



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

Canada



Ontario Power Generation (OPG)

Application to Renew the Operating Licences of the
Pickering Nuclear Generating Station and Waste
Management Facility and Authorize the Refurbishment of
Units 5-8

CMD 26-H7.A

Commission Hearing Part 1
June 23, 2026



CNSC Staff Presentation



- Introduction and Purpose of Hearing
- Overview of OPG's Licence Application
- CNSC Staff's Assessment of OPG's Licence Application
 - Proposed Refurbishment of Units 5-8
 - Decommissioning of Units 1-4
 - Pickering Waste Management Facility
- OPG's Performance During the Current Licence Period
- CNSC Public Engagement
- Conclusions and Recommendations



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INTRODUCTION



Pickering Nuclear Site

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Pickering Nuclear Generating Station (NGS)
Source: OPG



Pickering Waste Management Facility (WMF)
Source: OPG



Current Operating Licences

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PROL 48.04/2028

9. Environmental Protection

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2.4 The licensee shall implement and maintain certification programs in accordance with CNSC regulatory document REGDOC-2.2.3, *Personnel Certification, Volume III: Certification of Reactor Facility Workers, Version 2*. Workers who began an applicable initial training program in accordance with the requirements outlined in REGDOC-2.2.3, *Personnel Certification, Volume* [Amended 2025-03]

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PROL 48.04/2028

VI) EXPLANATORY NOTES:
(i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.

PDF Ref.: e-Doc 7604178
Word Ref.: e-Doc 7604151
File / Dossier: 2.01

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NUCLEAR POWER REACTOR OPERATING LICENCE
PICKERING NUCLEAR GENERATING STATION

I) **LICENCE NUMBER:** PROL 48.04/2028

II) **LICENSEE:** Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

III) **Ontario Power Generation Inc.** [Amended 2026-03]
1905 Cabot Road, Unit 100
Oshawa, Ontario
L1H 8P7, Canada

IV) **LICENCE PERIOD:** This licence is valid from September 1, 2018 to August 31, 2028, unless suspended, amended, revoked or replaced.

V) **LICENSED ACTIVITIES:**
This licence authorizes the licensee to:

(i) operate the Pickering Nuclear Generating Station (hereinafter "the nuclear facility") at a site located in the City of Pickering, in the Regional Municipality of Durham, in the Province of Ontario;

(ii) possess, transfer, use, package, manage and store the nuclear substances that are required for, associated with, or arise from the activities described in (i);

(iii) import and export the nuclear substances, except controlled nuclear substances, that are required for, associated with, or arise from the activities described in (i);

(iv) possess, transfer, produce, package, manage, and store produce Cobalt-60;

(v) possess, transfer, manage and store heavy water from other nuclear facilities;

(vi) transport Category II nuclear material by road vehicle from the nuclear facility spent fuel bay to the outside waste storage facility;

(vii) possess, transfer, export, package, manage and store nuclear substances, except controlled nuclear substances, from the Western Waste Management Facility;

(viii) possess and use prescribed equipment and prescribed information that are required for, associated with, or arise from the activities described in (i); and

(ix) possess, use, manage and store enriched uranium as required for fission chambers for the Pickering Nuclear Generating Station units 1 and 4 Shutdown System Enhancement, including spares.

- The Pickering NGS is licensed under a power reactor operating licence (PROL)
 - The current PROL authorizes operation of units 5-8 to the end of 2026, followed by transition to a safe storage state
- The Pickering WMF is licensed under a separate Class 1B waste facility operating licence (WFOL)
 - The current WFOL authorizes up to 6 dry storage container (DSC) buildings and the Pickering Component Storage Structure (PCSS)

Both licences are valid until August 2028



- Consider OPG's application to renew and consolidate the operating licences of the Pickering NGS and Pickering WMF and authorize the refurbishment of units 5-8
- OPG has applied for early licence renewal to authorize the proposed refurbishment project to align with the planned project schedule



