Canadian Environmental Law Association
EQUITY. JUSTICE. HEALTH.

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Deep Geological Repository for Canada's Used Nuclear Fuel Project
Impact Assessment Agency of Canada
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Re: Reference No.88774 - We the Nuclear Free North Submission on Draft Integrated Tailored Impact Statement Guidelines

Please be advised that the Canadian Environmental Law Association ("CELA") serves as counsel for We the Nuclear Free North ("WTNFN") in relation to the above-noted project.

On behalf of our client WTNFN, CELA submits these comments to the Impact Assessment Agency ("Agency") on the Draft Integrated Tailored Impact Statement Guidelines ("Draft Guidelines") dated April 10, 2026 for the Nuclear Waste Management Organization's ("NWMO") proposed deep geological repository ("DGR") in northwestern Ontario.

The forthcoming impact assessment process represents the only meaningful opportunity for the federal government, Indigenous nations, the proponent, the public and the Integrated Review Panel to "look before we leap" on an untested, unproven, and highly controversial proposal to handle, transport and permanently emplace high-level nuclear waste deep underground at the Revell site in northwestern Ontario.

This project demands a particularly careful, precautionary, and thoughtful impact assessment because high-level nuclear waste is so dangerous that it must be fully isolated from all living things and the environment for hundreds of thousands of years.[1] A project of this type, magnitude, and environmental significance has never been completed in Canada. In reviewing the Draft Guidelines, WTNFN urges the Agency to avoid any short cuts or superficial analysis.

Our client's comments and concerns about the Draft Guidelines are set out below. In summary, WTNFN submits that the Draft Guidelines are inadequate, unacceptable, and require substantial revision before they can be finalized and issued to the proponent in this case. In summary, the Draft Guidelines are premature, inappropriate, overgeneralized, and overlook or gloss over significant environmental issues that have been raised by WTNFN and other persons during the planning phase to date.

[1] Nuclear Waste Management Organization, *Choosing the Way Forward: the Future Management of Canada's Used Nuclear Fuel,* 2005 ("*Choosing the Way Forward*"), p. 15.

(1) Clear Definition of the Scope of the Project to be Analyzed

The NWMO proposed, and Parliament adopted, "Adaptive Phased Management" as the overall management approach to the "management of nuclear fuel waste".[2] However, WTNFN is concerned that this management approach has morphed into an excuse to avoid rigorous and detailed review of every phase and aspect of the project.

It is unacceptable and contrary to the public interest purposes and provisions of the *Impact Assessment Act,* SC 2019, c 28, s 1 ("IAA") to avoid or defer detailed analysis of the direct, indirect and cumulative environmental effects of all aspects of the project and all incidental activities, or to leave key design or operational details undecided and unanalyzed because of the purported desire to maintain flexibility. The precautionary principle, as entrenched in section 6(2) of the IAA, demands an upfront and cautious approach in this context where there is considerable uncertainty about long-term and potentially irreversible environmental impacts of the project. Accordingly, the focus in the Draft Guidelines on "leveraging" existing information in section 4.1 must not result in a less detailed and rigorous impact assessment.[3]

The Guidelines which are eventually issued in this case should not allow the NWMO to materially change or add key components to the project after the Impact Statement has been completed. The project should be clearly defined and assessed with respect to how much high-level waste is part of the project, and the issued Guidelines should specify that low and intermediate level waste, substantially higher volumes of high-level waste, and any non-CANDU fuel waste cannot later be included in the project scope if they are not initially analyzed as part of the impact assessment.[4]

i. The Draft Guidelines Should Clarify that All Phases and Facilities that make up the Project are to be Included in the Impact Statement

The Draft Guidelines should be revised so that they: (a) ensure all of the phases and facilities that make up this project are comprehensively analyzed in relation to their adverse environmental effects, and (b) require a rigorous and detailed analysis of alternatives.[5] The DGR project must be described and the analysis focused on the project's full scope and all of the proposed facilities.

At a minimum, the phases of the proposed project to be assessed in the Impact Statement must include:

- Handling and re-packaging of high-level nuclear waste at the interim sites;
- Loading the re-packaged high-level nuclear waste onto vehicles;
- Transportation of high-level nuclear fuel waste from the interim sites to the DGR site;
- Construction of all the surface and sub-surface on-site facilities;

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[2] *Nuclear Fuel Waste Act,* SC 2002, c 23 ("NFWA"), s. 3.
[3] Impact Assessment Agency of Canada, "Draft Integrated Tailored Impact Statement Guidelines", April 10, 2026 ("Draft Guidelines"), pp. 13-14.
[4] Draft Guidelines, p. 10.
[5] Draft Guidelines, p. 10.

