Darlington New Nuclear Project

EIS Review & Public Hearing

Darlington Community Advisory Council

Sept. 26, 2023

BIG things start small.

ONTARIO POWER GENERATION

Deliver a world-class SMR, together

On - grid SMRs

GE Hitachi: BWRX-300

OPG's SMR technology selection - December 2021
Site Preparation Activities Begun – October 2022
Submitted a Licence to Construct to CNSC – October 2022

Darlington is the only site in Canada **licensed** for new nuclear build with an **accepted environmental assessment**.

Project partners announced: OPG, GE-Hitachi, SNC-Lavalin and Aecon.

Allows **low-carbon** nuclear energy to continue playing an important role in **Ontario's future** energy mix.

Integrated Model Project Delivery

ONTARIO POWER GENERATION

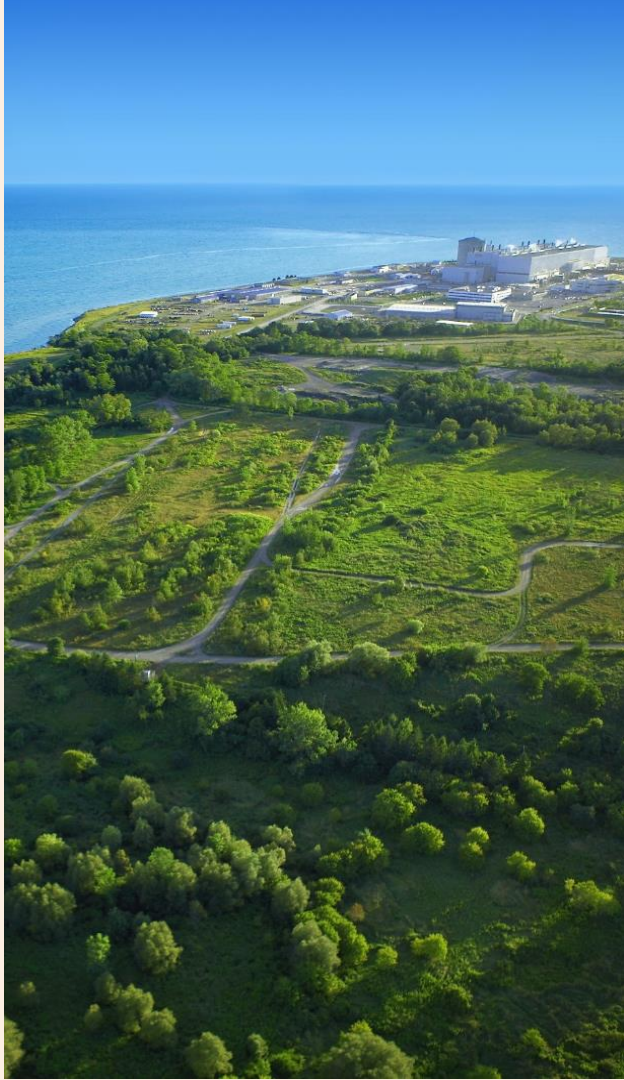
HITACHI

SNC·LAVALIN

AECON

- Owner and Licence Holder
- Technology Developer
- Architect Engineer
- Constructor

Building a world-class SMR, together.



Additional SMR Units

OPG will now commence planning and licencing for three additional SMRs at the Darlington site.

Four units would produce a total 1,200 MW, equivalent to **powering 1.2 million homes**.

Preliminary estimates indicate four SMRs could contribute **~$14 billion** to Ontario's GDP, and create and sustain **2,000 jobs** per year in Canada over 60 years.

Pending regulatory approvals by CNSC, additional SMRs could come **online between 2034 and 2036**.

Multiple units will allow common infrastructure to be shared across units, further **reducing cost**.

Recent site preparation work on the DNNP site

Darlington New Nuclear Roadmap

BIG things start small.

2021

- Site Preparation Licence Renewal Issued — COMPLETE
- SMR Technology Selected — COMPLETE
- 2021: CNSC Public Hearing for Site Preparations — COMPLETE

2022

- Site Preparation Activites Began — COMPLETE
- Licence to Construct Application Submitted — COMPLETE

2024

- Licence to Construct Issued
- 2024: CNSC Public Hearings for Licence to Construct

2028

- Licence to Operate Issued
- 2028: CNSC Public Hearing for Licence to Operate

Construction complete in 2028 with commercial operation in 2029

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DNNP Public Hearing

- CNSC issued **Notice of Public hearing** to consider OPG's application for a **Licence to Construct** one 300-megawatt small modular reactor at the Darlington site

- Hearing is scheduled for January 2024, and covers **applicability of the original EA to our selected reactor technology (GE Hitachi's BWRX-300)**
    - decision to issue a construction licence would be made at a future public hearing

- **Topic-specific written and/or oral interventions** by those with interest/knowledge on the hearing matter are invited by the CNSC, to help them reach their decision

- Your opportunity to **have your say**, share your knowledge, and provide the CNSC important information that will help to make their decision

- Requests to intervene must be filed through the online form by **November 20, 2023**

- To get you started, here's a **summary of the EIS Review…**

Environmental Assessment

- An **Environmental Impact Statement (EIS)** summarizing results of the EA was submitted by OPG in 2009.
- The EIS was based on a bounding framework which considered various reactor technologies, known as a **Plant Parameter Envelope (PPE)**.
- In May 2012, the Government of Canada accepted the Joint Review Panel (JRP) determination that the DNNP is not likely to result in significant adverse effects and approval of the DNNP proceeding based on the environmental assessment.
- In August 2012, the CNSC issued a Power Reactor Site Preparation Licence.

