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Oral Presentation

Written submission from GE Hitachi Nuclear Energy

Exposé oral

Mémoire de GE Hitachi Nuclear Energy

In the Matter of the

Darlington New Nuclear Project

Application to renew the nuclear power reactor site preparation licence for the Darlington New Nuclear Project

Commission Public Hearing

June 10, 2021

À l'égard de

Projet de nouvelle centrale nucléaire de Darlington

Demande de renouvellement du permis de préparation de l'emplacement d'une centrale nucléaire pour le projet de nouvelle centrale nucléaire de Darlington

Audience publique de la Commission

10 juin 2021

Canada

WRITTEN SUBMISSION BY:

HITACHI

BEFORE THE CANADIAN NUCLEAR SAFETY COMMISSION

Application by Ontario Power Generation Inc.
To Renew the Darlington New Nuclear Project

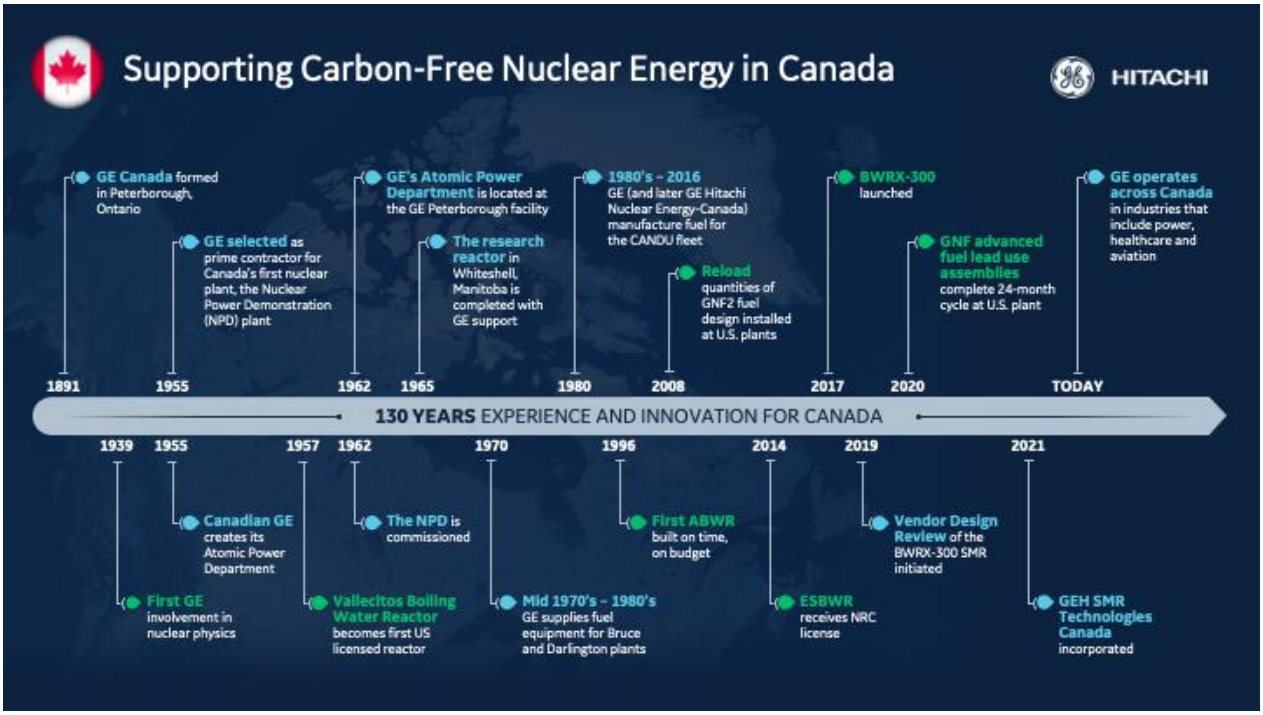
POWER REACTOR SITE PREPARATION LICENCE

Reference Commission Member Document (CMD)
CMD 21-H.4

CNSC Public Hearing
Scheduled for:
June 10, 2021

GE Hitachi Nuclear Energy (GEH) views with great interest the renewal of OPG's Power Reactor Site Preparation Licence (PRSL) in support of the Darlington New Nuclear Project (DNNP) under review by the Canadian Nuclear Safety Commission (CNSC). The licence for which OPG is applying to renew has undergone a rigorous regulatory approval process in 2012, involving extensive public and stakeholder input and a Joint Review Panel consisting of the CNSC and the Canadian Environmental Assessment Agency. As a result, OPG is currently the only site in Canada licensed to allow site preparation activities for new nuclear build with an approved Environmental Assessment (EA). The EA concluded that new nuclear generation would not cause significant environmental effects, given the mitigation and the commitments that were made by OPG. In this submission, GEH will present some perspectives on the importance of OPG's DNNP and the role of nuclear energy in the province of Ontario and in Canada, and considerations in support of OPG's PRSL renewal.

GEH is a world-leading provider of advanced reactors, fuel and nuclear services. As one of the first reactor Original Equipment Manufacturers (OEMs), GE was instrumental in engineering, designing, procuring, manufacturing and constructing more than 80 nuclear power plants globally. GE has been a committed local partner, operating in Canada since 1892, and has been a pioneer in Canada's commercial nuclear energy industry since the 1950s. GE was part of a consortium that developed Canada's first nuclear plant, the Nuclear Power Demonstration unit, in 1962. In the 1970s and 1980s, the company supplied fuel handling equipment for the Bruce and Darlington plants and, for several decades, manufactured fuel for the CANDU fleet.