- Operations of all the surface and sub-surface on-site facilities;
- Long-term monitoring and reporting; and,
- De-commissioning of all the facilities, including the deep geological repository.

At the site, the Initial Project Description ("IPD") included the following extensive list of facilities, each of which needs to be examined in detail in the Impact Statement for potential adverse effects and alternatives:

Temporary Facilities and Infrastructure
- Temporary laydown area
- Temporary fuel facilities
- Temporary communication system
- Temporary waste rock stockpile
- Temporary rock crusher
- Temporary explosives magazine
- Temporary concrete batch plant
- Temporary electrical supply
- Temporary sumps and underground dewatering infrastructure
- Temporary water management
- Temporary work trailers, lunchrooms, washrooms and training facilities
- Accommodation camp temporary utilities

Primary Buildings/Facilities
- Excavated Rock Management Area and auxiliaries
- Organics Management Area and auxiliaries
- Used Fuel Packaging Plant
- Low-level waste storage facility
- Intermediate level waste storage
- Active solid waste handling facility
- Active liquid waste treatment system
- Waste management area
- Quality control office and laboratories
- Administration buildings (including offices)
- Maintenance garage
- Sealing material storage bins
- Sealing material compaction plant
- Warehouse and storage building(s)
- Service shaft complex

Surface
- Main shaft complex
- Exhaust ventilation shaft complex
- Concrete batch plant
- Emergency response building(s)

Water Management

- Water management ponds
- Freshwater pumphouse and pipeline
- Water management infrastructure and distribution system
- Water storage tanks
- Service water treatment plant
- Potable water treatment plant
- Domestic sewage treatment plant
- DGR dewatering settling pond
- Process water settling pond
- Discharge pipeline and associated discharge infrastructure

Power Supply
- Electricity transmission line
- Switchyard and substation
- Emergency generators
- On-site electrical distribution lines

Fuel and Reagents
- Warehouse and hazardous materials storage building
- Diesel and propane tanks
- Reagents/chemicals storage areas
- Air compressor building

Other On-site Infrastructure
- Parking area
- Weigh scales
- Communications infrastructure
- Primary and secondary access roads within property
- Guardhouses
- Natural gas distribution system
- Utility corridor
- On-site roads
- Security infrastructure and fencing
- Accommodation camp
- Storage yard
- Helicopter pad
- Primary access road connection to Highway 17
- Secondary access road connection Highway 17
- Rail spur connection to regional rail line
- Connection to regional Hydro One transmission line
- Connection to regional natural gas pipeline
- Connection to regional telecommunications line

Underground
- Central services area
- Placement arms

- Placement panels and placement rooms
- Main shaft
- Exhaust ventilation shaft
- Service shaft
- Underground Demonstration Facility
- Explosives magazine
- Auxiliary Facilities[6]

As demonstrated by the foregoing and extensive list, this project encompasses many facilities which, in and of themselves, may cause adverse environmental effects, which makes it critical for the issued Guidelines to expressly require that each facility is analyzed in detail. For example, the used fuel processing plant is only mentioned in the Draft Guidelines in the alternatives analysis. It must be clarified within the issued Guidelines that this industrial facility, and all of the facilities and infrastructure that make up this project must be: (a) analyzed for adverse environmental effects; (b) addressed in a broad and credible cumulative effects analysis; and (c) systematically compared to alternatives.[7]

ii. The Time Frame for Analysis is Hundreds of Thousands of Years

The Draft Guidelines are unclear about the time frame for undertaking the environmental analysis in the Impact Statement. WTNFN supports the determination that "the temporal boundaries for the assessment should consider, where applicable, the total time frame of the project, which is nominally one million years."[8] However, it is unclear why that timeframe would not always be applicable to all aspects of the project and its incidental activities. WTNFN recommends removing vague, imprecise, or qualifying language, such as "where applicable", from any description of the time frame for the project's assessment.

Moreover, the issued Guidelines should make it mandatory for the NWMO to provide adequate information, at a sufficient level of detail, in a format that allows for analysis during the construction and operational period up to closure, up until 10,000 years after closure, and beyond 10,000 years over repeated glacial cycles.[9] The adverse effects of the project must be analyzed within a time frame commensurate with the extremely long-term risks posed by this extraordinary project. Since nuclear fuel waste will remain radioactive and dangerous for hundreds of thousands of years, the necessary analysis of adverse environmental effects from this project must include long-term forecasting, monitoring, and contingency planning for adverse effects within that extensive time frame.

iii The Nuclear Safety and Control Act Licensing Regime Does Not Restrict the Impact Statement

[6] Nuclear Waste Management Organization, Initial Project Description: Deep Geological Repository (DGR) for Canada's Used Nuclear Fuel Project, December 2025 ("IPD"), pp. 48-49.
[7] Draft Guidelines, p. 10.
[8] Draft Guidelines, p. 12.
[9] Draft Guidelines, p. 68.

