
From: Judith Fox Lee <email address removed>
Sent: Wednesday, February 4, 2026 11:55 PM
To: Nuclear Waste / Déchets Nucléaires (IAAC/AEIC)
Subject: Judith Fox Lee Submission of Comments on the NWMO Nuclear Waste Project

To Whom It May Concern,

The Nuclear Waste Management Organization's proposed Deep Geological Repository for high-level radioactive waste program was launched with an Initial Project Description on January 5, 2026, with a 30-day comment period on it. Here is in section A, a list of all my Deep and Serious Specific Concerns, followed by my critique of the global problem of nuclear wastes within the current and historical aspects of the entire nuclear industry worldwide in section B

Section A, Specific Concerns:

1. Thirty days is simply not enough time for members of the public, the scientific community, indigenous and other community groups to study the proposal and prepare their comments. This indicates to me that the federal government is trying to ram this proposal through as quickly as possible, with little interest in really hearing any objections or suggestions for improvements of any sort.
2. Instead, there needs to be a full impact assessment and a full public hearing set up months in advance. The assessment process itself should be managed and completed by an independent working group of nuclear experts from around the world (other IAEA members) as well as an equal number of members of well established environmental organizations which have actively been studying the Canadian nuclear landscape and commenting on it for many years.
3. Transportation--both shorter and long distance-- of radioactive wastes to the designated site **MUST** be included because it is the essence of this proposed method of supposed-waste management. Bring all the wastes to this one place to be buried. Currently, despite **the *Impact Assessment Act's* requirement that activities integral to a project be included in its assessment-- it has been totally and unbelievably excluded, EVEN THOUGH TRANSPORTATION OF WASTES TO THE BURIAL SITE IS THE PROPOSED MODUS OPERANDI OF THIS PROJECT!** This nuclear waste transportation and burial scheme will span 50 years of transportation, 160 years of operations and a million years of radioactive risk. The NWMO intends to receive 2-3 trucks per day for fifty years; trips will average 1,800 km over mostly two-lane public roads, travelling from nuclear generating stations in southern Ontario and eastern Canada to the NWMO's proposed site in the headwaters of the Wabigoon River in northwestern Ontario. The NWMO is pushing to have transportation **EXCLUDED** from the impact assessment. This greatly insults the intelligence of the public and especially of all the communities through which these radioactive wastes will be trucked. **The specific routes need to be identified and each place of residence needs to be alerted to this plan and asked for their comments. Anything less is hijacking the public by not including itd. There are hundreds of communities along the likely transportation routes and downstream from the site whom the NWMO has not included for consultation and education in their decision to select the Revell site. In this way, and others which will be referenced below, the Initial Project Description (IPD) fails to provide the absolutely necessary detailed**

information about the entire project in all aspects. Again, anything less is utter lack of transparency, and therefore, this proposal should be rejected out of hand.

4. The current state of scientific evidence from around the world regarding the geological disposal of spent nuclear fuel and other high-level and long-lived radioactive wastes in a deep geological repository (DGR) at approximately 500m underground, demonstrates that this methodology is far from proven as safe or effective.. Analysis of the existing scientific evidence shows there are many difficulties with the claim that there is a consensus in favour of deep geological disposal. There is no operating deep geological repository (DGR) for high-level nuclear waste anywhere in the world; there are projects under development in Finland and Sweden, but to date no DGR has received final approval or begun to operate *anywhere*. **Therefore this must be recognized as a brand new, unproven technology and much longer study and then a much larger assessment is prudent and required to meet the Canadian Nuclear Safety Commission's (CNAC's) mandate to protect Canadians and our environment.**

5. The NWMO describes the Revell site as being “in the territory of Wabigoon Lake Ojibway Nation” but there are several other Treaty 3 Nations who are also in relationship with the land NWMO has selected. Treaty 3 Chiefs in Assembly have expressed their opposition, as have Nishnawbi Aski Nation, Anishnabek Nation and Chiefs of Ontario. Therefore, without their free and prior consent, according to Canada's UNDRIP legislation, has not been met. Therefore, reject this proposal until the project assessment design includes these communities as bona fide participants.

