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Written submission from Aecon Group INC.

Mémoire de Aecon Group INC.

In the Matter of the

À l'égard d'

Ontario Power Generation Inc.

Ontario Power Generation Inc.

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

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

Commission Public Hearing Part-2

Audience publique de la Commission Partie-2

January 8, 2024

8 janvier 2024

Canada

November 4, 2024

Senior Tribunal Officer, Commission Registry
Canadian Nuclear Safety Commission
280 Slater St. PO Box 1046 Stn B
Ottawa, ON K1P 5S9

Submitted Electronically

Ref. 2024-H-03: *Intervention in support of Ontario Power Generation's application for a licence to construct a BWRX-300 reactor for its Darlington New Nuclear Project*

Please accept this as Aecon's written submission expressing our support for the application by Ontario Power Generation (OPG) to obtain a licence to construct a BWRX-300 Small Modular Reactor (SMR) for its Darlington New Nuclear Project (DNNP).

By way of background, as an experienced construction and infrastructure development company with operations across North America and over 11,000 employees, Aecon is the largest nuclear constructor in Canada. Aecon Nuclear, which employs approximately 3,500 skilled workers and staff, provides a full spectrum of Engineering, Procurement and Construction services and continues to play a critical role in the ongoing success of the two largest nuclear refurbishment projects in Ontario, and delivering North America's first grid-scale SMR through OPG's DNNP. Aecon is proud to be at the forefront of building the next generation of nuclear infrastructure harnessing its extensive capabilities in the Nuclear sector, combined with the strength of its diverse Civil, Industrial and Utilities expertise.

As the CNSC is aware, in 2012, following the acceptance of a thorough Environmental Assessment (EA) which included extensive public involvement, Indigenous consultation and engagement with several other stakeholders – the CNSC granted OPG a licence to allow site preparation activities to support future nuclear generation in Ontario. The EA concluded that the DNNP site is suitable for a new nuclear plant. Since that time, OPG has stringently maintained the PRSL and progressed long-lead regulatory commitments related to the licence and its EA, the submission of annual reports to the CNSC, and mid-term licence reports.

OPG reviewed the design of the technology against the Plant Parameter Envelope (PPE) and concluded that the BWRX-300 was well within the established PPE for the majority of the individual parameters. For the eight parameters where the BWRX-300 was determined to be outside the PPE, further assessment based on the updated parameters showed that the Environment Impact Statement (EIS) conclusion remained valid. As outlined in OPG's Aggregate Assessment Report, findings of the LRARs confirmed that its existing licencing basis remains valid for the next licencing period, and OPG conducted a clause-by-clause review of the Public Information and Disclosure, and Indigenous Engagement regulations to ensure compliance.

As part of its application for a licence to construct, and in meeting its ongoing commitments, OPG also undertook a comprehensive review of the EIS to assess the deployment of the proposed technology to demonstrate that its environmental effects fit within the existing DNNP EA. In January 2024, OPG participated in a three-day CNSC public hearing focused on the applicability of the original EA to the BWRX-300, and in April 2024, the CNSC announced the Commission agreed with OPG's conclusion that the existing EA for the DNNP is applicable to this technology. The CNSC found that the BWRX-300 reactor design is not fundamentally different from the reactor technologies assessed in the EA, the EA is robust and complete, and OPG has a monitoring and follow-up program in place that is robust and adaptable to the technology.

Furthermore, Aecon would like to highlight its strong endorsement and support of OPG's application:

- Safety was a critical consideration in OPG's technology selection of the BWRX-300, which meets or exceeds regulatory requirements. This design has leveraged lessons learned and operating experience from the previous nine generations of Boiling Water Reactors (BWRs) deployed and operating around the world. GEH's BWR technology safely operates in many other operating nuclear facilities around the world – just as the fuel type similarly has an abundance of operating experience.
- OPG's history of safe operations and project management success including the Darlington Refurbishment project, which is also being executed with Aecon as the prime constructor, demonstrates its readiness to undertake the construction of a BWRX-300 unit at the Darlington Nuclear site.
- OPG and its experienced partners like Aecon are prepared to carry out the activities outlined in the LTC application, and will ensure the protection of the environment, the health and safety of employees and public, and the safety and security of the site while the construction activities are undertaken.

- SMRs and the BWRX-300 support decarbonization using technology that is safe, easy to operate, and efficient to construct and maintain. One BWRX-300 has an approximate electrical output of 300 megawatts and represents an important contribution towards the growth of Ontario's low-carbon energy supply.
- OPG understands the history, impact and responsibility of reconciliation with Indigenous Peoples and continues to lead and take meaningful action to collaboratively work with and provide lasting benefits to Indigenous communities, including maximizing procurement with established Indigenous businesses to create partnerships that advance economic prosperity.
- The DNNP directly aligns with the vision of Ontario's proposed *Affordable Energy Act*, which if passed, would prioritize affordable and clean nuclear energy – helping families save money and meeting the demand driven by Ontario's rapid increase in population, new manufacturing facilities, advanced technologies like artificial intelligence (AI) data centres, the electrification of industry, and the charging energy required for electric vehicles.
- According to Ontario's Independent Electricity System Operator, the province's demand for electricity is forecast to increase by 75 per cent by 2050 – the equivalent of adding four and a half cities the size of Toronto to the grid. Prioritizing nuclear energy as the province's grid expands will help meet this significant demand.
- The nuclear industry forms the backbone of Ontario's energy mix. Nuclear power provides safe, reliable, clean, and low-cost electricity, which is essential to Ontario and Canada's balanced energy mix.
- Nuclear power is vital to ensuring Canada meets its commitment to achieve net-zero emissions by 2050 and OPG has concurrently committed to achieve net-zero carbon by 2040.

As outlined in OPG's LTC application, Aecon is confident that the DNNP site is the right site for the construction of a new BWRX-300 SMR. A managed system is in place to effectively conduct the proposed licensed activities with safety as the top priority and consideration. Project staff are qualified and competent to carry on the proposed licensed activities and nuclear safety will be assured – protecting the public, personnel and the environment while continuing to engage and communicate with local and Indigenous communities during this upcoming stage of the project.

Driven by its unwavering focus on plant, people, and community safety, OPG's safety record is first-rate and among the highest in the North American nuclear industry. OPG's safety culture sets the highest standards for its supply chain, and partners such as Aecon are steadfast in their mutual commitment to putting safety first and it is evident that OPG is particularly dedicated to environmental protection and stakeholder engagement – two essential pillars for any sustainable infrastructure project.

Aecon believes OPG has demonstrated both operational leadership, regulatory compliance and social responsibility throughout this process, and as our valued client, we are certain this will continue with both the application process and under the approval granted through the licence.

Considering the foregoing, as well as OPG's proven track record of operating safely and planning, executing and delivering complex nuclear work, on-schedule and on-budget, Aecon firmly supports OPG's application for a licence to construct a BWRX-300 reactor for its Darlington New Nuclear Project.

Sincerely,

Aaron Johnson
Senior Vice President, Nuclear
Aecon Group Inc.