WTNFN recommends that the Draft Guidelines be amended to make it abundantly clear that the more narrow and staged review of the Canadian Nuclear Safety Commission ("CNSC") pursuant the *Nuclear Safety and Control Act,* SC 1997, c 9 ("NSCA") does not limit the nature and scope of the Impact Statement or the impact assessment process under the IAA.[10] The CNSC does not, for instance, examine the cumulative effects of a project or alternatives in its licensing decisions, but these are integral factors under s.22 of the IAA. The CNSC's staged approach also means that the review panel will only be examining the licence to prepare site, which does not address most of the long-term adverse impacts that may be caused by this project over its entire lifespan. In short, the phased licensing process used by the CNSC under the NSCA is not an adequate substitute for the impact assessment process under the IAA.

(2) Definition of Adverse Effects

The NWMO's proposal for a DGR is a federal undertaking.[11] Accordingly, the definition of federal adverse effects, as defined in s.2 of the IAA, that applies for every phase of this project is:

> ***adverse effects within federal jurisdiction*** means, with respect to a physical activity or a designated project,
>
> ...
>
> In the case of a physical activity or a designated project that is carried out on federal lands or is a *federal work or undertaking*, as defined in subsection 3(1) of the *Canadian Environmental Protection Act, 1999,* this definition also includes the non-negligible adverse effects of that activity or project.[12]

The word "effects" is generally defined in the IAA as follows: "***effects*** means, unless the context requires otherwise, changes to the environment or to health, social or economic conditions and the positive and negative consequences of these changes."[13]

However, throughout the Draft Guidelines, various definitions of adverse effects are cited. In the context of an impact assessment of a federal undertaking, all non-negligible adverse effects of the project must be considered in accordance with the IAA.

(3) Alternatives to the Project Must be Considered

Section 22(1)(f) of the IAA requires that a review panel must take into account "any alternatives to the designated project that are technically and economically feasible and are directly related to the designated project".[14] The wording of section 22 is mandatory. The review panel "must take into account" the prescribed factors.[15]

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[10] Draft Guidelines, p. 1.
[11] Draft Guidelines, p. 2
[12] IAA, s. 2.
[13] IAA, s. 2.
[14] IAA, s. 22(1)(f).
[15] IAA, s. 22(1).

However, the Draft Guidelines improperly propose to totally exclude any information in the Impact Statement on "alternatives to" the proposed project and to instead exclusively rely on the NWMO's 20-year old report *Choosing the Way Forward: the Future Management of Canada's Used Nuclear Fuel* ("*Choosing the Way Forward*").

WTNFN strongly opposes this approach in the Draft Guidelines and urges the Agency to review and revise its proposal on an alternatives assessment. The IAA requires a review of all technically and economically feasible alternatives to the proposed project, including a detailed analysis of the potential benefits and adverse effects of each alternative. Especially because of the nature of this proposed project, which deals with very dangerous substances over extremely long time frames, a nuanced and robust analysis of all alternatives is essential and must be conducted.

i. Section 18(1.1) of the IAA

The Agency does not have legal authority to wholly exclude an analysis of "alternatives to" the project under the IAA. Section 18(1.1) of the IAA provides that the Agency must take into account all factors in s.22(1) of the IAA in determining what information or which studies are necessary for the conduct of the impact assessment, including alternatives to the project:

> (1.1) The Agency must take into account the factors set out in subsection 22(1) in determining what information or which studies it considers necessary for the conduct of the impact assessment.[16]

The Agency's discretion in s.18(1.2) of the IAA relates to the scope of the factors in s.22, not whether they should be wholly excluded from the analysis:

> (1.2) The scope of the factors referred to in paragraphs 22(1)(a) to (f), (h) to (l) and (s) and (t) that are to be taken into account under subsection (1.1) and set out in the tailored guidelines referred to in paragraph (1)(b), including the extent of their relevance to the impact assessment, is determined by the Agency.[17]

Accordingly, the proposed exclusion of "alternatives to" the project in the Draft Guidelines should be revised to meet the legislative requirements in s.18(1.1) of the IAA. The proposal to wholly exclude an alternatives analysis from the impact assessment is not authorized by the legislation. Instead, WTNFN urges the Agency to use its authority under s.18(1.2) to ensure that the alternatives analysis is robust and current.