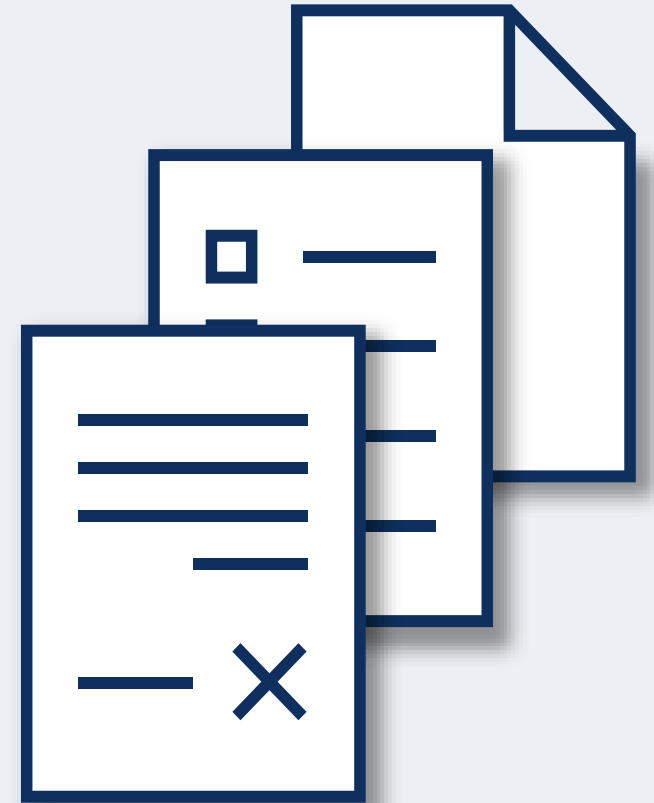
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OVERVIEW OF OPG'S LICENCE APPLICATION



OPG's licence application requests that the Commission:

- Authorize the refurbishment and continued operation of Pickering NGS units 5-8
- Renew the operating licences for the Pickering NGS and Pickering WMF for a period of 10 years
- Consolidate the operating licences into a single renewed licence
- Include a licensed activity related to the decommissioning of units 1-4
- Increase the dry storage container (DCS) capacity in the 5th storage building from 1,200 to 1,410 DSCs at the Pickering WMF





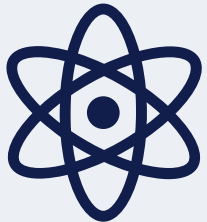
Predictive Environmental Risk Assessment (PERA)

Evaluates the environmental risks associated with the planned activities at the Pickering site



Climate Change Resilience Assessments (CCRA)

Identifies climate change-related hazards that may impact the Pickering nuclear site in the future



Safety assessment for Pickering WMF storage building #5

Assesses the safety of increasing the capacity of storage building #5 from 1,200 DSCs to 1,410 DSCs



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CNSC STAFF'S ASSESSMENT OF OPG'S LICENCE APPLICATION



- Licence renewal applications are subject to the requirements of the *General Nuclear Safety and Control Regulations* and the *Class I Nuclear Facilities Regulations*
- CNSC staff are satisfied that OPG's licence renewal application and supporting documentation are complete and meet all applicable regulatory requirements



- CNSC staff performed a technical assessment of OPG's application and supporting documentation and are satisfied that:
 - OPG has suitable programs and processes in place to safely conduct the proposed activities
 - The proposed activities are not predicted to result in adverse effects on people or the environment
 - OPG has adequately considered hazards due to climate change on the Pickering Nuclear Site



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PROPOSED REFURBISHMENT OF UNITS 5-8



Retube & Feeders

Replace fuel channels, calandria tubes, and feeder piping

Steam generators

Replace all steam generators, which will be removed through an opening created in the containment dome

Deep-water intake

New coolant intake that will draw water from a deeper part of the lake



Pickering NGS units 5-8

Source: OPG



Additional planned scope includes:

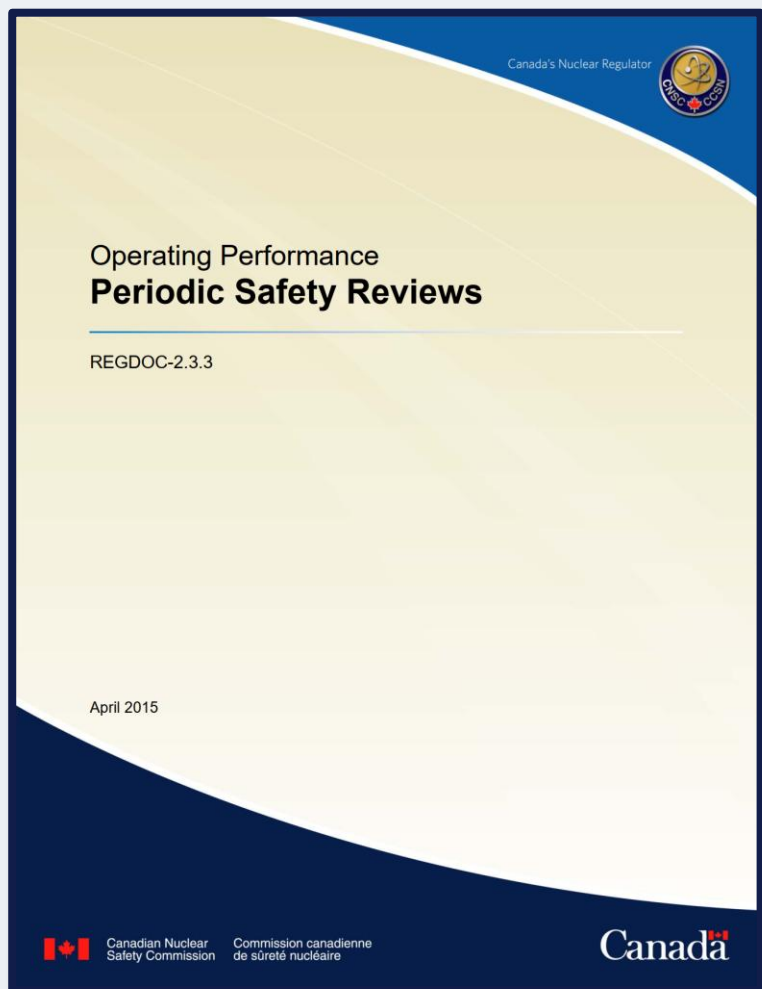
- Turbine generator system overhauls and upgrades
- Digital control computer upgrades
- Replacement of standby generators
- Addition of a new containment filtered venting system
- Installation of a shield tank overpressure protection system
- Inspections, repairs, and replacement of civil structures and components



Deep Water Intake (DWI)

- OPG has indicated that the new DWI would provide several benefits, including:
 - Improved cooling performance for the Pickering NGS
 - Reduced fish impingement
 - Enhanced resilience to climate change
- The PERA notes mitigation and monitoring measures to reduce anticipated impact to the environment from constructing the DWI
- Requires construction authorization from Fisheries and Oceans Canada

A new 1.5 km long, 10 m wide tunnel into Lake Ontario



- A comprehensive evaluation of the design, condition, and operation of a nuclear power plant
- OPG is conducting a PSR to support refurbishment and continued operation, in accordance with [REGDOC-2.3.3, Periodic Safety Reviews](#)
- 15 safety factor reports submitted and reviewed by CNSC staff
- **Next steps:**
 - Global Assessment Report (GAR) **by August 2026**
 - Final Integrated Implementation Plan (IIP) **by August 2027**



- The GAR presents the findings of the PSR, including the overall conclusions and identified safety improvements to be considered
- The IIP presents the proposed safety improvements, as well as timeframes for implementation
 - In accordance with REGDOC-2.3.3, OPG is required to submit the IIP to CNSC staff for acceptance
- OPG has committed to include and track the final scope of the proposed refurbishment project in the IIP
- CNSC staff will verify that all completion criteria are met prior to closing any IIP commitment



- A new licence condition 3.4 in the proposed PROL would require OPG to conduct a PSR at least every 10 years and implement the IIP
- The prerequisites for the release of the proposed regulatory hold points include completion of any related IIP commitments
- During the licence period, OPG will be required to submit an annual status report and notify CNSC staff of all changes to the IIP
- CNSC staff will update the Commission on OPG's PSR as part of the status report on power reactors

CNSC staff will continue to verify that OPG's PSR meets regulatory requirements

- OPG has established a Pickering Refurbishment Program for the planning, preparation, and execution of refurbishment work
- “Engineer, Procure, Construct” (EPC) contractors will perform the majority of refurbishment work
 - OPG’s health and safety programs apply to all workers at the Pickering NGS and WMF, including EPC contractors
- The program incorporates operating experience (OPEX) and lessons learned from other refurbishment and construction projects



Certified Operations Staff

- In accordance with [REGDOC-2.2.3, Personnel Certification, Volume III: Certification of Reactor Facility Workers](#), all certified operations staff will move to inactive status following the shutdown of units 5-8
- Certified staff will continue to receive required training, including simulator-based training, while in inactive status
- Reinstatement to active status requires a period of “work under supervision” that will not be possible during the return to service of unit 5, since no staff will be in active status
- CNSC staff are satisfied with OPG’s proposed alternative approach to confirm that workers can perform their duties competently and safely



