



Oral presentation

Written submission from Canadian Nuclear Association

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 8, 2024

Exposé oral

Mémoire de l'Association nucléaire canadienne

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

8 janvier 2024

October 29, 2024

Senior Tribunal Officer, Commission Registry
Canadian Nuclear Safety Commission 280
Slater St.
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Ottawa, Ontario K1P 5S9

Re: Canadian Nuclear Association Intervention regarding Ontario Power Generation's application for a licence to construct one BWRX-300 reactor for its Darlington New Nuclear Project

The Canadian Nuclear Association (CNA) appreciates the opportunity to intervene in support of Ontario Power Generation's (OPG) application for a licence to construct one BWRX-300 unit for its Darlington New Nuclear Project (DNNP). The CNA has approximately 100 members, representing over 89,000 Canadians employed directly or indirectly in exploring and mining, uranium, generating electricity, advancing nuclear medicine, and promoting Canada's worldwide leadership in science and technology innovation. Our members are proud of our safety and environmental record, our contribution to Canada's economy and our vital role in the fight against climate change.

Nuclear energy is a safe, reliable, non-emitting source of energy that not only helps Canada and indeed, the world meet its electricity needs, but it is also a critical element in the world's fight against climate change. It is increasingly acknowledged that without a significant increase in the use of nuclear energy the world cannot meet the Paris agreement targets.

Recent reports from Ontario's Independent Electricity System Operator have indicated that Ontario faces potential electricity shortfalls as demand rises due to population growth and increased electrification to reduce emissions. The government of Ontario has indicated that it views increased nuclear generation as a fundamental element of meeting that challenge. Zero-emissions nuclear power is the backbone of Ontario's clean electricity system and is a crucial part of Ontario's clean energy future.

Notwithstanding the benefits of nuclear power as outlined above, the safety of the public, workers and the environment remains OPG's (and indeed the entire nuclear industry's) top priority. To that end, the CNA believes it is important to note that OPG is recognized worldwide for exceptional performance in nuclear operations. OPG has a 50-year history of strong safety and operational performance at its nuclear generating stations. OPG's successful operational record is due to their well-trained, highly motivated and dedicated staff who take great pride in the successful operation of existing plants and are equally committed to the deployment of Canada's first small modular reactor (SMR). OPG is well positioned to lead in the development of a new nuclear technology.



In addition, to the successful operation of their existing nuclear power plants, OPG has demonstrated excellent project management success. With its well-established arrangements with qualified partners and vendors, OPG has safely and successfully refurbished Darlington Units 2 & 3 as well as managed other large hydro-electric and construction projects. This positive track record of project management demonstrates that OPG is capable of undertaking the construction of a new nuclear reactor.

The BWRX-300 is a new nuclear technology and will be the first small modular reactor built in Canada. OPG undertook an extensive and comprehensive technology review before it chose the BWRX-300. While it is a new design, the BWRX-300 is based on existing Boiling Water Reactors (BWR) and is in fact the 10th generation of BWR designs. Over 100 BWRs have been built and operated worldwide and the BWRX-300 incorporates lessons learned in design, construction, operations and maintenance. The simplified BWRX-300 design incorporates passive safety and optimizes safety, operability and maintainability.

The CNA would like to also highlight that, in addition to the technology reviews undertaken by OPG, CNSC staff have been developing a licensing basis for first-of-a-kind technologies (FOAK). FOAK technologies require extensive oversight throughout the detailed design and construction phases to confirm design and construction activities are completed safely and construction represents the safety case. To that end, CNSC staff are proposing a construction licence with conditions that include regulatory hold points. The use of hold points enables construction to progress while providing an opportunity to ensure conditions set in the licence have been satisfied at certain milestones.

Although the proposed licence activities do not include the use of nuclear substances and therefore activities covered by this licence are not expected to result in radiation doses to workers or the public, CNA believes it is important to note the radiation protection case once the facility is operational. To that end, the BWRX-300 is designed to ensure doses are kept far below regulatory limits and that As Low As Reasonably Achievable (ALARA) principles are incorporated into the design. Dose rates are well known for BWRs and some of the radiation sources in current BWRs are not found in the simplified BWRX-300 design, which will lead to less occupational dose during operations and maintenance.

With respect to conventional health and safety during the construction phase, OPG will apply its existing rigorous and effective safety management system to ensure all applicable health and safety standards are adhered to. OPG will maintain overall responsibility for safety under the proposed licence and will work with the constructor to manage the health and safety of workers in accordance with the DNNP health and safety plan. OPG will perform field inspections during the construction contract to confirm compliance.

OPG has a mature and robust environmental monitoring plan in place for the Darlington Nuclear site that ensures effective oversight and controls to minimize environmental impact, and construction activities will fall under this plan. OPG has a well-established Environmental Management System (EMS) which is certified to ISO 14001 standards and implements OPG's Environmental Policy. The EMS uses a risk-based approach to identify and assess potential areas of concern and ensures that activities are carried out in a manner that prevents or mitigates adverse environmental effects.

The CNA and its members are strongly committed to reconciliation with Canada's First Nations and OPG is building mutually beneficial working relationships with Indigenous communities near its current and future operations including DNNP. OPG is committed to engaging with Indigenous Nations Rights holders

and interested Indigenous Nations and Communities to share information and to understand concerns and potential impacts on Aboriginal and Treaty Rights. OPG's submission lists the numerous engagement activities that have taken place in the last 15 months.

OPG is committed to providing capacity to support ongoing engagement with Indigenous Nations and Communities regarding nuclear operations and projects including DNNP. OPG has entered into relationship framework agreements with Curve Lake First Nation, Hiawatha First Nation and the Mississaugas of Scugog Island First Nation, and is currently working on finalizing an agreement with Alderville First Nation. These relationship framework agreements provide capacity to support regular meetings, information sharing and ongoing dialogue.

OPG is committed to increasing Indigenous employment opportunities through its Indigenous Opportunities Network program and it is expected that continued growth in the program will occur as a result of the DNNP. In addition, in 2021 OPG launched a Reconciliation Action Plan which outlined commitments with clear actions and timelines in several areas including procurement. OPG has expanded opportunities for Indigenous businesses to participate in procurement including nuclear. Between January 2023 and April 2024, OPG has spent \$158m on Indigenous procurement towards its target of \$1B economic impact for Indigenous communities and business in the 2021-2031 period.

OPG is also committed to open and transparent communication with stakeholders, the public and surrounding communities. OPG's stakeholder relations and public information program is widely recognized as an industry leading standard and OPG benchmarks its program to ensure continuous improvement. OPG has undertaken an active outreach program to ensure that stakeholders and the public are kept abreast of all developments of the DNNP. OPG aggressively promoted information of this licence application to ensure widespread public awareness. Some of the numerous outreach activities include a fully staffed information centre, public website, station tours and site visits, active social media platforms, briefings, public presentations, newsletters and project information booths.

The CNA believes that the combination of OPG's operating and project management expertise, its strong health, safety and environmental programs and CNSC's comprehensive regulatory oversight not only provides a strong basis to proceed with the project but should also serve to reassure Canadians that this new nuclear project will be built in a safe manner that protects workers, the public and the environment. Therefore, the CNA is pleased to support CNSC staff's recommendation that the Commission issue a licence to construct.

Thank you for the opportunity to offer our views on this vital project.

Sincerely,



Jill Baker
Vice President, Regulatory Affairs, Policy and Corporate Events
Canadian Nuclear Association