



**Oral presentation**

**Exposé oral**

**Written submission from  
CANDU Owners Group Inc.**

**Mémoire du CANDU Owners  
Group Inc.**

In the Matter of the

À l'égard d'

**Ontario Power Generation Inc.**

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**Ontario Power Generation Inc.**

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

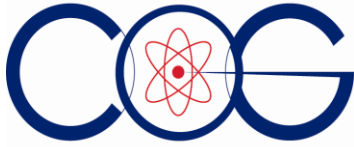
Demande visant à construire 1 réacteur  
BWRX-300 sur le site du projet de nouvelle  
centrale nucléaire de Darlington (PNCND)

**Commission Public Hearing  
Part-2**

**Audience publique de la Commission  
Partie-2**

**January 8, 2024**

**8 janvier 2024**



October 18, 2024

Canadian Nuclear Safety Commission Secretariat  
c/o Ms. Julie Bouchard  
Canadian Nuclear Safety Commission  
280 Slater Street, P.O. Box 1046, Ottawa, OM K1P 5S9  
Email: [cns.interventions.ccsn@canada.ca](mailto:cns.interventions.ccsn@canada.ca)

**Subject: Ontario Power Generation's application for a licence to construct one BWRX-300 reactor for its Darlington New Nuclear Project.**

Dear Ms. Bouchard,

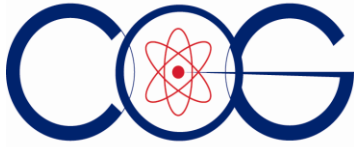
This submission supports Ontario Power Generation's application for a licence to construct one BWRX-300 reactor for its Darlington New Nuclear Project (DNNP).

The CANDU Owners Group (COG) is a not-for-profit organization with membership from all owners of CANDU reactors both in Canada and internationally. COG's vision is excellence through collaboration for CANDU and advanced nuclear technologies. Together with its members, suppliers, research, and partner organizations, COG is continuously innovating nuclear plant equipment and processes to ensure the highest standard of safety, efficiency, and environmental performance.

To fulfill these objectives, COG is organized around the following five operational program areas:

- Nuclear Safety and Environmental Affairs
- Information Exchange
- Learning and Development
- Research and Development
- Joint Projects

Through the Nuclear Safety and Environmental Affairs program, COG promotes the adoption of common strategies and plans for the resolution of issues related to nuclear safety, regulatory affairs and the environment. The Information Exchange program leverages experience and best practices across the industry and among CANDU utilities so that each member and supplier participant can make the most of shared operating experience and best practices. COG also provides key leadership and skills training across the sector covering topics such as Nuclear Leadership, Safety Culture, Strategic Thinking and Regulatory Affairs.



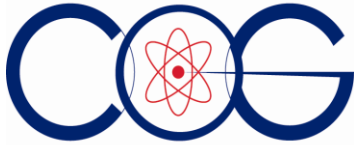
COG members spend approximately \$75 million a year in R&D and Joint Projects to strengthen the safety, reliability, environmental, and cost performance of the CANDU nuclear plants. Our members invest in R&D in proportion to the number of operating units, which makes OPG one of the largest current contributors to COG's R&D program. This, in turn, benefits the entire CANDU community, both domestic and international.

The work facilitated by COG on behalf of its members relies on capable, knowledgeable, suppliers with deep expertise, human capacity, and facilities to undertake ground-breaking nuclear science. This research, and the associated engineering activity, is undertaken mostly in Canada by organizations such as Canadian Nuclear Laboratories, Kinectrics, AtkinsRéalis, and Stern Laboratories.

COG and OPG (formerly Ontario Hydro) have had a strong collaboration for four decades in various technical areas. For instance, the R&D work in Fuel Channels, Chemistry, Materials, and Components, Safety and Licensing, Health, Safety, and Environment, and Industry Standard Toolset has been crucial for the safe, prolonged, and reliable operation of its nuclear facilities. At the request of OPG and other COG members, joint projects are started to develop a unique solution for addressing a common issue. OPG staff actively participate in various COG-sponsored workshops, peer groups, and information exchange forums to ensure alignment with other nuclear utilities, learn best practices, and benchmark against the best-performing NPPs in the industry.

