



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada

# DNNP Update

Presentation to the Durham  
Nuclear Health Committee

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Whitby, Ontario (Virtual Attendance)

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# Presentation Outline

- DNNP Overview and Licence Application
- Brief Overview of the Application review and Hearing Process

**To provide an update on the Canadian Nuclear Safety Commission's (CNSC) review of OPG's Licence to Construct application for the Darlington New Nuclear Project (DNNP).**

# The Commission



**Dr. Victoria  
Remenda**



**Mr. Jerry  
Hopwood**



**Mr. Pierre  
Tremblay**



**Ms. Andrea  
Hardie**



**Dr. Timothy  
Berube**



**Dr. Marcel  
Lacroix**

## TRANSPARENT, SCIENCE-BASED DECISION MAKING

Quasi-judicial administrative tribunal	Members are independent and part-time
Agent of the Crown (Duty to Consult)	Commission hearings are public and Webcast
Reports to Parliament through Minister of Natural Resources	Staff presentations are public
	Decisions are reviewable by Federal Court

# DNNP Overview

- Construction and operation of up to four new nuclear reactors at the existing Darlington site (up to 4,800 MWe)
- OPG selected the GE-Hitachi BWRX-300 reactor technology, and it was determined by the Commission that the selected technology fits within the bound of the existing environmental assessment ([Commission Decision](#))
- OPG submitted a Licence to Construct application to construct a single BWRX-300 reactor Facility

# DNNP Timeline

Date	Activity
2006	OPG applied for a Power Reactor Licence to Prepare Site (PRSL) and commenced an Environmental Assessment (EA) under CEAA 1992
2012	DNNP Joint Review Panel (JRP) released their Environmental Assessment report and the Government of Canada accepted recommendations under its jurisdiction. A PRSL was issued and valid until 2022
2021	OPG's PRSL was renewed by the Commission for 10 years, expiring in 2031. OPG selected the BWRX-300 reactor technology for the DNNP site
2022	OPG submitted an application for a Licence to Construct for a single BWRX-300 reactor, and submitted an updated Plant Parameter Envelope (PPE) and EIS Review report to include BWRX-300 parameters
2023-2024	CNSC Technical Review of the LTC application
2024 January	Commission Public Hearing on the Applicability of the BWRX-300 to the DNNP EA
2024 October 2025 January	Commission Public Hearing (Part I and Part II) on the Application for a Licence to Construct a BWRX-300 at the DNNP Site



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# CMD 24-H3

CNSC Staff Review and  
Recommendations of the LTC  
Application

# DNNP Licensing Review

- Commission Member Documents (CMD) are documents that provide the results of CNSC staff’s technical review and recommendations to the Commission
- Two separate CMDs have been prepared:

CMD #	OPG submission	CMD Status	Hearing
1	Updated documentation to demonstrate how the selected technology (BWRX-300) fits within the bounds of the Environmental Assessment	<a href="#">Available online</a> , as of September 18, 2023	Week of January 22, 2024
2	Licence to Construct (LTC) application and supporting documentation	<a href="#">Available online</a> as of June 2024	October 02, 2024 January 08-10, 2025

# CMD #1 – EA Applicability

**CNSC staff assessed the parameters of the bounding scenario in the EA and concluded that:**

- Mitigation measures are adequate to ensure there are no residual adverse environmental effects

**The Commission determined that the existing EA for the DNNP is applicable to the BWRX-300 reactor.**

- This Commission Decision did not authorise the construction of a BWRX-300 reactor
- Following this decision, CNSC staff proceeded with this Hearing on OPG's application to construct one BWRX-300 reactor



# OPG Construction Application

**OPG applied, in accordance with the NSCA and associated regulations, for a licence to construct to:**

- **Construct one BWRX-300 Powerblock**, which includes the structures, systems and components (SSCs) associated with the Reactor Building, Turbine Building, Control Building, and the Radwaste Building
- **Construct supporting infrastructure** for up to four BWRX-300 reactors
- **Inspect and test installed SSCs**, and conduct fuel-out commissioning
- **Complete remaining licensed activities** under the existing site preparation licence

*Licensed activities would not allow for nuclear fuel to be on site*

# CNSC Staff Assessment

CNSC staff reviewed the application using the NSCA and associated regulations, including *Class 1 Nuclear Facilities Regulations* and *General Nuclear Safety Regulations*. CNSC staff also leveraged modern codes, standards, and guidance, both domestic and international, to support the review.