ii. The *Choosing the Way Forward* Study is Stale-Dated and Inadequate

The NWMO's study *Choosing the Way Forward* was published over twenty years ago in 2005 for a different purpose under different legislation and cannot replace an alternatives analysis

[16] IAA, s. 18(1.1).
[17] IAA, s. 18(1.2).

expressly required under s.22 of the IAA. Although NWMO did an early and preliminary analysis of three alternatives, (1) deep geological disposal in the Canadian Shield, (2) storage at nuclear reactor sites, or (3) centralized storage, above or below ground[18], the approach that was ultimately recommended and adopted was "Adaptive Phased Management".[19] The approach was based in part on a desire to actively review and change course as appropriate, especially by future generations.[20] The NWMO stressed that a key feature of adaptive phased management was to ensure that it provides a "genuine choice".[21] However, a genuine choice about this project at this critical juncture requires a fulsome and current analysis of alternatives.

The three alternatives that were assessed had distinct advantages and limitations.[22] The lack of adaptability of the deep geological repository approach was determined to be a weakness.[23] The NWMO also highlighted that there is uncertainty about how the system will perform over time and it provides comparatively little opportunity for future generations to influence the way in which the used fuel is managed.[24] The NWMO also found that storage at nuclear reactor sites was technically feasible, but was not being proposed for economic considerations at the time.

However, the project now before the Agency singularly focuses on the proposed deep geological repository. The weaknesses and inflexibility of that approach remain an issue, particularly in comparison to the other alternatives. It is therefore crucial that a detailed and project-specific "alternatives to" assessment be required in the Impact Statement and be evaluated by the review panel as part of the impact assessment for this project.

Key components of the project have also evolved since the publication of *Choosing the Way Forward* twenty years ago. For instance, the IPD did not focus on "optional shallow storage at the central site prior to placement in the repository", "continuous monitoring", and "provision for retrievability".[25] Fundamental changes between what was assessed in *Choosing the Way Forward* and the current proposal are:

- No specific site for a deep geological repository, including all of the associated surface and subsurface facilities, was assessed in *Choosing the Way Forward*.[26]

- NWMO identified that Indigenous engagement and the specific obligations of the government would be clarified when "directly affected individuals and communities became more evident".[27] Because no site had been chosen, the Indigenous peoples along the transportation route, near the proposed site, and downstream from the site were not specifically consulted at the time.

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[18] *Choosing the Way Forward,* pp. 21-22.
[19] *Choosing the Way Forward,* p. 23.
[20] *Choosing the Way Forward,* p. 23.
[21] *Choosing the Way Forward,* p. 45.
[22] *Choosing the Way Forward,* p. 30.
[23] *Choosing the Way Forward,* p. 31.
[24] *Choosing the Way Forward,* p. 31.
[25] *Choosing the Way Forward,* p. 23.
[26] *Choosing the Way Forward,* p. 25.
[27] *Choosing the Way Forward,* p. 228.

- Transportation estimates included road, rail, and water, noted that the mode of transportation would depend on "factors such as the location of the central facility", and were based on a used fuel inventory of 3.6 million fuel bundles.[28]

- Critical design features had not yet been decided. For instance, it was not yet determined whether used fuel would be placed within rooms or in boreholes in the floor of the rooms.[29]

- The adaptive phased management option included consideration of shallow underground storage, which no longer appears to be contemplated.[30]

- Retrievability was a fundamental principle.[31] In *Choosing the Way Forward,* future generations would determine whether to finally close the underground deep geological repository and the appropriate form and duration of post-closure monitoring.[32] The deep geological repository option included the technology to retrieve used fuel after emplacement in the repository.[33] The Draft Guidelines only mention retrieval as it relates to "alternative means" for the project, as opposed to a fundamental tenet of the Adaptive Phased Management approach chosen in *Choosing the Way Forward,* and on which the Agency is proposing to substitute for an alternatives analysis.[34]

- In 2005, the cost of "adaptive phased management" was $21-24 billion dollars (2002 dollars).[35] This cost estimate is very dated, was not associated with any specific site, and was determined when many details of the project were yet to be decided. Over twenty years later, an IAA assessment of alternatives requires consideration of any alternatives which are "economically" feasible and should include an assessment of current economic feasibility of both the proposed approach and the alternatives.[36]

- The NWMO contemplated that key decisions which would follow any adoption of Adaptive Phased Management as a management approach to this project would include (1) selection of used fuel containers and sealing system design, (2) selection of the preferred site, (3) selection of a long-term isolation design (in-floor, in-room or long horizontal borehole placement of used fuel containers), (4) selection of optimal transportation technology, route and logistics (timing), and (5) identification of the repository monitoring system during emplacement and after operations.[37] Many of these identified details remain unclear. The details of the NWMO's project proposal, and their

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[28] *Choosing the Way Forward,* p. 25.
[29] *Choosing the Way Forward,* p. 26.
[30] *Choosing the Way Forward,* pp. 24, 29.
[31] *Choosing the Way Forward,* pp. 45, 103.
[32] *Choosing the Way Forward,* p. 44.
[33] *Choosing the Way Forward,* p. 21.
[34] Draft Guidelines, p. 10.
[35] *Choosing the Way Forward,* p. 28.
[36] IAA, s. 22(1)(f);
[37] *Choosing the Way Forward,* pp. 301-302.

alternatives, need to be analyzed within the Impact Statement and evaluated in the impact assessment conducted by the review panel.