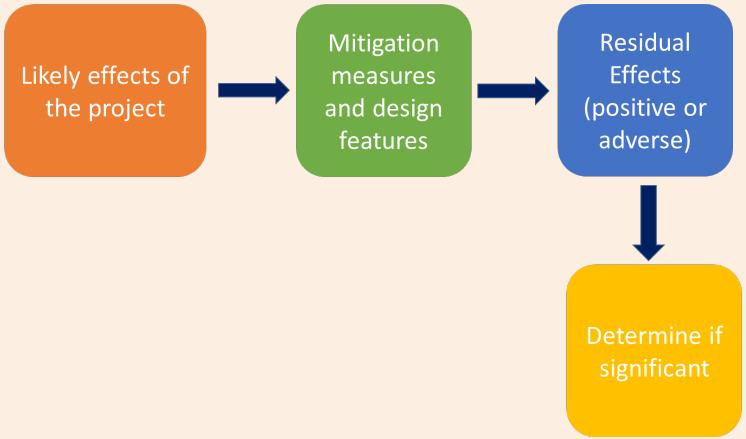
Environmental Assessment Commitments

- Commitments made by OPG during the EA process were consolidated in the DNNP Commitments Report.
- OPG selected the BWRX-300 SMR in Dec 2021 for deployment at the DNNP site. OPG had committed to complete the following after selection of the reactor technology:
  - An assessment of effects for the BWRX-300 parameters that were not within the PPE.
  - A review of the EIS for the deployment of the BWRX-300 to ensure that the results of the EIS remain valid.

Environmental Impact Statement Review

The EIS Review Report considers the environmental impact of deploying up to four BWRX-300 SMRs at Darlington site.

- The EIS was submitted 2009; EIS Review is a task to support the LTC application.



Plant Parameter Envelope

A PPE was developed for the project as a basis for the evaluation of the potential safety and environmental effects of multiple reactor designs being considered.

- A PPE is a listing of values that can be used in the EA and licence applications to assist in predicting the potential safety and environmental effects.
- The PPE concept is accepted by regulatory agencies in Canada and the U.S.A.
- PPE parameters encompass vendor information provided from Pressurized Water Reactors (PWRs) and CANDU Reactors.
- The 2009 EIS was based on 198 design parameters using the limiting value from either the ACR, EC6, EPR or AP-1000.
- The BWRX-300 was compared to the PPE used in the EIS. Eight BWRX-300 values were not within the original envelope.
- **The EIS review determined the conclusions of the EIS are not impacted and remain valid.**

EIS Review – Summary of Results

- BWRX-300 deployment has a smaller footprint – smaller in physical size and electrical power.
- Construction requires reduced workforce, on-site traffic, excavation of soil and rock.
- Opportunity to retain on-site ponds, wetlands, vegetation habitats, and shoreline habitats.
- BWRX-300 deployment utilizes once-through lake water cooling.
- BWRX-300 will be operated such that no radiological liquid effluent is released during normal operation of the facility.
- The BWRX-300 will require less marine and shoreline works.
- No permanent effect to groundwater flow - groundwater will be allowed to recharge to natural levels after construction.
- Environmental effects (from accidents, malfunctions and malevolent acts; effects of the environment on the Project: and cumulative effects) expected to be less than those assessed in the EIS.
- EA follow-up and monitoring program remains suitable for BWRX- 300 deployment.

Conclusions

The review has determined that the conclusion of the 2009 EIS remains valid for the deployment of the BWRX-300 at the DNNP site.

With the implementation of mitigation measures, the DNNP is not likely to cause significant residual adverse environmental effects.

The EA Follow-up Program will confirm these conclusions throughout the project phases.

Find us in the Community

- **Upcoming Community Events**
  - Newcastle Harvest Festival – Oct 7
  - Bowmanville Applefest – Oct 14
- **Public Information Sessions**
  - Oct 24 – Newcastle Town Hall
  - Oct TBC – Virtual
- **Pop-up Shops**
  - Oshawa Centre – Oct 3-22
  - Bowmanville Mall – Oct 22 – Nov 10
- **Now offering a Speaker Series**
- **Opg.com/newnuclear** to see where we'll be next!


Share your ideas
Provide your feedback
Ask your questions
ONTARIO POWER GENERATION
Where a brighter tomorrow begins.