



## **Oral presentation**

### **Written submission from the Darlington Nuclear Community Advisory Council**

In the Matter of the

**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)

**Commission Public Hearing  
Part-2**

**January 8, 2024**

## **Exposé oral**

### **Mémoire du Darlington Nuclear Community Advisory Council**

À l'égard d'

**Ontario Power Generation Inc.**

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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**

**DARLINGTON NUCLEAR GENERATING STATION**  
**Community Advisory Council**

November 4, 2024

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

**Notice of Participation at the CNSC Public Hearing 2024-H-03 and Written Submission in support of the Darlington New Nuclear Project's Application for a Power Reactor Construction License.**

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The Darlington Nuclear Community Advisory Council (CAC) wishes to appear at the January 8, 2025 CNSC Public Hearing 2024-H-03 and provide an associated written submission (this letter) regarding the Darlington New Nuclear Project's (DNNP) Application for a Power Reactor Construction License. Our submission follows two earlier Canadian Nuclear Safety Commission (CNSC) submissions. First, our June 2021 submission pertained to the Ontario Power Generation (OPG) application to renew its Site Preparation License for the Darlington New Nuclear Project. And second, our November 2023 CNSC submission concerned the DNNP Hearing on Applicability of the Darlington New Nuclear Project Environmental Assessment and Plant Parameter Envelope to the Selected Reactor Technology.

Ontario Power Generation has provided our Council and the community with regular updates on the Darlington New Nuclear Project. We are aware that OPG currently holds a Nuclear Power Reactor Site Preparation Licence (PRSL) for the Darlington New Nuclear Project. And, OPG is applying for a Canadian Nuclear Safety Commission Licence to Construct (LTC) the first of up to four nuclear power reactors on the Darlington New Nuclear site.

The CAC supports the CNSC approving OPG's request for a Licence to Construct a General Electric Hitachi (GEH) BWRX-300 reactor. Our support is based on our knowledge of the Darlington Nuclear Generating Station (DNGS) and our review of OPG's written submission, *"Darlington New Nuclear Project (DNNP) Application for a Power Reactor Construction Licence"*, June 28, 2024 Commission Member Document (CMD). And, our review of the licence application entitled, *"Darlington New Nuclear*

*Project Application for a Licence to Construct a Reactor Facility”, October 2022 (Licence Application).<sup>1</sup>*

The Council (formerly known as the Darlington Nuclear Site Planning Committee) was formed around 1992. Its membership represents a large number of sectors in the community, including community associations, municipal government, health, the environment, education, youth, business and members at large. All members live or work in an area from Clarington to Oshawa and all serve on a voluntary basis without compensation. There are currently 12 members serving on the CAC. We communicate and interact with members of our community on a range of OPG related matters, for example, the mounding of soil on site. Darlington CAC members also communicate to our broader communities, such as, across the campuses of Durham College.

The Council advises Darlington Nuclear on subjects of interest and concern to the community related to operations at the site. We meet about five times a year and at each meeting we poll members on any issues of concern in the wider community. Information is shared among members throughout the year. Primary areas of discussion include the environment, public health and safety, emergency preparedness and the economy. All meetings are open to the public and our minutes are available on OPG’s website.

Recently, OPG has provided the Council with a comprehensive update about the Darlington New Nuclear Project (DNNP) Application for a Power Reactor Construction Licence through a presentation to the Darlington CAC. Also, several members of the CAC attended a briefing at Darlington on September 10 and attended an on-line Power Point presentation on September 25. Thus, as lay people, we are informed and up to date on the Proposed SMR (Small Modular Reactor) construction licence application.

### **Intervention**

We are aware that OPG’s Licence to Construct application is for one BWRX-300 reactor. The BWRX-300 reactor will have an approximate electrical output of 300 megawatts, enough to power 300,000 homes. As the approximately 697,000 residents of our Region occupy 243,000 homes, the amount of clean electricity produced by this energy source is noteworthy.<sup>2</sup>

The work to be completed under the requested Licence to Construct involves: a completion of activities under the existing site preparation licence; construction of one

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<sup>1</sup> Dave Hardy as Chair/Facilitator of the Darlington Community Advisory Council was the principal reviewer.

<sup>2</sup> Census Profile, 2021 Census of Population, Profile table, Durham Region

power block including the structures, systems and components associated with the reactor building, control building, turbine building, waste building and auxiliaries. We also understand that the application involves the construction of structures for up to four BWRX-300 units. There will be inspection of and testing of equipment and the commissioning of systems prior to loading fuel in the reactor. As stated in the Licence Application we are aware that the application is not requesting permission to possess, store, or use nuclear fuel which will be addressed as a part of future licencing activities (Licence Application, *Page 24*).

The following are matters that are notable for Darlington CAC members.

CAC members are aware of land uses within the vicinity of the DNGS and receive occasional updates. We note that in the Licence Application that *“OPG remains active in monitoring land use within 10 km of the DN site, including the review of planning applications. The focus of [OPG] monitoring is to determine whether there are any proposed land uses that would be of concern from the perspective of sensitive land uses such as day care, hospital, or retirement home locating within the vicinity of the DN site” (Page 55)*. OPG concludes that *“...overall, there have been no substantive changes to the land use environment since the 2009 land use effects assessment was completed” (Page 55)*.