Refurbishment Regulatory Oversight

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- CNSC on-site inspectors will verify that refurbishment work is performed in accordance with regulatory requirements
- Technical specialists will review and assess project execution and technical submissions
- All prerequisites must be met prior to the release of any regulatory hold points



CNSC inspector at the Pickering NGS

Source: CNSC



CNSC staff recommend 4 regulatory hold points (RHPs) per unit:

1. Prior to fuel load
 2. Prior to removal of the GSS
 3. Prior to exceeding 1% full power
 4. Prior to exceeding 65% full power
- Licence condition 15.2 requires Commission authorization to remove each RHP and includes the necessary prerequisites
 - Recommend delegation of authority to verify RHP prerequisites to the Executive Vice President and Chief Regulatory Operations Officer and the Director General of the Directorate of Power Reactor Regulation

All RHP prerequisites must be met prior to continuing to the next phase



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DECOMMISSIONING OF UNITS 1-4



- In December 2024, OPG submitted a Detailed Decommissioning Plan (DDP) and Storage with Surveillance (SwS) plan for units 1-4
 - The SwS plan describes activities to maintain the units in safe storage
 - The current DDP describes activities that are limited to the removal of outbuildings and non-nuclear components
- In June 2025, CNSC staff accepted the DDP and SwS plan
- In September 2025, OPG began conducting the activities described in the DDP

The CNSC requires that the DDP be updated every 5 years



- CNSC staff will continue to verify that decommissioning work is conducted in accordance regulatory requirements
- CNSC staff recommend that the Commission include a decommissioning activity in OPG's renewed PROL, limited to SwS and the work described in the current DDP
- The current DDP does not consider the decommissioning of nuclear structure, systems, or components

Further decommissioning work requires Commission authorization



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PICKERING WASTE MANAGEMENT FACILITY



- OPG is currently constructing DSC storage building #5
- Storage building #5 is a double capacity building that was originally planned as the fifth and sixth storage building
- CNSC staff are satisfied that OPG has measures in place to safely store up to 1,410 DSCs in storage building #5

Continued operation of the Pickering WMF is included in the consolidated PROL



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PERFORMANCE ASSESSMENT



- For each safety and control area (SCA), CNSC staff assessed OPG's performance during the licence period and the activities planned during the proposed licence period
- Compliance verification activities include reviews and assessments of licensee submissions and event reports, inspections, and compliance assessments
- CNSC staff are satisfied with OPG's performance across the 14 SCAs at the Pickering NGS and Pickering WMF

Details for all 14 SCAs are provided in CNSC staff's CMD 26-H7



To support continued operation, OPG has implemented new and revised CNSC regulatory documents and CSA Group standards at the Pickering NGS and WMF.

Reporting in accordance with:

- **REGDOC-3.1.1**, *Reporting Requirements for Nuclear Power Plants* for the Pickering NGS
- **REGDOC-3.1.2**, *Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills* for the Pickering WMF

Satisfactory operating performance at the Pickering NGS and WMF



- OPG has implemented and maintains a radiation protection program that meets the requirements of the [Radiation Protection Regulations](#)
- OPG will use the existing radiation protection program for the refurbishment of units 5-8
- OPG plans to incorporate lessons learned from other refurbishment projects in radiation protection planning
- Individual doses at the Pickering NGS and WMF remain well below the regulatory limit and as low as reasonably achievable (ALARA)

OPG's radiation protection program meets CNSC regulatory requirements



- OPG has developed a health and safety plan to address the changing hazards across the site during the proposed licence period
- OPG plans to use a mock-up to practice high risk tasks and incorporate OPEX from the Darlington NGS refurbishment project
- CNSC staff are satisfied that OPG's conventional health and safety programs continue to meet CNSC regulatory requirements

The health and safety of workers continues to be protected



- OPG has a well-established and robust environmental protection program that includes an Environmental Risk Assessment (ERA)
- CNSC staff reviewed OPG's 2025 predictive environmental risk assessment (PERA) and found that:
 - The PERA met regulatory requirements
 - Most proposed activities are not predicted to result in adverse effects to people or the environment
 - The PERA recommends monitoring and mitigation measures to minimize any anticipated impacts

The environment and the health of people continue to be protected



CNSC staff collecting samples in the vicinity of the Pickering NGS during the 2021 IEMP

CNSC staff publish an [environmental protection review report](#) for the Pickering Nuclear Site every 5 years

- The potential risks from releases to the environment are low to negligible

[2025 CNSC Independent Environmental Monitoring Program \(IEMP\) results](#) support CNSC staff's assessment that OPG's environmental protection program is effective



