapid and sustained reductions in global greenhouse gas emissions while meeting energy needs. The recent COP28 agreement



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recognized the need for “Accelerating zero- and low- emission technologies including, inter alia, ... nuclear, ...”. Extending operation of existing plants is a very safe, reliable, and cost-effective way to contribute to the Ontario roadmap and pathway to meet electricity needs, considering the Paris Agreement objectives.

Canada has enjoyed a long record of safe nuclear energy production overseen by a strong, competent regulator to the benefit of both residents and the environment. Publicly available Regulatory Oversight Reports provide an overview of the historical safety of Pickering NGS and its design and operations. Based on a review of those reports, the Society can see Pickering NGS has been consistently operated safely by Ontario Power Generation who has remained qualified to do so.

The CNSC staff environmental protection review of Pickering NGS from 2016 to 2022 provides the scientific and evidence-based conclusion that potential risks to the environment from operating Pickering NGS are low to negligible. CNSC staff found that human health is not impacted by operations at the Pickering NGS site and that health effects are indistinguishable from health outcomes found in the general public.

Periodic Safety Reviews (PSR) are a systematic and comprehensive nuclear safety assessment of a nuclear power plant carried out at regular intervals, typically every 10 years. The assessment includes review of plant design, condition, and operational elements of a nuclear power plant for all safety and control areas important to nuclear safety. Its objective is to identify practical nuclear safety enhancements to a level approaching modern requirements or practices, and to ensure plant nuclear safety until the next periodic safety review is performed. PSRs that follow Canadian standards and CNSC requirements have become a regulatory requirement in support of Canadian nuclear power plant licensing efforts.

The most recent PSR for Pickering NGS was re-assessed to evaluate the impact of extended operating period to the end of 2026 and identifies improvement actions to be completed by the end of 2024. This comprehensive PSR gives the Society a high degree of confidence in the ongoing nuclear safety and robustness of Pickering NGS beyond 2024.

Confidence in the safety of a nuclear power generation is also provided by deterministic safety analyses, which are foundational to the original design bases of a nuclear power plant, and which were then subsequently supplemented by Probabilistic Safety Assessments (PSA) to risk-inform decision making and confirm internationally accepted safety goals are met. Background information about PSAs and how they are used in the Canadian and international nuclear regulatory framework are well-described in Section 2 of CMD 16-M46. A PSA provides an indicator of nuclear plant safety risk for a variety of internal and external hazards that considers the design features of a plant and how the plant is operated and maintained. The summary of



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PSAs for each nuclear power plant in Canada are publicly disclosed per regulatory requirements. The 2022 PSA summary for Pickering NGS demonstrates safety goals are met and overall risk to the public is low.

In the learned opinion of the Society, Pickering NGS units 5 through 8 have been, and continue to be, safe and fit for service, and Ontario Power Generation remains qualified to operate units 5-8 to December 2026.

The undisputed need for emission-free electricity demonstrates that the plant is needed, and the work done to assess its ongoing safe operation provides assurance that this can be done safely. As a result, the Canadian Nuclear Society supports Ontario Power Generation's licence amendment application for Pickering NGS, PROL 48.01/2028, to amend the current end of commercial operating date for units 5 to 8 from December 31, 2024, to December 31, 2026.

Yours Sincerely,

Doddy Kastanya, PhD, P.Eng.

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