The world has changed since this 20-year old report was published. Since 2005, there have been significant changes to the status of our environment, including escalating climate change and biodiversity crises. As well:

- The *United Nations Declaration on the Rights of Indigenous Peoples* ("UNDRIP") was adopted by the General Assembly of the United Nations in 2007 but was not adopted by Canada at this time.[38]

- *UNDRIP* was adopted into Canadian law in 2021 in *United Nations Declaration on the Rights of Indigenous Peoples Act,* SC 2021, c 14.[39]

- The *Choosing the Way Forward* study pre-dates the explosion and release of radioactive material at an underground repository for nuclear waste in the Waste Isolation Pilot Plant in the United States in 2014.[40]

- The *Choosing the Way Forward* study pre-dates the decision by the United States Department of Energy to withdraw its application for a nuclear waste repository in Yucca Mountain.[41]

- The disaster at the Japanese Fukushima Daiichi nuclear reactors started in 2011.[42]

- There was no active contemplation in 2005 of non-CANDU technologies being introduced in Canada. For instance, Natural Resources Canada released a Canadian Small Modular Reactor Roadmap in 2018.[43]

iii. Nuclear Fuel Waste Act Did Not Require an Analysis of the Same Factors

In any event, the *Choosing the Way Forward* analysis is not equivalent to an impact assessment that meets all requirements of the IAA. The *Nuclear Fuel Waste Act* does not require an analysis of all of the factors in s.22 of the *IAA.*

Sections 12 and 13 of the *Nuclear Fuel Waste Act,* which were the legislative bases for the *Choosing the Way Forward* report, do not overlap with the s.22 analysis in the IAA. Section 12

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[38] United Nations, *Resolution Adopted by the General Assembly on 13 September 2007,* 61/295: United Nations Declaration on the Rights of Indigenous Peoples, 2 October 2007. <Document Viewer>
[39] *United Nations Declaration on the Rights of Indigenous Peoples Act,* SC 2021, c 14.
[40] Hobbs et al., *Thermal Runaway of Nitric Acid-Soaked Kitty Litter in Transuranic Waste,* 2022. <Thermal runaway of nitric acid-soaked kitty litter in transuranic waste>
[41] United States Government Accountability Office, *Commercial Nuclear Waste: Effects of a Termination of the Yucca Mountain Repository Program and Lessons Learned,* May 10, 2011. < Commercial Nuclear Waste: Effects of a Termination of the Yucca Mountain Repository Program and Lessons Learned | U.S. GAO>.
[42] International Atomic Energy Agency, *The Fukushima Daiichi Accident, GC(59)/14.*
[43] Natural Resources Canada, *Canadian Small Modular Reactor (SMR) Roadmap,* 2018. < Canadian Small Modular Reactor (SMR) Roadmap>

of the *Nuclear Fuel Waste Act* listed proposed options for focus in the study including deep geological disposal in the Canadian Shield, storage at nuclear reactor sites, and centralized storage, either above or below ground, although the NWMO's proposed option was a fourth, flexible management framework.[44]

The NWMO failed to identify an economic region for each alternative as required by the *Nuclear Fuel Waste Act*.[45] NWMO argued that specific examination of the regions, against siting principles and scientific and technical siting requirements, would later determine the suitability of any proposed location.[46]

Significantly, the focus of the analysis in *Choosing the Way Forward* was not on environmental effects or health. In comparison to the factors listed in s.22 of the IAA, the *Nuclear Fuel Waste Act* does not explicitly require any of the following analyses:

- health impacts[47],
- the effects of malfunctions or accidents that may occur in connection with the designated project[48]
- any cumulative effects[49]
- mitigation measures for all adverse effects (as opposed to only plans to avoid or minimize significant socio-economic effects) that are technically and economically feasible[50],
- the impact of the designated project on Indigenous peoples[51],
- the need for the project[52],
- the extent to which the project contributes to sustainability[53],
- the extent to which the effects of the designated project hinders or contributes to Canada's environmental obligations and commitments in respect of climate change[54],
- any change to the designated project that may be caused by the environment[55],

