Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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Written submission from BWX Technologies Inc.

In the Matter of the

Ontario Power Generation Inc.

Application for a licence to construct one BWRX-300 reactor at the Darlington New Nuclear Project Site (DNNP)

Commission Public Hearing
Part-2

January 2025

Mémoire de BWX Technologies Inc.

À l'égard d'

Ontario Power Generation Inc.

Demande visant à construire 1 réacteur BWRX-300 sur le site du projet de nouvelle centrale nucléaire de Darlington (PNCND)

Audience publique de la Commission
Partie-2

Janvier 2025

Canada

BWXT Canada Ltd.

October 28, 2024

Senior Tribunal Officer, Commission Registry
Canadian Nuclear Safety Commission
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P.O. Box 1046, Station B
Ottawa, Ontario
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Subject: CNSC to conduct a public hearing on Ontario Power Generation Inc.'s application for a licence to construct one BWRX-300 reactor for its Darlington New Nuclear Project – Ref. 2024-H-03

Dear President and Commission Members,

BWXT Canada Ltd. (BWXT) appreciates the opportunity to provide written feedback to the Canadian Nuclear Safety Commission (CNSC) on the application by Ontario Power Generation (OPG) to obtain a licence to construct one BWRX-300 reactor as part of the Darlington New Nuclear Project (DNNP). For the CNSC's background, BWXT is Canada's most comprehensive nuclear supply chain company, with over 60 years of expertise and experience in the designing, manufacturing, commissioning, and servicing nuclear power generation equipment.

As a supplier of more than 300 CANDU and pressurized water reactor steam generators worldwide - in addition to other major plant components and fuel - BWXT is on the front line of developing innovative solutions for a variety of plant systems, from the nuclear reactor itself to conventional systems, including steam generators, fuel channel components, pressurizers, primary piping, critical heat exchangers, and spent fuel storage and waste containers. Our core business is maintaining the supply of nuclear fuel and providing services, such as engineering, equipment inspection and repair, and parts for the nuclear power industry, as well as producing nuclear medicine for life science companies, radio pharmacies, hospitals, and researchers.

In the Province of Ontario, nuclear power is the backbone of the electricity system, representing fully one-third of installed capacity and satisfying more than 50 per cent of the energy needed to power Canada's largest economy. With a current site output of more than 3,500 megawatts (MW), the Darlington Nuclear Generating Station (NGS) is one of Ontario's most valuable pieces of infrastructure, supplying approximately 20 per cent of the province's electricity at full capacity reliably, affordably, and without producing greenhouse gas (GHG) emissions through the creation of its energy.

In December 2021, OPG selected GE Hitachi Nuclear Energy as their technology development partner to deploy BWRX-300 water-cooled, boiling water reactor technology on the Darlington NGS site. In July 2023, OPG announced that it proposes to develop four BWRX-300 reactors, at approximately 300 MW per unit, for a combined plant envelope of 1,200 MW, consistent with OPG's power reactor site preparation licence for DNNP which CNSC renewed in 2021. Ontario's Independent Electricity System Operator (IESO) recently updated forecasts indicating that annual demand for electricity in the province will increase by more than 50 terawatt hours (TWh), or approximately 35 per cent, by 2035. The development of new nuclear capacity is a central element of Ontario's plan to meet that growing demand for electricity without increasing greenhouse gas (GHG) emissions.

The suitability of the Darlington NGS site for incremental reactor development has been examined extensively and began even before OPG submitted its initial application for a licence to prepare site in 2006. Following five years of detailed review, the Joint Review Panel (JRP) for DNNP submitted its Environmental Assessment (EA) report to the Minister of the Environment in 2011. The EA concluded that DNNP is not likely to cause significant adverse environmental effects, provided the mitigation measures proposed, commitments made by OPG during the review, and the JRP's recommendations are implemented.

The 300 MW proposed for the one BWRX-300 reactor in scope of this application is well within the plant parameter envelope established in the approved EA. OPG's leadership in responsibly advancing the first deployment of BWRX-300 technology in Canada is factoring into power system reliability and decarbonization plans in other jurisdictions as well, including in the Province of Saskatchewan. Similarly, OPG and the Tennessee Valley Authority (TVA) entered into a Memorandum of Understanding (MOU) in 2022 allowing for coordinated efforts on the design, licensing, construction, and operation of the BWRX-300 technology in Canada and the United States.

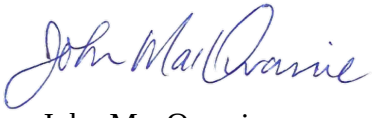
BWXT is confident that OPG's detailed evaluation, resulting in both the approval of the DNNP EA and CNSC's subsequent renewal of the power reactor site preparation licence has confirmed the appropriateness of the Darlington site for BWRX-300 reactor development, and that all associated activities will be undertaken without any negative impact to employees, contractors, the public, or the surrounding environment. BWXT has first-hand experience working closely with OPG over more than 50 years and can attest to their exceptional standards of nuclear safety culture, commitment to regulatory compliance, and demonstrated commitment to project excellence.

We would similarly submit based on our own extensive experience that CNSC's rigorous technical evaluation and oversight regimes are among the best anywhere when it comes to protecting the health, safety, and security of Canadians, as well as Canada's environment. BWXT believes OPG's proposed approach to DNNP is consistent with the approved EA, and CNSC's conclusions in evaluating OPG's application to renew the power reactor site preparation licence. This includes OPG's ability to meet the requirements of the *Nuclear Safety and Control Act* (NSCA), the *General Nuclear Safety and Control Regulations* (GNSCR), and other applicable regulations concerning the safe operation of nuclear facilities.

We would concur that OPG is qualified to carry out the activities that the proposed licence to construct would authorize, and that OPG can be relied upon to make adequate provision for the protection of the environment, the health and safety of Canadians, as well as the maintenance of national security and meeting Canada's international obligations. BWXT is confident that OPG possesses all necessary competencies to execute the activities being proposed in a manner consistent with the conditions prescribed in the EA, and others which CNSC may require as part of this licence.

OPG is a proven leader in the generation of safe, clean, reliable, and affordable electricity, and DNNP is a critical infrastructure project required to power the Province of Ontario. It is for these reasons, as well as DNNP's alignment with Canada's environmental commitments and targets, and the necessity for Ontario to bring online additional clean energy resources in a timely manner, that BWXT endorses OPG's application for a licence to construct a BWRX-300 reactor at the Darlington NGS site.

Sincerely,



John MacQuarrie
President