Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 26-H103.3

Date: 2026-07-31

Written Submission from Ontario Power Generation Inc.

Mémoire d'Ontario Power Generation Inc.

In the matter of

À l'égard du

Bruce Power

Bruce Power

Application to amend the licensing basis for Bruce A and B nuclear generating stations to operate Units 7 and 8 pressure tubes beyond 300,000 effective full power hours

Demande visant à modifier le fondement d'autorisation des centrales nucléaires de Bruce-A et B afin d'exploiter les tubes de force des tranches 7 et 8 au-delà des 300 000 heures équivalentes pleine puissance

Hearing in Writing

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Canada

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OPG Proprietary

July 31, 2026

Senior Tribunal Officer, Commission Registry
Canadian Nuclear Safety Commission
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Subject: Bruce Power's application to amend the licensing basis to operate Units 7 and 8 pressure tubes beyond 300,000 effective full power hours.

Ontario Power Generation (OPG) supports Bruce Power's application to amend the licensing basis to operate Units 7 and 8 pressure tubes up to a maximum of 310,000 effective full power hours (EFPH).

OPG's support is grounded in the importance of maintaining strong nuclear safety, reliable clean electricity supply, and continued alignment across Ontario's nuclear fleet on aging management, pressure tube integrity, and long-term operation.

Operational Safety

From OPG's perspective, the proposed amendment supports continued safe operation while Bruce Power manages the transition to planned Major Component Replacement outages for Units 7 and 8. The activities Bruce Power is progressing demonstrate a disciplined and evidence-informed approach to aging management, fitness for service, and pressure tube performance, including:

- Executing planned volumetric and dimensional inspections and maintenance activities consistent with their Fuel Channel Life Cycle Management Plan and established outage scopes of work.

- Continuing inspection and monitoring of pressure tube surface conditions, including enhanced oxidation phenomena, to strengthen the technical understanding of material condition over time.
- Advancing targeted monitoring of deuterium ingress in outlet rolled joint regions through planned scrape sampling in upcoming outages.
- Continuing inspection and monitoring of flaws in pressure tube inlet and outlet regions of interest during scheduled outages.
- Monitoring localized elevated hydrogen equivalent concentrations through material surveillance and industry research and development activities.
- Refreshing the technical basis related to Terminal Solid Solubility Hydrogen Dissolution by drawing on recent research, crack initiation work, and broader industry efforts to extend material property validity limits.
- Reassessing pressure tube fitness-for-service, probabilistic core assessments, and fracture protection evaluations for operation to 310,000 EFPH.
- Effective full power hour is calculated as the cumulative thermal energy generated by a fuel bundle divided by the bundle's reference full-power thermal output. EFPH is a normalized measure of operating exposure used in assessing pressure tube operating history and degradation.
- Continuing the pressure tube burst test program and validating fracture toughness modelling to support the technical case for extended operation.

As a fellow Ontario nuclear operator, OPG values the industry-wide collaboration that supports CANDU fleet safety, reliability, and long-term performance. Shared research, operating experience, and technical programs continue to strengthen the basis for aging management and pressure tube life management across the sector. Areas of continued relevance include:

- **Aging Management:** Continuous monitoring and improvement of systems, structures, and components through innovation and new software technologies, ensuring that long-term operation remains within validated safety limits.
- **Fuel Channel Life Management:** Extensive research into pressure tube behaviour and longevity, and material integrity under prolonged operation.
- **Safety Analysis:** Rigorous probabilistic and deterministic safety assessments, including severe accident studies and external hazard analysis.

OPG supports continued knowledge sharing among nuclear operators, researchers, and regulators to ensure that long-term operation remains grounded in strong technical evidence, conservative decision-making, and a shared commitment to nuclear safety.

OPG supports Bruce Power's application to amend the licensing basis for Bruce A and B to operate Units 7 and 8 pressure tubes up to 310,000 EFPH, recognizing the importance of safe, reliable nuclear generation in meeting Ontario's electricity needs while maintaining public confidence and environmental stewardship.

Sincerely,

Steve Gregoris
Chief Nuclear Officer
Ontario Power Generation Inc.