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[44] NFWA, s.12(2).
[45] NFWA, s. 12(3); *Choosing the Way Forward,* pp. 145-153.
[46] *Choosing the Way Forward,* p. 151.
[47] IAA, s. 22(1)(a).
[48] IAA, s. 22(1)(a)(i).
[49] IAA, s. 22(1)(a)(ii).
[50] IAA, s. 22(1)(b).
[51] IAA, s. 22(1)(c).
[52] IAA, s. 22(1)(d).
[53] IAA, s. 22(1)(h).
[54] IAA, s. 22(1)(i).
[55] IAA, s. 22(1)(j).

- the requirements of the follow-up program in respect of the designated project[56],

- considerations related to Indigenous cultures raised with respect to the designated project[57],

- community knowledge with respect to the designated project[58],

- comments received from the public[59],

- any assessment of the effects of the designated project that is conducted by or on behalf of an Indigenous governing body and that is provided with respect to the designated project[60],

- the intersection of sex and gender with other identity factors[61].

(4) <u>The Draft Guidelines Must Require a Clear Analysis of Social and Public Support or Opposition to the Project</u>

Section 22(1) of the IAA requires that changes to social conditions must be taken into account.[62] Comments received from the public are also a mandatory factor to be taken into account.[63] Accordingly, the Impact Statement and the subsequent impact assessment by the review panel must more openly and thoroughly discuss the very extensive opposition to the project expressed by Indigenous nations and members of the public to date.

NWMO committed to seeking an informed, willing community to host the long-term management facility[64], but has so far been notably silent in response to very serious concerns raised by Indigenous communities and the public about its choice of "hosts" for the preferred site, its refusal to acknowledge local communities closer to the project than the Township of Ignace, which in any event does not have legal authority over the proposed site and is upstream of many of the impacts, and the clearly stated opposition to the proposal by affected Indigenous communities.

WTNFN notes that a key finding of the Environmental Assessment Panel ("Seaborn Panel"), which assessed the Atomic Energy of Canada Limited's ("AECL") concept for final disposal of nuclear waste, was that AECL had not demonstrated social acceptance or broad public support

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[56] IAA, s. 22(1)(k)
[57] IAA, s. 22(1)(l).
[58] IAA, s. 22(1)(m).
[59] IAA, s. 22(1)(n).
[60] IAA, s. 22(1)(q).
[61] IAA, s. 22(1)(s).
[62] IAA, s. 22(1)(a).
[63] IAA, s. 22(1)(n).
[64] *Choosing the Way Forward,* p. 40.

for a deep geological repository.[65] The Seaborn Panel found that to be considered acceptable, a concept for managing nuclear fuels wastes must:

1. have broad public support;
2. be safe from both a technical and a social perspective;
3. have been developed within a sound ethical and social assessment framework;
4. have the support of Aboriginal [Indigenous] people;
5. be selected after comparison with the risks, costs and benefits of other options; and
6. be advanced by a stable and trustworthy proponent and overseen by a trustworthy regulator.[66]

The Seaborn panel found that the concept for deep geological disposal of nuclear wastes, similar in concept to the deep geological repository currently before the Agency, had not been demonstrated from a social perspective. It did not have broad public support. It did not have the required level of acceptability to be adopted.[67] The Panel's finding of safety from a technical perspective was qualified and limited, with a key conclusion that "from a technical perspective, safety of the AECL concept has been on balance adequately demonstrated for a conceptual stage of development."[68]

NWMO recognizes the Seaborn Panel findings and stated that safety must be viewed from two complementary perspectives: technical and social in *Choosing the Way Forward*.[69]

The Draft Guidelines should be revised to adopt this understanding of safety and to build on the recommendations of the Seaborn Panel. Safety must be understood as both technical and social in nature. The issued Guidelines should include consideration of the factors identified in the Seaborn Panel.

(5) A Fulsome Analysis of the Transportation of High-Level Waste Must be Conducted

i. Support Finding That all Transportation of High-Level Waste is Included in Impact Assessment

WTNFN is strongly supportive of the Agency's finding that transportation activities, including "the transport of used nuclear fuel to the repository during the operation phase of the project", will be part of the impact assessment.[70] This finding is supported by the *Nuclear Fuel Waste Act,* which defines the management of nuclear fuel waste as including "transport for the purpose of storage or disposal".[71]

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[65] *Choosing the Way Forward,* p. 16.
[66] Environmental Assessment Panel, "Nuclear Fuel Waste Management and Disposal Concept, 1998. ("Seaborn Panel"), s. 5.1. <Canadian Impact Assessment Registry - Archives>
[67] Seaborn Panel, s. 5.1.
[68] Seaborn Panel, Executive Summary.
[69] *Choosing the Way Forward,* p. 16.
[70] Draft Guidelines, p. 65.
[71] NFWA, ss. 2, 3, 12.

