From:	Sylvia Green-Guenette
Sent Date:	Mon May 11 00:47:29 2026
To:	Nuclear Waste / Déchets Nucléaires (IAAC/AEIC)
CC:	
Subject:	Deep Geological Repository Canister Corrosion and Robotics

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Project #88774 Comment for Impact Assessment Guidelines
To the Impact Assessment Panel:

I am a Dryden Resident with property on the banks of Lake Wabigoon. I advocate for public and environmental safety. I object to the current design and operational plans for a Deep Geological Repository (DGR) proposed by the Nuclear Waste Management Organization (NWMO) to be built, operated and abandoned in Northwestern Ontario, about 40 km from my home.

Canadians have been reassured that this NWMO project is designed for sustainability and safety over geological eons of time. I argue that this premise is fundamentally flawed. I wish to highlight two critical, interconnected vulnerabilities that demonstrate why the NWMO plans present unacceptable and irreversible risk.

Issue 1. Corrosion Time Bomb in the Canister Design

The safety of the DGR project relies entirely on the integrity of the containment copper canisters for hundreds of thousands of years. The proposed design for clad or electroplated canisters introduces a possible catastrophic vulnerability: rapid galvanic corrosion at any point where the underlying base metal is exposed.

When two dissimilar metals are connected in the presence of water (which is inevitable deep underground), they act as a battery. The less noble steel core will corrode at an accelerated rate to protect the copper coating.

This turns a minor handling scratch – an inevitability, especially during the vertical transport of heavy loads – into a potential environmental disaster. The safety case cannot guarantee the required perfection of the canister surface. A design that relies on zero defects is destined for failure.

Issue 2. The Inevitable Failure of Robotics Due to Radiation

To handle the most dangerous waste of all time, this plan relies heavily on complex robotics and automated systems, particularly during high-risk vertical shaft operations.

It is a universally accdepted scientific and engineering fact that gamma radiation, which would stream from these loaded canisters, could damage and destroy electronic equipment. The microchips, sensors, and computers running these robots might degrade and fail over time due to accumulated radiation dose. They would also be vulnerable to instantaneous “bit flips” that can cause unpredictable glitches during critical movements.

This creates an inescapable dilemma. The technology relied upon for safe handling is incompatible with the environment wherein it would operate.

Compounding of Risk and Lack of Intervention

These issues do not exist in isolation. They compound each other. A radiation-induced failure of a robotic system is a probable cause for a canister to be dropped or scratched.

And this leads to the most crucial point: if an accident occurs in the shaft or placement area, **manual human intervention is not an option.** The radiation fields are acutely lethal. One cannot simply send a technician down to fix the broken robot or recover a dropped canister. There is left no reliable recovery solution.

Conclusion

The current DGR approach demands a guarantee of perfection that simply cannot be delivered in the real world. The public and indigenous alike are asked to accept risk management strategies where impossible guarantees of safety are required.

The inherent vulnerabilities of galvanic corrosion and radiation induced equipment failure demonstrate that system is fundamentally flawed. Proceeding with the burial of high-level nuclear fuel waste under these conditions represents an unacceptable and irreversible risk to public safety and the environment.

Thank you for your time and consideration.

Sylvia Green-Guenette

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