6. The NWMO project will generate radioactive releases at each stage, from transportation to the time when the wastes are eventually abandoned underground. Again, this means that this proposed project does not meet the basic requirements of the CNSC mandate of protecting Canadians' health and environment. Therefore reject this proposal.

7. A thorough examination of alternatives to the project and alternative means of carrying out the project is required to be included in the impact assessment. Neither of these requirements were included. For example, **the Rolling Stewardship model promoted by Dr. Gordon Edwards of the Canadian Coalition for Nuclear Responsibility, is a preferred alternative which was not considered.** This model is simpler – instead of ‘engineering’ the wastes into deep underground cells, in a configuration which would basically preclude retrieval, and be open to internal geophysical disturbances and potential underground leakage problems, Rolling Stewardship recommends that radioactive waste should be carefully managed in monitored and retrievable conditions and locations so that repairs to packaging can be made as needed, to keep the contents entirely out of the biosphere, in perpetuity or as close to that as humanly possible. The CCNR suggests that this “rolling stewardship” strategy would wisely have each generation teach each subsequent generation how to look after the wastes and keep them out of the biosphere. This is a similar approach to indigenous traditions where generational overlap guarantees the preservation of precious histories and their most valuable wisdoms. It might appeal very much to those communities. The argument sometimes expressed that having bridged generational sharing of important knowledge and methods of handling the wastes properly is a ‘burden upon future generations’ is totally missing the common sense understanding. This is a much better way to handle the wastes until an ‘ultimate solution’ can be found. Just abandoning them in a deep underground mega dump after the institutional control ends is much more of a direct and irresponsible burden on future generations.

And in a related vein, the radioactive waste management plan must include a fulsome listing of the detailed waste inventories expected and provide the waste characterization for all waste categories in the short, medium and long term. I don't believe this has been done sufficiently.

8. This proposal does not help **Maintain the Public Trust in Canada's dealing with our nuclear wastes which is a stated requirement of the International Atomic Energy Agency, of which Canada claims to be a respected member nation. This proposal does not help maintain public trust in the safety regulatory process, as it fails to demonstrate that safety concerns are being addressed objectively, broadly and with sufficient depth of considerations and without undue influence from other stakeholders.**

Yes, this is another major concern -- the way that the CNSC acts as if, and reports that we are, a great and effective participating member of the International Atomic Energy Agency. Yet, we are absolutely contravening one of their major

principles and policies: separation of nuclear safety agencies from nuclear development and promotion agencies within any member government.

The IAEA strongly advocates for separating nuclear safety regulatory bodies from those responsible for promoting nuclear development and utilization within any government. This separation is crucial to ensure the independence of safety regulators and prevent potential conflicts of interest, ensuring that safety concerns are prioritized without being compromised by the interests of promoting nuclear activities.

Here's why the IAEA emphasizes this separation:

- **Independence and Objectivity:**
Nuclear safety regulators must be able to make decisions based solely on safety considerations, without being influenced by the goals of promoting nuclear energy.
- **Avoiding Conflicts of Interest:**
If the same body is responsible for both promoting and regulating nuclear activities, there's a risk that regulatory decisions might be influenced by the desire to advance the nuclear industry, rather than prioritizing public safety.
- **Maintaining Public Trust:**
A clear separation of functions helps maintain public trust in the safety regulatory process, as it demonstrates that safety concerns are being addressed objectively and without undue influence from other stakeholders.
- **Effective Regulation:**
A separate regulatory body can focus its resources and expertise on ensuring the safe operation of nuclear facilities, without having to balance that with the promotion of nuclear technologies.

The IAEA's stance on this issue is strongly reflected in its Safety Standards and other guidance documents, which emphasize the importance of an independent and effective regulatory framework for nuclear safety. With the strong support of the IAEA's Commission on Safety Standards, the IAEA is working to promote this approach globally for all member countries to have this clear governmental, legal and regulatory framework for safety. **Canada, and this project proposal specifically, is NOT compliant with this critically important principle, despite the fact that it has been encouraged and demanded by a full range of civil society organizations and other groups here for this project, for example.**

Section B: Related Global Nuclear Waste Concerns:

Here is my analysis of the facts that after 75 years of nuclear development, the best and brightest of the nuclear engineers and scientists have still failed to find a safe and reliable method of waste management:

It is valid to make some references here to the history of the industry as a whole, because nuclear waste management is not operating in a vacuum – but rather within a very important global scientific and technical context, which is germane to the actual issues which this proposal is being considered at this time.

