



CMD 25-H2.19

Date: 2025-05-05

**Written Submission from  
Gail Wylie**

**Mémoire de  
Gail Wylie**

In the matter of the

À l'égard d'

**Ontario Power Generation Inc.**

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Application to renew power reactor  
operating licence for the Darlington  
Nuclear Generating Station

**Ontario Power Generation Inc.**

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Demande concernant le renouvellement  
du permis d'exploitation d'un réacteur de  
puissance pour la centrale nucléaire de  
Darlington

**Commission Public Hearing  
Part-2**

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

June 24-26, 2025

24-26 juin 2025

## Submission to CNSC

Date: May 5, 2025

From: Gail Wylie

Re: CMD(s) 25-H2

### Darlington Nuclear Generating Station Licence Renewal

#### **Submission request**

This submission is to request that the CNSC reject the Application from OPG for a 30- year licence for Darlington Nuclear Station and replace it with a licence duration of no longer than the current 10-year licence.

#### **Background:**

I am submitting this request as an Ontario resident and ratepayer since June 2023, and as a veteran Intervenor at hearings for the 2022 NB Power application for a 25-year license for operation of the Point Lepreau Nuclear Generating Station in New Brunswick. Myself and CELA lawyer, Kerrie Blaise, represented the *Coalition for Responsible Energy Development in New Brunswick*.

#### **Issues Addressed**

This submission includes two types of concern, i.e., overarching concerns re long duration licensing and secondly, specific concerns about safety provisions related to the Ingestion Planning Zone.

#### **Over-arching Issues re Long Duration Licensing**

##### **Intent of Granting a Licence Duration**

The CNSC staff's 'Overall recommendations', page 7, support the licence request by stating: "Accept OPG's proposed licence length of 30 years". Only one "notable" new condition is applied, i.e., "OPG to conduct ongoing Indigenous engagement activities."

The entire lifetime of the station to date, under a series of much shorter licences starting between 1990 and 1993, is approximately 30 years. As such, it is not clear how the criteria for CNSC licensing reviews would have changed so drastically, that a single licence review could suffice for another 30 years. Is the international trend to longer licensing so persuasive, even though it represents licence approvals for different nuclear technologies, and different

standards, under different political regimes? This begs the fundamental question: ‘What is the intent and meaning of the CNSC’s licencing review process at this point in time?’

The fact that all four reactors will have undergone major refurbishments, coming back on line between 2023 and 2026, would seem to warrant a shorter initial licence to review the state of the reactor after operating with significant replacement parts. Would this not be a more prudent approach to ensuring the facility’s safety and reliability in the public interest?

The ability of the CSNC’s technical staff to accurately project longer periods of safe and reliable operation, has been called into question following the CNSC staff’s 2022 recommendation, that the Pt Lepreau Nuclear Generating Station be given the requested 25- year licence. While the facility was granted only a 10- year licence by the CNSC panel, even that proved optimistic, as it has been followed by a series of various problems, causing increasingly long outages. The outages began with a forty-day unplanned outage in peak winter conditions, beginning December 14, 2022 and ending in 2023. Even more remarkably, a planned shut down of 100 days beginning in April 2024, then extended to 248 days! The most recent shutdown was on March 17, 2025 when a cooling fan malfunction resulted in an unplanned shutdown until March 24<sup>th</sup> 2025.

It is not beyond an observer’s imagination to wonder if these long-duration requests are made as a ploy to ask for an unprecedented licence period, in hopes of receiving a licence length shorter than requested, but as a compromise, longer than the previous norm (a 10 year current licence in the case of Darlington station). In this scenario, the CNSC technical staff concurrence with the requested 30- year licence, plays the role of ‘good cop’. A shorter, but still generous licence might then be granted by the CNSC panel in the role of ‘tough cop’, leaving the public with the impression of a sage, and suitably cautious decision by the safety regulator!

#### Implications of 30-Year licence for Long Term Planning of Ontario’s Energy Options

The larger issue surrounding a 30-year licence, is how this locks-in power generation options for Ontarians, while countries around the globe are rapidly pursuing clean, affordable, renewable firm power, from wind, solar, hydro and geothermal sources combined with storage. Given the narrow focus of the CNSC as a ‘nuclear safety regulator’, the potential support of a 30-year licence appears to preclude any planning to phase out nuclear power and develop a critical-path-plan for developing renewable power to replace it.

The very high level of complexity of nuclear-powered electricity production is demonstrably clear from the 1249-page submission by CNSC staff, responding to OPG's Darlington licence Application. This complexity is multiplied by the addition of the many processes and regulations involved in: the mining, refinement and delivery of the fuel supply; the provision of expensive 'heavy water' coolant; the approval for 'safe' tritium releases during operations; and the management and 'disposal' of the short, medium and long-lived radioactive waste from both the spent fuel and decommissioned facilities.

All of this complexity is wrapped around with the risks related to short or long-term exposure of the populace to radio active materials, at each stage of those processes. Exposure is a serious concern, given the known health effects that can take as long as 20 years to emerge. This complexity, in turn, continues to drive up the already high costs of nuclear power, while the costs of renewable-power-with-storage are declining under rapid innovation cycles emerging in solar, wind, storage and recycling technologies.

In short, a 30-year licence for Darlington station, which is not accompanied by a plan for possible early phase out of nuclear power and decommissioning of the facilities, is the 'wrong project'. It defies logic!