- OPG's nuclear emergency preparedness and fire protection programs meet CNSC requirements, including [REGDOC 2.10.1, Nuclear Emergency Preparedness and Response](#)
- Emergency Management Ontario updated the [Provincial Nuclear Emergency Response Plan](#) (PNERP) in 2025
- CNSC staff will verify that OPG's fire protection assessments addresses any anticipated modifications to fire hazards and fire protection systems

OPG continues to be prepared to respond to emergencies



- OPG's decommissioning and waste management programs meet the requirements of:
 - [REGDOC-2.11.1, Waste Management, Volume I: Management of Radioactive Waste](#)
 - [REGDOC-2.11.2, Decommissioning](#)
- OPG has established programs and procedures for radioactive waste management to identify the appropriate disposition pathway
- Existing programs are sufficient for the radioactive and hazardous waste that will be produced during the proposed licence period

OPG maintains a satisfactory waste management program



- The Commission accepted OPG's revised consolidated financial guarantee for the 2023-2027 period in 2022
- As of 2025, the financial guarantee requirement is \$22 billion and OPG's total guarantee available is \$28 billion
- Refurbishment and limited scope decommissioning work are estimated to reduce the necessary financial guarantee by \$440 million
- OPG intends to incorporate these activities into the updated 2027 financial guarantee submission to the CNSC

OPG's financial guarantee meets CNSC regulatory requirements



- Following enhanced regulatory scrutiny, CNSC staff have noted improvements with OPG's performance since 2023
- In 2025, the *Nuclear Security Regulations* were repealed and replaced; requirements for existing sites will come into force in October 2027
- OPG intends to modify security facilities and equipment during the licence period as part of the proposed activities:
 - Separation of units 1-4 from units 5-8; new fence and gate
 - Expansion of existing points of entry to accommodate additional workers

CNSC staff are satisfied with OPG's recent security performance



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PROPOSED CONSOLIDATED OPERATING LICENCE



- Consolidating the licences will not change CNSC regulatory requirements or CNSC staff's regulatory oversight
- All licensed activities, licence conditions, and associated requirements for both facilities are included in proposed licence and Licence Conditions Handbook
- CNSC staff recommend that the Commission consolidate the PROL and the WFOL

A single renewed PROL that includes both the Pickering NGS and WMF



- OPG's application requests a 10-year licence period, ending December 31, 2036
- OPG intends to complete the refurbishment of units 5-8 during the proposed licence period
- OPG plans to continue to operate the Pickering NGS and Pickering WMF during the proposed licence period, in accordance with the proposed consolidated operating licence

CNSC staff recommend a 10-year licence period



- New standard licence conditions and wording, including regarding the conduct of a PSR every 10 years and implementing an Indigenous engagement program
- A new licensed activity pertaining to the storage with surveillance of units 1-4
- Inclusion of licence conditions for the return to service of refurbished units and the release of regulatory hold points

Draft PROL included in Appendix C of CMD 26-H7



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PUBLIC ENGAGEMENT



- A [notice of public hearing](#) and participant funding was published on July 21, 2025, and [revised](#) on January 22, 2026
- The CNSC awarded \$343,584.86 to 10 applicants to assist with participation in the regulatory process
- CNSC staff held a public webinar in April 2026 to provide information on OPG's application and the CNSC hearing process

The intervention deadline for this hearing is August 12, 2026



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CONCLUSIONS AND RECOMMENDATIONS



- OPG's application meets the applicable regulatory requirements
- OPG is qualified to carry on the activities authorized in the proposed consolidated operating licence
- OPG has made adequate provisions for:
 - the protection of the environment
 - the health and safety of persons
 - the maintenance of national security measures required to implement international obligations to which Canada has agreed



CNSC staff recommend that the Commission:

- **Renew** the Pickering PROL, for a period of 10 years from January 1, 2027, until December 31, 2036, to authorize OPG to:
 - Refurbish and continue to operate Pickering NGS units 5-8
 - Continue to operate the Pickering WMF
 - Carry out the licensed activities listed in part IV of the proposed PROL
- **Consolidate** into the renewed PROL the licensed activities of the WFOL and concurrently revoke the WFOL
- **Delegate** authority as set out in section 8.5 of CMD 26-H7
- **Accept** OPG's proposal for the reinstatement of certified staff to active status during the proposed restart of Unit 5 with respect to licence condition 2.4
- **Authorize** OPG to store up to 1,410 DSCs in storage building #5 at the Pickering WMF



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