After observing the nuclear industry for the past 50 years since I was a young adult, I would like to suggest that it is both unfair and misleading to assert that there is simply a problem of a **psychological perception of risk** on the part of the many, many millions of people around the globe who have so actively questioned, studied, tracked and protested the safety risks present at all phases of the nuclear cycle over the past 70 plus years. These people are in most cases not paid one cent for their time, concern, and efforts to write letters, march en masse, organize or join groups, and make public interventions like these. Many of them are indeed scientists, doctors and otherwise very thoughtful and profoundly caring individuals. I happen to agree with the idea that the nuclear experts who will intervene in support of this proposal will generally all be paid employees of this for-profit industry or its related government or organizational structures.

Scientists and engineers have said, many times, that nuclear waste is not a technical problem, but a public relations problem. That misperception is still prevalent today, and we have already heard it expressed several times during numerous CNSC hearings on various projects. In fact, I propose that there is more evidence for the opposite view – that the significant 'credibility gap' arises from the nuclear industry proponents who have promulgated a distorted, psychologically-based representation to the world that their industry is nearly perfect, and fully assured of error- and problem-free operations, and guaranteed, by the strengths of their expertise, of success. If one were to exclusively read the websites and literature of nuclear agencies, associations, and related government ministries in any country, one could truly be led to believe that the world's energy challenges and the industry's own nuclear waste problems have been utterly

solved – or maybe never even existed! This is unfortunately very far from the untarnished truth, and I suggest that the nuclear industry would gain more respect by re-joining the human race and coming down several notches. This is a very outdated way of behaving, and our current rather dismal planetary circumstances are crying out for a new order based on equality, honesty, and free and prior, informed consent and related principles.

The realistic truth is that there are myriad, acknowledged inherent risks, and well-known health hazards, ranging from biological cellular damage caused by marauding nuclei – the unique hallmark of ionizing radiation – discovered in 1898 by the Curies, risks of illnesses such as most kinds of leukemia for which past radiation exposure is one major, recognized risk factor, immediate deaths from exposures to close range and very powerful nuclear sources, or the more slowly developing fatal conditions such as the aplastic pernicious anemia, which killed Madame Curie at age 66, developed after years of exposure to radiation through her work. Other risks have materialized into many nuclear accidents, both the infamous ones and others so well-hidden, usually to quell public reaction and any further erosion of confidence in the industry. **This hidden agenda is regrettable because covering up problems does not lead to improved solutions!** There are also major problems which remain unsolved in an ultimate sense, such as the waste management we have been considering, and other risks noted in experimental projects which have had varying degrees of both success and failure at all phases of the nuclear cycle.

Specifically of interest here is the problem of **dealing safely with nuclear wastes**. Every nuclear-enabled country has had *and still has* problems with nuclear waste management – from the uranium mining tailings remaining in exposed piles which contain Polonium, about 2 billion time more toxic than cyanide, and frequently left blowing around the earth's surface, from indefinitely stock-pooling spent fuel rods, to figuring out what are the best practices for decommissioning all materials involved, because nuclear wastes are an overwhelmingly serious health concern due to their **EXTREMELY** long-lived natures, their strong natural potential to damage living cells, and cause cancers and other genetic disruption. It's simply the nature of ionizing radiation.

Examples of disasters include the time when American nuclear engineers did not predict that a steel drum, filled with radioactive waste, could explode and turn into a flame-thrower in a deep underground nuclear waste repository, because of radiation-induced chemical reactions with the kitty litter that had been regularly used as the plants packing "fill" material because of its highly absorbent qualities– and yet that's exactly what happened at the Waste Isolation Pilot Plant in Carlsbad, New Mexico in 2014. The resulting explosion sent plutonium dust 700 feet vertically upward where it contaminated the shafts, the passages, and 20 atomic workers at the surface. This plant then (belatedly, I might add) came under intense scrutiny after the accident for what was discovered to be a rather lax culture of safety and oversight. At the Bruce Unit 1 reactor, nuclear engineers did not predict that over 500 contract workers would be contaminated with plutonium-bearing dust that they inhaled on a daily basis for almost three weeks in 2009, because of a failure to give those workers protective respirators. Fluorspar miners in Newfoundland suffered a significantly elevated incidence of lung cancer from breathing radioactive radon gas. These are but a few of the truly long list of global nuclear mishaps which have luckily been recorded.