## **CNSC staff's assessment considered OPG's:**

- Licence application and supporting technical documentation
- Existing programs, processes and procedures, as they would apply to the proposed BWRX-300 construction
- Implementation plans for new programs, processes and procedures
- Public information, community outreach, and Indigenous engagement activities
- Performance history

# CMD #2 – LTC Application

## **CNSC staff assessed and confirmed that OPG:**

- Described the scope of its construction program and activities in line with regulatory requirements
- Established agreements to manage the safe conduct of proposed licensed activities at the DNNP
- Has acceptable safety analysis methodologies, however, will be required to submit additional details to meet regulatory expectations
- Has adequate provisions to control, manage, and evaluate changes to facility design, however will be required to submit additional design details
- Has adequate provisions to continue to meet regulatory expectations and protect the health and safety of persons and of the environment

# CMD #2 – CNSC Staff Conclusions

**Based on a licensing regulatory review and technical assessment, CNSC staff have determined that:**

- The application to construct one BWRX-300 Powerblock at the DNNP site meets applicable regulatory requirements
- OPG has the necessary programs to safely conduct licensed activities, taking into account the implementation of all identified regulatory commitments and BWRX-300 licensing regulatory actions

# Proposed Licence and Draft Licence Conditions Handbook

- Proposed Power Reactor Construction Licence (PRCL):
  - Authorises the licensed activities
  - Contains standard SCA-based licence conditions, as well as site-specific licence conditions
- Draft Licence Conditions Handbook (LCH):
  - Describes compliance verification criteria (CVC) for each licence condition
  - Identifies applicable regulatory documents and standards
  - Provides guidance
  - Provides the process for removing regulatory hold points

*OPG must seek Commission approval for any change to licensed activities*

# Proposed Site-Specific Licence Conditions

**15.1** The licensee shall implement the mitigation measures proposed, and commitments made during the Darlington Joint Review Panel process, including the applicable recommendations of the Darlington Joint Review Panel Report, in accordance with the Government of Canada response.

**15.2** The licensee shall implement and maintain an environmental assessment follow-up program.

**15.3** The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.

**15.4** The licensee shall conduct Indigenous engagement activities, specific to the DNNP, throughout the period of this licence.

# Regulatory Hold Points (RHP)

- An activity or set of activities requiring approval of the CNSC prior to being allowed to proceed
- A licensee will be required to provide assurances that a set of pre-requisites have been completed, which will be verified by CNSC staff, prior to a recommendation being made
- CNSC staff have extensive experience with RHPs in the DNGS and BNGS refurbishment

# Regulatory Hold Point Process



**Licensee submits request to remove the RHP,** and submits documentation in support of completion of prerequisites described in LCH or in Protocol



**CNSC staff review** the licensee request to verify work has been completed



**CNSC staff submit a report** containing a recommendation describing the basis for the removal of the RHP



**Results of the review (including decision) communicated** to licensee, Indigenous Nations and communities, the Public, and Commission

*CNSC staff will review OPG submissions and conduct oversight to verify completion of pre-requisites prior to a potential removal of an RHP*



# Regulatory Hold Points

- As Condition 15.3, CNSC staff proposed three (3) Regulatory Hold Points
  - As documented in the *Licence Conditions Handbook*, there are pre-requisite commitments or deliverables to be met prior to proceeding with construction
- CNSC has robust processes in place to verify pre-requisites have been completed prior to recommending RHP removal

## Proposed Regulatory Hold Points

1. Installation of the Reactor Building Foundation
2. Installation of the Reactor Pressure Vessel
3. Fuel-Out Commissioning

# Regulatory Hold Points

- CNSC staff will confirm whether the following prerequisites have been met:
  - Completion of all commitments as summarised in CNSC staff CMD 24-H3 (Appendix D)
  - Workers are trained and qualified
  - Systems and components meet quality assurance and completion requirements of industry standards
  - Non-conformances or open action items are addressed
- If satisfied, staff will recommend the Commission or delegated authority remove the RHP and provide notice to the licensee, Indigenous Nations and communities, and the public

## Proposed Regulatory Hold Points

1. Installation of the Reactor Building Foundation
2. Installation of the Reactor Pressure Vessel
3. Fuel-Out Commissioning

# CMD #2 – Staff Recommendations

- CNSC staff recommended that the Commission:
  - Conclude that OPG is qualified to carry on the activities authorised by the proposed licence, and will make provisions to protect the health and safety of persons and the environment, and adhere to Canada’s international obligations
  - Authorise OPG to construct a single BWRX-300 reactor, subject to the conditions outlined in the proposed licence and Regulatory Hold Points

# Thank you

Stay connected!

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