



Oral presentation

Exposé oral

**Written submission from the
Canadian Nuclear Association**

**Mémoire de
l'Association 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

April 29, 2024

Senior Tribunal Officer, Commission Registry
Canadian Nuclear Safety Commission
280 Slater St.
PO Box 1046 STN B
Ottawa, Ontario K1P 5S9

Re: Canadian Nuclear Association Intervention regarding Ontario Power Generation's request for authorization to operate Pickering NGS Units 5 to 8 beyond December 31, 2024.

The Canadian Nuclear Association (CNA) appreciates the opportunity to intervene in support of OPG's request to continue to operate Pickering Nuclear Generating Station (PNGS) Units 5 to 8 until December 31, 2026. The CNA has approximately 100 members, representing over 76,000 Canadians employed directly or indirectly in exploring and mining, uranium, generating electricity, advancing nuclear medicine, and promoting Canada's worldwide leadership in science and technology innovation. Our members are proud of our safety and environmental record, our contribution to Canada's economy and our vital role in the fight against climate change.

The current licence authorizes PNGS to operate all units until the end of 2024. OPG is asking the Commission to allow Units 5-8 to continue to operate until December 31, 2026. Units 1 and 4 will be placed in safe storage at the end of 2024 as per the existing licence. OPG's shareholder, the government of Ontario, has recently approved the refurbishment of PNGS Units 5-8 and OPG is proceeding with project definition and planning. Upon the required shutdown of Units 5-8, the station will be in an extended shutdown state until the next phase has been determined or refurbishment begins.

Recent IESO reports have indicated that Ontario faces potential electricity shortfalls as demand rises due to population growth and increased electrification to reduce emissions. The extension of PNGS Units 5-8 will provide much needed non-emitting baseload power and additional reliability in 2025 & 2026 as OPG finishes the Darlington refurbishment and Bruce Power continues with its major component replacement program. In addition, continued operations will further benefit the province by reducing emissions by 2.1MT each year, extending employment for approx. 4500 skilled workers for two years and continuing to produce 10% of the world's supply of Cobalt 60.

Notwithstanding the benefits outlined above, the safety of the public, workers and the environment remains OPG's (and indeed the entire nuclear industry's) top priority. To that end, it is important to note that in the last few years, PNGS has had its best performance in its history. Station reliability has improved significantly due to investments and improvements



made over the current licence period. Over the current licence, PNGS has had one of the best forced loss rate performances which in turn has led to it recording its second highest generation output in 2023. The CNA believes the fact that PNGS's performance has improved as the station ages is an achievement worth celebrating and a testament to the dedication of the station staff and OPG's outstanding operational performance.

As required by the current licence, a reassessment of the Periodic Safety Review (PSR) was carried out and it confirmed that the design, condition, and operation of the station supports continued operations from 2024 to 2026. The results of the PSR reassessment are documented in an integrated implementation plan which contains 32 commitments which are to be completed by the end of 2024. CNSC staff found that the reassessed PSR met regulatory requirements.

OPG also conducted comprehensive Probabilistic Safety Assessments (PSA) which demonstrated that the likelihood of public risk from a serious accident remains very low. The PSAs also confirm that the design of PNGS remains very robust and safe. In addition, in 2022, a Predictive Effects Assessment (PEA) Addendum was prepared to demonstrate that human health and the environment will continue to be protected.

Notwithstanding the PSR, PSAs and PEA, OPG continues to invest in safety enhancements. Improvements during the current licence period include:

- Completion of hydrogen passive autocatalytic recombiners installation at all Pickering units
- Provisions for Phase-1 emergency mitigation equipment to provide emergency make-up water and power to ensure continuous fuel cooling and monitoring.
- Completion of Severe Accident Management Guidelines to provide plant staff guidance on the prevention and mitigation of accident progression.

One of the key reasons for PNGS continuing strong performance is OPG's Integrated Aging Management Program, which ensures appropriate maintenance, testing and monitoring are ongoing at PNGS. Particular attention is paid to major components such as fuel channels, feeders, and steam generators to assure the plant is fit-for-service and safe throughout the licence period.

In the 2018 licence renewal, CNSC included a specific licence condition (15.3) requiring OPG to demonstrate that pressure tube toughness would be sufficient for safe operation beyond 120ppm. Evolving inspection results and analysis has made Licence Condition 15.3 obsolete and CNSC staff have recommended replacing that Licence Condition with a new one (6.2) which requires PNGS implement and maintain an enhanced fitness for service program for fuel channels. OPG has stated that it can and will satisfy this new requirement. The CNA and its members are confident in the safety of the pressure tubes and OPG's ability to meet the new licence condition.

PNGS conducted an Environmental Risk Assessment (ERA) which evaluated and confirmed that the risk to human health and the environment is very low. This conclusion was supported by CNSC staff who conducted their own environmental protection review which also confirmed that PNGS poses very low risk to human health and the environment.

OPG is committed to environmental sustainability and works hard to minimize its environmental footprint. OPG has a comprehensive environmental protection program designed to minimize operational impacts on the environment. The program uses multiple barriers to control and minimize emissions to the environment and all emissions are closely monitored. The environmental monitoring program regularly samples, water, air and soil to ensure that both radiological and non-radiological emissions remain at safe levels. OPG posts the environmental monitoring results on its external website so local communities and the general public can be assured of the plant's safety.

CNA would like to note that PNGS has a very robust biodiversity program which is designed to retain, restore, replenish, and recover local flora and fauna effected by the continued operation PNGS. Over the past 5 years PNGS has planted approximately 2700 native trees and shrubs. PNGS holds the Gold Standard Wildlife Habitat Council certification and has been recognized by host communities of Pickering and Ajax for its environmental leadership.

The Canadian Nuclear Association and its members are strongly committed reconciliation with Canada's First Nations and OPG is building mutually beneficial working relationships with Indigenous communities near its current and future operations including PNGS. OPG meets regularly with the Williams Treaties First Nations, the Mohawks of the Bay of Quinte and the Metis Nation of Ontario to share information, discuss development initiatives, planned project activities and discuss environmental and operational performance.

In 2021, OPG signed a framework agreement with Curve Lake First Nation which dedicated time and capacity support to address key issues. A similar framework agreement was signed with the Mississaugas of Scugog First Nation in the fall of 2022 and work is progressing with Hiawatha First Nation to develop an agreement. These agreements are intended to provide longer-term capacity to support regular touchpoints and ongoing engagement.

Also in 2021, OPG launched a Reconciliation Action Plan which outlined commitments with clear actions and timelines in several areas including procurement. OPG has expanded opportunities for Indigenous businesses to participate in procurement including nuclear. OPG has met \$237m of the \$1B economic impact target for Indigenous communities and business in the 2021-2031 period.

In addition, OPG maintains strong relationships with local communities and shares information on facility operations and performance with members of the public. PNGS provides support to over 140 grass roots community initiatives in Pickering, Ajax and Whitby and most of PNGS 4500 employees live in Durham region and are committed to the community.

CNA staff have read OPG's licence application and CNSC staff's assessment. We agree with CNSC staff conclusions that OPG has adequately demonstrated that PNGS Units 5-8 meet the regularly requirements of fitness for service of major components including fuel channels, feeders, and steam generators and that OPG remains qualified to carry out the activities authorized in its licence.

Therefore, the CNA is pleased to strongly recommend that the Commission amend OPG's operating licence to allow the continued operation of Pickering Nuclear Generating Station until December 31, 2026.

Sincerely,



Steve Coupland

Acting Director, Regulatory Affairs
Canadian Nuclear Association