With our extensive experience and expertise in reactor technology and fuel design, development and manufacturing, we hope to build on this legacy and be the selected partner of choice for OPG to deploy the very first grid-scale Small Modular Reactor (SMR) in Canada.

In support of OPG's renewed planning efforts for new nuclear power development, GEH's BWRX-300 design has undergone a due diligence review by OPG, and was one of the reactor technologies to have been down-selected to progress through to the final phase of OPG's technology selection[1]. GEH firmly believes that nuclear power generation provides safe, reliable baseload low-carbon electricity generation. Nuclear power is a key contributor to Ontario's low-emitting electricity grid, and is considered by many experts, including the International Atomic Energy Agency, to be critical to achieving net-zero carbon emissions by 2050. The Canadian federal government also considers nuclear to be essential to Canada's carbon emissions goals. We have designed for, fueled and serviced the nuclear energy industry for more than 60 years. We look forward to boldly innovating to bring the world's first grid-scale SMR to Canada, creating jobs and spurring economic development while positioning Ontario as an SMR hub and enabling Canada to be a leader in the deployment of SMR technology.

OPG's performance history of excellence in operation and project execution makes them an integral member and leader in the nuclear industry. Through sharing of its operating experience, leading industry efforts and by demonstrating commitment to innovation and collaboration, OPG has become an important contributor to the continued success of the Canadian nuclear industry. OPG's successful execution of the Darlington Unit 2 Refurbishment and its safe return to service is evidence of their robust management system, their commitment to safety and quality, and their healthy safety culture. Additionally, CNSC staff's assessments of compliance and performance of OPG's operating fleet of reactors, as indicated in CNSC's annual Regulatory Oversight Reports[2], have concluded that the safety and control measures implemented by OPG have been highly or sufficiently effective. As a result, OPG has consistently received a "Satisfactory" or "Fully Satisfactory" rating in all of the fourteen (14) Safety and Control Areas assessed by CNSC staff.

OPG is requesting to renew its PRSL "as is" with no changes in the scope of activities from its existing licence, which has been previously assessed and approved by the Commission, namely:

- Construct site access control measures
- Clear and grub vegetation, excavate and grade the site
- Install services and utilities
- Construct support buildings inside the future controlled access area
- Construct environmental monitoring and mitigation systems
- Construct flood protection and erosion control measures

In support of its application, OPG has updated its baseline environmental data in 2019 to confirm that the conclusion of its site evaluation for the lifecycle of the facility as required by Regulatory Document REGDOC-1.1.1, *Site Evaluation and Site Preparation for New Reactor Facilities* remains valid. This exercise included updating data for Valued Environmental Components associated with the site for:

- Climate, Meteorology and Air Quality
- Geology and Hydrogeology
- Hydrology, Surface water and Sediment Quality

[1] https://www.opg.com/innovating-for-tomorrow/small-modular-nuclear-reactors/media_release/opg-paving-the-way-for-small-modular-reactor-deployment/
[2] http://nuclearsafety.gc.ca/eng/resources/publications/reports/regulatory-oversight-reports/canadian-nuclear-power-generating-sites.cfm

- Aquatic Communities
- Radiation and Radioactivity
- Terrestrial communities

The updated environmental baseline data supported the conclusion that the DNNP site remains suitable for construction and operation of a new nuclear power plant. Additionally, OPG completed the following:

1. Review of the Original Application materials against REGDOC-1.1.1 requirements and guidance, and addressing of identified gaps.
2. Review of current codes, standards and practices referenced in the licensing basis and those associated with REGDOC-1.1.1.
3. Review of the OPG management system that governs site preparation activities.
4. Conducted Indigenous engagement for the PRSL Renewal as required by CNSC Regulatory Document REGDOC-3.2.2, *Indigenous Engagement.*
5. Conducted Public engagement CNSC Regulatory Document REGDOC-3.2.1, *Public Information and Disclosure.*

These activities and their findings are captured in their Licence Renewal Activity Reports (LRARs) which are publicly available on OPG.com. The findings documented in the LRARs are summarized in an Aggregate Assessment Report (also available on OPG.com), which provides the methodology and results of an overall assessment to demonstrate the validity of the existing licensing basis with the mitigating actions which have been added to the DNNP Commitments Report.

Although the PRSL scope of activities is technology neutral, OPG's continued assessment of reactor designs will ensure that the selected technology will be bound by the plant parameter envelope as well as the conclusions of the Environmental Impact Statement. Should OPG move forward with the construction of DNNP, they will need to apply for a Licence to Construct from the CNSC. The application for this licence will specify the reactor technology and will need to demonstrate that the selected technology would not fundamentally alter the conclusions of the Environmental Assessment.

In conclusion, based on the assessments and evaluations conducted by OPG, GEH believes that the DNNP site remains suitable for new nuclear generation and that OPG's site preparation licensed activities would not pose any unreasonable risk to the public, personnel or the environment. GEH is confident of OPG's ability to safely execute the site preparation licensed activities given their operating experience, their performance history and the expertise of their highly competent group of nuclear professionals.