However, WTNFN is concerned about unjustified observations in the Draft Guidelines which suggest that the timing of high-level waste transportation during the operational phase of the project can somehow justify a less fulsome impact assessment analysis.[72] The impact assessment's purpose is to analyze each phase of the project, including the active operations phase of the project when much of the potentially harmful activity would occur. These comments in the Draft Guidelines are particularly unjustified since many of the key phases of this project will be most active and most dangerous during that same time frame, including operation of all the surface and sub-surface facilities at the proposed site, such as the used fuel processing plant.

WTNFN lists below several transportation studies that must be incorporated into the impact statement and updated as the impact assessment process is carried out. However, the update and incorporation of these studies into the Impact Statement do not on their own meet the requirements of the IAA. A fulsome analysis focused on the s.22 factors is required, including alternative means of transportation.

ii. Insufficient to Only Update the 2021 Preliminary Transportation Plan

The Draft Guidelines merely require the NWMO to update its 2021 Preliminary Transportation Plan. This sparse 32-page preliminary "plan" provides very little detail and no analysis of adverse effects arising from transportation of used nuclear fuel waste. It was created prior to the selection of the Revell site. It includes two possible modes of transportation – an all-road system and a road-rail system.[73] It contemplates different transportation package designs but with little detail.[74] The NWMO also suggests the preliminary plan may change due to technological advances.[75]

NWMO committed in the preliminary plan to "finalizing key decisions", such as the selection of transport modes and packages, once a site was selected.[76] NWMO should fulfil that commitment within the impact assessment process to allow for an analysis of the project as proposed and the alternatives. Far more detail is required regarding the required analysis of the adverse impacts of transportation in the Draft Guidelines.

iii. All NWMO Transportation Studies Should be Incorporated into the Impact Statement and Updated

The Draft Guidelines should be amended to require the planning framework for transportation of used nuclear fuel in *Moving Forward Together: Planning Framework for the Transportation of Used Nuclear Fuel* to be incorporated into the impact statement and updated.[77] The transportation planning framework highlights that when designing and implementing the

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[72] Draft Guidelines, p. 66.
[73] Nuclear Waste Management Organization, *Preliminary Transportation Plan,* December 2021 ("Preliminary Transportation Plan"), p. 3.
[74] Preliminary Transportation Plan, p. 11.
[75] Preliminary Transportation Plan, p. 3.
[76] Preliminary Transportation Plan, p. 4.
[77] Nuclear Waste Management Organization, *Moving Forward Together: Planning Framework for the Transportation of Used Nuclear Fuel,* December 2021 ("Transportation Planning Framework").

transportation plan, "[many] people should be involved in this conversation, including Indigenous peoples, communities along transportation routes, communities that currently host nuclear facilities, first responders, government officials, scientists, and technical experts."[78]

The Draft Guidelines should also be amended to require any further information on transportation, including the *Deep Geological Transportation System Conceptual Design Report Crystalline/Sedimentary Rock,* to be incorporated into the impact statement and updated.[79]

iv. Choosing the Way Forward

NWMO itself identified the following communities of interest in analyzing transportation if option 4: adaptive phased management was chosen:

> Cities, towns, villages, municipalities and dispersed population in the vicinity of the site; the Aboriginal community within the affected traditional territory**, transportation corridor communities, reactor site communities until all used nuclear fuel is re-located**. [emphasis added][80]

The issued Guidelines must ensure that meaningful Indigenous engagement and public engagement reaches all of these identified communities.

(6) Accidents, Malfunctions, Malevolent Acts and Emergency Planning

The Draft Guidelines state that the Impact Statement must identify hazards for each project phase that could lead to accidents and malfunctions.[81] However, the Draft Guidelines should be revised to more clearly identify that not only does each phase of the project need to be analyzed for accidents, malfunctions, safety from malevolent acts and emergency planning, but also each facility. An accident analysis at the used fuel packaging plant will not be similar to an accident analysis at the proposed explosives magazine, excavated rock management area, or the shafts and deep geological repository placement arms or rooms. Each facility and aspect of the project must be analyzed for accidents, malfunctions, safety from malevolent acts, and emergency planning.

