



CMD 25-H2.57

Date: 2025-05-08

**Written Submission from  
Catherine Vakil M.D.**

**Mémoire de  
Catherine Vakil M.D.**

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 8, 2025

**From:** Catherine Vakil M.D.

**Re:** Darlington Nuclear Generating Station Licence Renewal

Thank you for the opportunity to participate in these public hearings. I request that the CNSC reject the application by Ontario Power Generation (OPG) for a 30 year licence to operate Darlington Nuclear Generating Station, and reduce the term it to no more than 10 years, preferably 5 years.

I am a lifelong resident of Ontario and live north of Kingston. I am a retired family doctor with deep concerns about the deleterious health effects of all stages of the nuclear power chain, from uranium mining and processing, to ongoing radioactive toxic long lasting emissions during regular operation of nuclear reactors, to the very real risk of nuclear weapons proliferation and war, to the unsolved dilemma of storage of highly toxic nuclear waste. Along with these significant problems, the exorbitant cost of nuclear power and the prolonged time it takes to build reactors, make it irrelevant to our climate crisis and ongoing need for clean electricity sources.

I have significant concerns about the terms that Ontario Power Generation (OPG) is proposing for this licence. The most important and most worrisome is the request for a 30 year licence. This is far too long for the following reasons.

A 30 year licence would shut out the public for opportunities to give their input at various stages of the life of this generating station. It is the public that is paying for the operation, maintenance and any refurbishments of these reactors, for storage of all levels of nuclear waste and for the

production of the fuel and eventually the electricity that the reactors produce. Therefore the public should have frequent and extensive input regularly as to the decisions and actions made by OPG over the lifespan of these reactors.

An extremely important concern about the length of this licence is that the population of the area will be significantly increasing over the next 30 years. This will affect the emergency response plan in case of accident. It is the citizens of the region, as well as the millions of people who live downstream and downwind from the DNGS who are taking the risks of a nuclear accident and they deserve to be made constantly aware of the emergency response plan, which needs to be regularly updated as the population increases.

The public should have regular opportunities to engage with OPG and the CNSC as to how the emergency response plan needs to change and adapt to changing demographics of the region. A larger population will involve more traffic in the streets, and, importantly, on highway 401 which is already unacceptably congested. In the event of a mass evacuation, the emergency response plan needs to be appropriate and up to date regarding location of schools, hospitals, nursing homes, workplaces and residential areas, all of which are constantly changing. The public deserves to be regularly updated and engaged in these processes.

Now KI pills are given to people living within 10 km of the site, and are available to people within 50 km though few people are even aware of this. As population density in the entire GTA increases over the next 30 years KI pills should be given to all households within a minimum of 50 km, as more people would be at risk. In Switzerland all people living within a 50 km radius of all nuclear power plants are mailed KI pills. This is even more crucial in Ontario, where most of our reactors (at Pickering and Darlington) are located in the most population-dense region of the country, on the largest body of fresh water in the world. The distribution of KI pills is a critical part of any emergency response plan (and in fact the 50 km radius

should be used for implementation now). With a 30 year licence, the public will have no regular input as to changes in the availability of KI pills.

The science about the health effects of ionizing radiation is advancing all the time. Since the discover of ionizing radiation over a hundred years ago we continue to learn that radiation is more dangerous than previously believed. Over the next 30 years acceptable thresholds for the ongoing radioactive emissions from nuclear reactors may well be reduced as we learn more about their deleterious health effects, especially for females, children and fetuses who are now known to be much more sensitive to the effects of radiation than adult males. The public should be appraised of changes in acceptable thresholds as the science changes, and be regularly offered to participate in decisions.

It must be remembered that these radioactive toxic emissions are cumulative, so the health burden is constantly increasing. Tritium (radioactive hydrogen) in particular is an emission that is produced in abundance by CANDU reactors. It incorporates itself into radioactive water molecules which then enter the local water supply and locally grown food, and eventually the bodies of people living locally. Its half life is 12 years which means that its levels are constantly accumulating in the vicinity of DNGS as well as in people's bodies. Carbon 14 is also released on a routine basis from all CANDU reactors. Carbon is one of the building blocks of all life. This radioactive carbon is then incorporated into living things surrounding the reactors. With a half life of 5700 years, deposits of Carbon 14 will accumulate quickly in the environment and in humans.

It is the public that pays the price of these radioactive toxic emissions, with healthcare dollars as well as with their personal health. They deserve a chance to participate in decision-making on a regular basis regarding these processes.

With time, and with an increasing population in the region, the ecology of the area will change as well. This will require more attention to the ongoing radioactive emissions that occur in all reactors during normal operations. For instance, if some local species acquire the “at risk” designation then the emissions standards might be required to be altered accordingly. Also if the temperature in the adjacent waters of Lake Ontario continues to increase due to the thermal pollution from the operation of the reactors, which affects wildlife, there may be legal requirements for OPG to address this. The public deserves the opportunity to give their opinions as to when and how this is carried out. A 30 year licence would shut the public out of formal input.

A 30 year licence for the DNGS locks in power generation options for Ontarians when there should be the ability for the public to insist on a less centralized grid with more renewable energy and storage and a planned phase out of nuclear power in the future. Other countries in the world are switching to cleaner cheaper forms of electricity generation, while a 30 year licence for Darlington goes in the opposite direction. If future governments want to replace nuclear power with these cleaner cheaper alternatives, following every other country in the world, this would be more difficult with a 30 year licence.

Nuclear power carries with it many intractable problems. High level nuclear waste from spent fuel rods, which remains radioactive for millions of years, still has no reasonable storage plan and continues to accumulate at the nuclear reactor sites. There is always the risk of catastrophic accident, as well as the very real problem of nuclear weapons proliferation associated with producing nuclear power. Importantly, the cost of nuclear power is extremely high, making it the most expensive form of electricity production, severalfold higher than renewable energy. New reactors take many years/decades from inception to electricity production, if they ever produce electricity at all, at often many times the original cost projections. Renewable sources on the other hand are readily available in far less time. Nuclear power is notoriously unreliable, as is evident with the frequent shutdowns of the Point Lepreau nuclear plant in New Brunswick. It was

supposed to be offline for repairs for 98 days in 2024 and this ballooned to 248 days, costing almost a million dollars a day. As these problems continue to plague the nuclear industry, and cleaner cheaper sources of electricity continue to be available, the use of nuclear power should be frequently revisited, with plenty of public input.

Small modular reactors (SMRs) are now being presented as a viable alternative to CANDUs even though they do not exist yet, their safety record and cost have therefore not yet been established, and there is no plan for their novel waste which must be treated differently from CANDU waste. The licence to construct four SMRs at the Darlington site has been recently approved even though the design of the reactors has not even been finalized. They will require HALEU fuel which must be sourced from the U.S., during a time when Canada is trying to reduce reliance on U.S. products. With a 30 year licence to operate, the public will have no say in how the development, construction, operation and decommissioning of these SMRs unfolds.

For all the above reasons I respectfully request that OPG be given a licence to operate Darlington Nuclear Generating Station for 5 years, 10 years maximum, in order for the public to provide input regularly and at every stage in the development and operation of nuclear power.