



Written submission from Kerstin Muth

Mémoire de Kerstin Muth

In the Matter of the

À l'égard d'

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

To the Canadian Nuclear Safety Commission:

Since the Seaborn Panel, the Environmental Assessment Panel examining Atomic Energy of Canada Limited's geological disposal concept, I have been following nuclear energy issues. There are a number of concerns but in this brief letter I will concentrate on nuclear waste and delays in climate action.

The Foreword of the 2015 International Atomic Energy Agency TechDoc Series Report (IEAE-TECDOC-1766) begins with the sentence,

“One of the greatest challenges for nuclear energy is how to properly manage the highly radioactive waste generated during irradiation in nuclear reactors.”

It appears Canada is again on a path that permits the construction of nuclear facilities without an adequate plan for the waste. The current Nuclear Waste Management Organization plan exposes current and future generations to the burdens of high level nuclear waste which includes the risk of failure of the geological disposal repository to isolate the waste. This is unacceptable to many people.

The potential inclusion of the proposed deep geological repository of ongoing waste from a fleet of new small modular reactors was not part of the original plan. That the plan can change so easily is not reassuring. It increases the possibility of acceptance of high-level radioactive waste from the United States even though the Nuclear Waste Management Organization states that the repository will not accept international waste.

Research is underway in a number of countries on transmutation of nuclear waste including Belgium and China (but not in Canada). Researchers of Accelerator Driven Systems (ADS) state that the waste produced would much less radiotoxic and only needs to be isolated from the environment for hundreds of years rather than hundreds of thousands of years. The systems are potentially safer, could use existing nuclear waste as a fuel and generate electricity.

This research is an indication that the sustainability bar for new nuclear energy technology should include that it does not produce high level waste that needs to be isolated from the environment essentially indefinitely. We should not construct new nuclear facilities that will add to the burden of managing high-level nuclear waste.

The response to the climate emergency includes a fast reduction of greenhouse gas emissions toward net-zero in the next few decades. New nuclear has high costs, takes time to build and is initially carbon intensive. Concentrating current efforts on building nuclear facilities takes resources away from numerous other initiatives and technologies which can impact emissions more quickly including conservation and more energy efficient buildings.

My hope is that we do not repeat the mistakes of the past by embracing a new nuclear technology without deep consideration to the full nuclear fuel cycle.

Sincerely,

Kerstin Muth