In comparison, the Draft Integrated Tailored Impact Statement Guidelines for the proposed New Nuclear at Wesleyville project impose more clear and substantive requirements for the impact statement with respect to accidents, malfunctions, safety from malevolent acts and emergency planning.[82] There is no justification for the lack of detail or different treatment of accidents, malfunctions, malevolent acts or emergency procedures needed in respect of this proposed NWMO project as opposed to the proposed new nuclear plant in Wesleyville. The Draft Guidelines in this impact assessment should be updated and revised accordingly.

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[78] Transportation Planning Framework, pp. 19, 20, 27.
[79] NWMO, *Deep Geological Transportation System Conceptual Design Report Crystalline/Sedimentary Rock,* 2021.
[80] *Choosing the Way Forward,* p. 227.
[81] Draft Guidelines, p. 62.
[82] Impact Assessment Agency of Canada, Draft Integrated Tailored Impact Statement Guidelines: New Nuclear at Wesleyville Project, April 7, 2026. < Draft Integrated Tailored Impact Statement Guidelines>.

(7) What Studies are Needed?

i. Human Health Risk Assessments and Cumulative Effects

Each phase of the proposed project has the potential for significant adverse effects related to radiological exposures and other exposures to environmental contaminants. All of those effects need to be assessed cumulatively pursuant to s. 22(1)(a)(ii) of the IAA. The Draft Guidelines should clearly identify that NWMO must conduct a human health risk assessment on radiological impacts and all other environmental health risks and assess those risks cumulatively.

Radiological impacts should be analyzed in light of international requirements under the International Commission on Radiological Protection ("ICRP") and the International Atomic Energy Agency ("IAEA"), which requires consideration of their core principles: justification, optimization (including keeping exposures As Low As Reasonably Achievable) and dose limitation.[83] The need for the NWMO project, alternatives to the project, alternative means of conducting the project, and all of the adverse effects of the project must be analyzed with respect to these key principles.

ii. Ecological Health Risk Assessment

The breadth and variety of possible adverse effects raised by this project also demand an Ecological Health Risk Assessment. WTNFN strongly recommends that the issued Guidelines require an ecological health risk assessment, along with the human health risk assessments.

iii. External Expert Review

The NWMO's proposal involves handling, transportation, re-packaging, and permanent emplacement of very dangerous high-level nuclear waste. The expert analysis of the safety and potential adverse effects of the proposed approach must adhere to the principles of scientific integrity, honesty, objectivity, thoroughness and accuracy, pursuant to s.6(3)(b) of the IAA.[84] WTNFN therefore recommends that the Agency establish an independent expert review panel to analyze the radiological and other impacts of this proposal and provide input to the review panel. Further public input is needed on what issues should be analyzed by the external expert review panel.

The Seaborn Panel appointed a Scientific Review Group to conduct a specific, in-depth examination of the scientific and engineering aspects of the concept. The independent panel was tasked with critically reviewing and commenting on the acceptability of the concept from a scientific and engineering point of view, reviewing and commenting on the choice of predictive techniques, the underlying assumptions, the validity of the results of the predictive techniques used to assess the long-term performance and safety of the disposal concept, and provide advice

[83] International Commission on Radiological Protection, "Recommendations of the ICRP: ICRP Publication 26" (1977); International Commission on Radiological Protection, "The 2007 Recommendations of the ICRP: ICRP Publication 103" (2007), p 14.
[84] IAA, s. 6(3)(b).

on issues when requested by the panel. The Scientific Review Group provided a report with all of its findings prior to the review panel hearing.[85]

iv. Environmental Justice Must be Considered

The Draft Guidelines do not currently address environmental justice concerns raised by Indigenous Nations and other members of the public. WTNFN has repeatedly raised serious concerns about the unfairness of the proposed site in northwestern Ontario and the burden and risk being imposed on communities that were not the primary beneficiaries of power generated by nuclear power plants. The Draft Guidelines should be amended to ensure that this environmental justice issue is considered in the Impact Statement and in the impact assessment conducted by the review panel.

v. Impacts of the Project on Climate Change

The IAA requires consideration of the extent to which the effects of the designated project hinder or contribute to the Government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change, pursuant to s.22(1)(i) of the IAA.[86] The Draft Guidelines should be revised to make it clear that the effects are considered both as part of the analysis of the project under s.22 and as part of any decision-making on the project under s.63(b) of the IAA.[87] Baseline conditions with respect to climate change must also be included as part of the Impact Statement.

Conclusion

WTNFN appreciates the opportunity to comment on the Draft Guidelines and urges the Agency to ensure that the scope of the impact assessment reflects the highly dangerous, untested, and unprecedented nature of this project in Canada.

Yours truly,

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cc. We the Nuclear Free North

[85] Seaborn Panel, Appendix C.
[86] IAA, s. 22(1)(i)
[87] Draft Guidelines, p.70; IAA, s. 63(b).