## **Issues re establishing and implementing an Ingestion Planning Zone for radiological events**

### Establishing Zone Size and Purpose

(Reference: "Written Sub from Ontario Power Generation Inc. for Application to renew power reactor operating licence for the Darlington Nuclear Generating Station, Commission Public Hearing Part -1"

The Ingestion Planning Zone (IPZ) is only briefly referenced in OPG's 224 page Licence Application. On page 135, where the focus is on potassium iodide pill distribution in the 10 km Detailed Planning Zone (DPZ), the larger 50 km IPZ is only alluded to by indicating that pills are also 'available' at reception centres within the IPZ. Page 136, describes the 3-times-yearly media campaigns raising awareness about the pills, focused on the public residing within the 10 km Detailed Planning Zone and only vaguely alludes to this "extending into the IPZ". The only reference directly addressing the IPZ is that one of Durham Region's videos raising general awareness about KI pills is focussed on its availability in the IPZ.

There is no description in the Application at all, of the IPZ's key broader functions in excluding food produced in that zone from the local food supply or from export. Why this apparently cavalier treatment of the importance of an Ingestion Planning Zone? It appears to downplay the potential wider impact of a radiological event.

The Ingestion Planning Zone for Darlington is indicated as a 50 km zone. There is no indication as to how this zone size was arrived at. What factors, such as the size of reactors, possible involvement of multiple reactors, atmospheric conditions in the area - typical and extreme, and population numbers were considered? How were any of these or other factors applied in setting the zone size? My skepticism about the setting of this zone size is founded in my experience with researching and presenting on this issue at the CNSC's hearing on NB Power's application for a 25-year licence for the Pt Lepreau Nuclear Station in 2022, described below.

*In preparing for the Pt Lepreau licence hearing in 2022, we consulted the IAEA documents*

- *IAEA GSR Part 7,*
- *IAEA, "Considerations in the Development of a Protection Strategy for a Nuclear or Radiological Emergency" 2020*
- *IAEA, "Arrangement for Preparedness and Response for a Nuclear or Radiological Emergency (Draft)" (2021)*

*The IAEA material indicates that an Ingestion and commodities planning distance of 100 km would apply for reactors of 100 to 1000 MWth, and 300 km for reactors equal to or more than 1000MWth.*

*As the Pt Lepreau reactor, at 660 MW (electric), would qualify in the latter (300 km) category, this would mean that a significant portion of PEI's and Nova Scotia's Annapolis Valley's prime farming areas would fall into that zone. Radiological contamination in that zone could result in the food produced there, being excluded from both the local, and exported, food supply. Farmers and municipalities would need to be aware of this possibility in case of a nuclear or radiological event.*

*The ingestion Planning Zone established for Pt Lepreau by NB Power, however, is only "57km : expandable if necessary". The IAEA's 300km zone, is approximately 5 times the 57 km zone set by NB Power, a rather extreme difference! As the panel proceeded through our written submission, NB Power was asked to respond to our concern that the zone designated was well below IAEA standards. An NB Power representative then responded to the effect that, 'The IAEA allows for nuclear facilities to establish their own specific Ingestion Exclusion Zone, and , accordingly NB power had set it at 57 km.' The CNSC panel, accepted this answer at face value, and proceeded to other issues, WITHOUT ANY FOLLOW UP QUESTIONS AS TO THE FACTORS USED BY NB POWER OR HOW DIFFERENCES IN MODELING COULD RESULT IN SUCH A LARGE DIFFERENCE in the size of the zone. Since the hearings do not allow for the 'Intervenor' to ask follow up questions or to cross examine the respondent, no further clarification was received! A very cavalier treatment by the CNSC was made clear by allowing the proponent's claim to go unchallenged or at least unexamined.*

The OPG 'Application' document refers to the "Provincial Emergency Response Plan (PNERP)" for more details on how the different emergency response zones are applied. Reading the latter document raises a number of concerns.

#### Facility description not current:

The PNERP document referring to Darlington, section 2.1.3, describes it as comprising one power station with four reactors, each with a generating capacity of 881 MW, and a Tritium Removal Facility. No mention is made of the current construction zone, involving deep excavation and service installation for the licenced build of the first of four BWRX 300 small modular reactors, on the Darlington site. It is important that the emergency documents be current for such a major on-site project as this, which could affect access and first responder approach in the case of an emergency during and after the build(s). Also, once operational, how might the presence of the BWRX reactor(s) on the site- with their different technologies for reactor operation, cooling and shutdown- affect emergency considerations? First responders should not have to guess what they are walking into!

#### Implications for nearby nuclear facilities not examined

Figure 2.3 of the document shows a map with overlay of the Ingestion zone, where zone IPZ6 in the 20-30 km range incorporates the Pickering Nuclear station. There is no attempt to draw out any implications of radiological contamination caused by either the Pickering or the Darlington facility for safe access, or precautions needed to access the other station.

#### No commitment to environmental decontamination

Section 2.2.4 Ingestion Planning Zone, sub part a), lists 4 steps to protect the food supply, which concur with four of the steps listed in the IAEA's Safety Measures Guide , 4.48 Agricultural countermeasures, but omit the IAEA's fifth item "Decontamination of areas and their return to normal use". Why is this step omitted? It should be included and a full cost estimate provided, as this is part of evaluating the cost-competitiveness of nuclear power, even allowing for a low probability event.

### **Closing**

In closing, it is important to consider this submission in light of the fact that, as a member of the general public, without the technical background for deep knowledge of a complex industry, my comments may not even relate to the most serious implications of a 30-year licence for Darlington. You can probably appreciate that for many members of the general public, preparing any such critique at all, is not an accessible process. Hopefully you will understand the seriousness with which someone like myself considers this matter. A 30-year licence for Darlington Nuclear Station is insupportable!