Basically, in over 70 years, the nuclear industry has developed in the same ways as all other human enterprises, by trial and error, accidental successes, brilliant discoveries, clever engineering and yes, multiple examples of simple human error. This is not surprising or unique in any way. It's just that the nuclear culture really believes that they are different and superior. They have evidently very successfully convinced themselves of this. But after reading many submissions for various nuclear projects here in Canada in the past decade, and all the stories over the years of techno-bloopers and worse, one wonders why they just can't be a bit more humble and realistic in their self-estimates, and tone down their PR departments. **The very best and brightest nuclear engineers have not yet come up with a universally accepted and widely applicable permanent waste management approach– nor even a range of site-specific approaches which could successfully cover the wide range of circumstances where nuclear waste is currently created and awaiting treatment and management – and there are many, many around the globe which are not following modern, best practices. Surely the nuclear industry as a whole must bear the brunt of responsibility for this simmering and dangerous mess.**

Other evidence of this becomes clear when considering the legacy wastes at Chalk River and Port Hope, and other Canadian locations, which were so poorly managed for part of this history. Placed out on the soil, left to contaminate the buildings themselves, or in rusting metal containers stacked for all to see. One must assume that at the time they were created, ***they were considered to be highly scientifically and safely stored.***

Yet now, in many of these hearings, we only hear on the part of the proponent, of the urgent importance of addressing what are now recognized as very very poorly contained wastes. ***So what was previously considered a perfectly***

scientific and reasonable approach for part of the 78 years, at some point over time unpredictably devolved into what is now considered a very poor condition and in immediate need of remediation.

Similarly, there were 2 reactor accidents at Chalk River in the 50's – the first involving an uncontrolled nuclear chain reaction, coolant leak, core damage followed by a meltdown, hydrogen explosions and the reactor containment cover being blasted four feet into the air, filling the basement with over 4,000 cubic metres of contaminated water. There was another accident in another reactor there a mere six years later, involving a fuel rupture, uranium fire, a broken fuel rod which was dropped, still burning, into the containment vessel. The entire building was contaminated. These accidents and others— many worse, whose locations we all know – need to be remembered very well when we are told that nothing can possibly go wrong over the next 300, 550 or even thousands of years in a deep underground repository. Other more current demonstrations of possible fallibility have been provided in hearings when CNL or CNSC experts speak about their good practices of the sharing of 'lessons learned' among peers in other countries – lessons learned precisely from errors made in many cases. This shows that yes, there are flaws in the industry and they really do need to be shared, studied, and dealt with transparently. This is happening more and more, and is the right direction.

I share these details to illustrate one undeniable fact: Despite the extensive expertise and globally recognized nuclear achievements in our Canadian nuclear industry, unpredicted flaws and accidents still happened, due to design errors, human flaws, and the experimental nature of the developments.

I posit that the same paradoxical combination exists today: I am willing to state that nuclear engineering is a very considerable achievement when viewed from certain angles, but if it persists in acting as if it is infallible, there will be more lessons learned the hard way, I fear. **And because the very nature of ionizing radiation is its hazardous quality to living cells, these risks must be given highest regard and should never be flippantly dismissed.**

Along these same lines, the global industry's efforts on the waste problem have been characterized by many observers and even several top experts in the field itself as a "failed mixture of unrealistic hopes and misguided speculation". These include Sir Brian Flowers of the UK,, Philip Pahner one of the first contributors to scientific risk analysis of the nuclear industry , Professor Emelyanov of the USSR, Dr. John Gofman the American co-discoverer of U-233, and Dr. Rosaie Bertell, a Canadian nuclear research scientist who studied the health effects of ionizing radiation deeply as an internationally recognized environmental epidemiologist, cancer researcher and public health advocate. These people, and so many others, who first believed in the nuclear dream, were willing to publicly adjust their allegiances once they fully saw what nuclear was delivering to the world.

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Judith Fox Lee

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