In 2018, COG initiated the Small Modular Reactor Technology Forum (SMRTF) to address key issues and establish technical positions in support of developing harmonized policies. This forum also focuses on concerns related to the regulatory framework, fuel cycle, siting, waste management and supply chain. OPG staff are actively involved in the SMRTF and are utilizing COG's collaboration framework, which has facilitated the safe and reliable operation of CANDU plants for the past four decades, to ensure the safe, responsible, and successful deployment of the first BWRX-300 small modular reactor. OPG is applying over 40 years of operating knowledge, best practices, research and innovation to their SMR strategy to ensure that nuclear safety is the highest priority in deployment.

GE Hitachi, the manufacturer of the BWRX-300 reactor, has been designing, manufacturing, licensing, fueling, and building supply chains for boiling water reactors for over 60 years. Currently, there are 40 licensed boiling water reactors from GE Hitachi operating safely in five countries. The BWRX-300 reactor is a 10<sup>th</sup>-generation design incorporating improvements, simplifications, and innovations based on the extensive operational experience of the previous nine generations. GE Hitachi is also a COG Supplier Participant with a strong commitment to safety, the use of best practices, and continuous improvement.



COG manages the CANDU Owners' membership in the Electric Power Research Institute (EPRI) and further participates in the Industry Group Coordination meetings with all Owners' Groups including the BWR Owners Group. Through these collaborations, COG and its members have access to key innovation and research supporting the BWRX-300 design and operations.

OPG has a 50-year history of strong safety and exceptional operational performance at its two nuclear generating stations. The company also has a history of excellence in project management. With the expertise and commitment of qualified partners and vendors, OPG has demonstrated world-class project performance with the successful and safe refurbishment of Darlington NGS and the completion of numerous hydroelectric projects. These examples demonstrate OPG's readiness and capability to undertake the construction of a BWRX-300 reactor at the DNNP site.

The development of new nuclear projects, such as OPG's DNNP, will make a significant contribution to Ontario's sustainability and prosperity through:

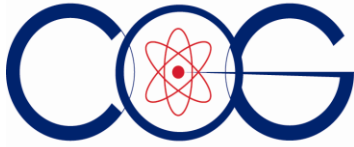
- Producing additional clean electricity over its lifetime to combat climate change and meet Ontario's net-zero emissions by 2050,
- Generating safe and reliable electricity using the next generation of reactors designed under the safety-by-design premise,
- Creating employment opportunities and the economic benefits, and
- Providing continued opportunities for innovation and career development of the next generation of nuclear workers.

Numerous highly paid technical jobs directly related to the operation of nuclear plants were created in Ontario. Even more jobs were created to support the supply chain needed to build and maintain the reactors, as well as for ongoing research and development to continuously improve the plants. These new jobs brought prosperity to the region where the plants were located. A similar beneficial effect is expected to follow the construction and operation of DNNP.

COG supports OPG's application for a 10-year Power Reactor Construction License to build a Class 1A nuclear facility at the DNNP site. This will allow for the construction of one BWRX-300 power block, as well as the support structures for up to four BWRX-300 reactors, the inspection and testing of equipment, and the commissioning of systems.

In summary, the dedication of COG members, vendors, and supplier participants creates a crucial network for sharing information, conducting research and development, and contributing to the success of project management, and human and plant performance. OPG plays a leading role in these endeavors. COG and its members have absolute confidence that OPG will continue to prioritize the protection of workers, the public, and the environment during the construction phase of the first BWRX-300 reactor.

CANDU Owners Group Inc.



*"Excellence Through Collaboration"*

I look forward to elaborating on aspects of this letter during my oral presentation in January.

Sincerely,

A handwritten signature in grey ink that reads 'Rachna Clavero'. The signature is fluid and cursive, with a long horizontal stroke extending from the end of the name.

Rachna Clavero  
President and CEO  
CANDU Owners Group