OPG cites a completed a DNNP Site Evaluation<sup>3</sup> that has built on a previous evaluation conducted for the DNNP site preparation licence<sup>4</sup>. It concluded that the DNNP site remains a suitable location for the construction and operation of a new NGS and will not create an unreasonable risk to the public, personnel or environment (*Page 48*).

Our interactions with personnel of the Darlington Nuclear Generating Station over many years have confirmed, as stated in CMD 24-H3.1 *“Safety Culture” (Page 55)*, that OPG fosters a healthy nuclear safety and security culture among all employees to ensure the protection of workers, the public and the environment.

Safety is discussed at every Darlington CAC meeting. We note that the safety analysis has the objective of ensuring that the plant will comply with three complementary safety objectives being: radiation protection, technical safety and environmental protection (*Page 63*). Additionally, we note the adoption of defence-in-depth for the BWRX-300 reactor. The CMD presents five defence-in-depth lines, anticipates initiating events, completes a safety analysis for various events and completed a hazard analysis (*Pages 65 to 71*).

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<sup>3</sup> OPG Document, DNNP Site Evaluation Update Summary Report, October 2022, NK054-REP-01210-00142

<sup>4</sup> OPG Letter, D. Townsend to M. Leblanc, Application for Renewal of OPG’s Darlington New Nuclear Project (DNNP) Nuclear Power Reactor Site Preparation Licence (PRSL), June 2020, NK054-CORR-00531-10533.

The proposed license activities regarding the DNNP LTC Application do not include the receipt or handling of used fuel (*Page 111*). However, we note that future long-term radioactive waste management will be similar to the processes successfully used at the existing Pickering and Darlington Nuclear Generation Stations. (*Page 103*). OPG states that the NWMO Deep Geologic Repository can accommodate the long-term storage of BWRX-300 spent fuel representing a small increase in volume. And, a transportation plan and planning framework has been in place since 2021. (*Page 104*)

The Licence Application (*Page 237*) states and we concur that OPG has an established and effective environmental protection program for the Darlington site. CAC members receive annual updates on matters monitored include the atmospheric environment, surface water environment, aquatic environment, terrestrial environment, geological and hydrogeological environment, and health of human and non-human biota (*Page 238*). It is important to the Darlington CAC that this new nuclear facility will contribute to Ontario's low-carbon energy supply.

Annually, and as recently as September 24th, OPG provided the CAC with Darlington Nuclear Groundwater Monitoring Program (GMP) and Environmental Monitoring Program (EMP) results. The data includes monitoring results pertaining to lands to be used for the Small Modular Reactors.

As members of the host community, we are pleased that OPG continues to monitor potential off-site effects and achieve health and safety objectives. We are informed that the BWRX-300 design will minimize its environmental impact by maintaining a relatively small overall terrestrial and marine footprint (*Page 36*). We are aware that the Reactor Closed Cooling Water System (RCCWS) and Turbine Closed Cooling Water System (TCCWS) will continuously circulate cooling water from Lake Ontario. The water passes through various auxiliary equipment heat exchangers and rejects heated water to the Plant Service Water System and back to Lake Ontario (*Page 33*).

The Darlington New Nuclear Project Application for a Power Reactor Construction Licence lists matters of regulatory interest including the environmental assessment, public information and disclosure program and Indigenous Engagement (*Pages 114 to 127*). OPG has been transparent and forthcoming with information and we can confirm as stated on *Page 117* that the Darlington CAC was provided regular updates. As has occurred in the past, Darlington CAC members expect to be kept informed by OPG throughout the construction process.

Emergency management preparedness is important to Darlington CAC members. For example, CAC members are invited to attend regular emergency exercise drills as observers and we would expect this to continue for the future BWRX-300 reactor(s). We are provided an annual DNNP Nuclear Emergency Preparedness Plan update addressing the results of past emergency exercises and future emergency planning and drills specific to the concepts, roles and resources required to implement and maintain emergency response on the DNGS site. We expect these updates to continue pertaining

to the future DNNP as cited in the Licence Application, (*Page 247*) Periodically we are also provided updates specific to the Provincial Nuclear Emergency Response Plan (PNERP).

This submission has been reviewed independently of OPG and approved by CAC members.

## Conclusion

The Darlington Community Advisory Council supports OPG's Licence to Construct Application. OPG has shown readiness to undertake the construction, they have a strong record in safeguarding the environment, the health and safety of employees and the public and ability to provide a safe and secure site while construction activities are undertaken.

Yours sincerely,



Dave Hardy, BA (Hons), MES, R.P.P., F.C.I.P.  
Facilitator  
Darlington Nuclear Community Advisory Council

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Enclosures:

- CAC Terms of Reference
- List of CAC members with affiliations

cc. to:

- Darlington Nuclear Generating Station (DNCS)
- Pickering Nuclear Generating Station (PNGS)
- PNGS Community Advisory Council
- Durham Nuclear Health Committee

MPs and MPPs:

- Ajax
- Pickering
- Durham
- Markham-Stouffville

- Municipality of Clarington
- City of Oshawa
- Region of Durham
- City of Pickering
- Town of Ajax
- City of Toronto

- Northumberland and Peterborough South
- Oshawa
- Pickering-Uxbridge
- Whitby
- Scarborough-Rouge Park
- Scarborough-Guildwood