

# What We Said:

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

This **What We Said** report is a response to NRCan's What We Heard report. It was prepared by the national Radioactive Waste Steering Committee, with representatives from civil society, public interest and Indigenous groups.

During the engagement period, we co-organized, with NRCan, a series of four well-attended online engagement sessions on radioactive waste policy issues. Our comments in this document are based on contributions made during those sessions as well as online submissions to the engagement process.

This document follows the layout of Report 2; readers can reference our comments against the NRCan report.

|   |           |
|---|-----------|
| <b>Section 1- Context.....</b>  | <b>2</b>  |
| <b>Section 2 - General Feedback .....</b>   | <b>3</b>  |
| <b>Section 3 - Specific Considerations with respect to Indigenous Views and Perspectives.....</b> | <b>5</b>  |
| <b>Section 4 - Theme: Minimization .....</b>  | <b>6</b>  |
| <b>Section 5 - Theme: Storage.....</b>  | <b>7</b>  |
| <b>Section 6 - Theme: Decommissioning.....</b>  | <b>9</b>  |
| <b>Section 7 - Theme: Disposal.....</b>   | <b>10</b> |

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

### Section 1- Context

#### Subsection Introduction

The phrase: " While all radioactive waste is being managed safely..." should be removed or modified as several intervenors described cases of radioactive waste not being managed safely, in Port Hope for example.

The statement that "the intent of the review is to ensure that the policy is based on the best available science" is interesting. Was a scientific review conducted? We haven't seen anything. Will this be available to the public? The final report or policy should include the results of the scientific review and references to scientific reports and peer-reviewed research.

#### Sub-section About this report

We are wondering why the analysis period ended on May 14, two weeks short of the deadline for submissions, May 31.

#### Next steps: what's missing from this preliminary report

Given the stated need to follow international protocols, we expect that the final report or policy document will include the sections recommended by the IAEA document, Policies and Strategies for Radioactive Waste Management, that lists the following eight "prerequisites" for policy development: Present national legal framework, Present institutional structure, Applicable international conventions, Present national policies and strategies, Spent fuel and radioactive waste inventory, Availability of resources, Situation in other countries, Involvement of interested parties

We expect the next version of the NRCan report or the draft policy document will include a full discussion of the national legal framework or present institutional structure. During engagement sessions with NRCan, our members noted the deficiencies of the *Nuclear Safety and Control Act* and the *Nuclear Fuel Waste Act* and the lack of waste regulations. Many commenters raised concerns about AECL's GoCo contract with CNL. Liability was a significant issue. None of these things are mentioned in the Preliminary report 2.

We expect that the final report will clearly state that nuclear power is a source of toxic pollution. The industry and federal government are promoting it as "clean energy," which is confusing and incorrect.

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

The absence of any discussion of inventory, classification, characterization, intermediate level waste, etc. in this preliminary report is shocking. Concerns about clearance and contamination of recycled metal streams were raised repeatedly in our sessions. And what we consider to be the most fundamentally important principle underlying all our comments - keeping waste contained and isolated from the biosphere - is nowhere to be found in either the first or second preliminary report.

## Section 2 - General Feedback

### **Sub-section Governance for radioactive waste management**

As discussed at the engagement sessions, this section should make clear that an agency independent of government and the nuclear industry is required with the sole mandate of managing radioactive pollutants. The agency will ensure that waste management target schedules are respected and reports on progress according to the money spent are made available to the public. The agency's goal will be to avoid short- and long-term social costs and risks and ensure that no undue burden is imposed on future generations.

As implied by our contributions, scientific, technical and social advisory groups, including representation by Indigenous peoples, should be created to support this agency for the sake of transparency. It is important to assess the costs of not only monitoring facilities and infrastructure but also long-term maintenance.

The new independent regulatory agency must also be independent, unlike the Canadian Nuclear Safety Commission (CNSC) that reports to the government. It is not standards that protect the public, but their application.

The report mentions in several sections the need for more research. Funding for all research related to nuclear waste should be independent. In federal terms, that means funded through the federal granting councils to ensure independent peer-review. This is not happening now. To give just one example, the CNL-Moltex research at Chalk River on nuclear waste reprocessing has provided no evidence of independent scientific review. Our concern is the lack of scientific merit for the nuclear waste research currently funded. In particular, the federal departments ISED and NRCAN have a conflict of interest when funding industry research because they also have a brief to support industrial development. Without clear guidelines that seem to not exist, this conflict contravenes research ethics standards.

## What We Said:

4

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

***Sub-section Polluter pays is a sound principle, but the polluter is the public***

As we explained in our interventions, the lack of transparency - the fact that utility ratepayers in ON, QC and NB are NOT AWARE that they are paying for this - is the core problem here. More transparency is needed to ensure that the public understands its liabilities for nuclear waste. There should be regular communications to ratepayers and the public more generally that their electricity rates include a hefty forever cost for nuclear waste. And all Canadians should be made aware of the federal transfers to pay for all the nuclear waste activities.

"Polluter pays" is a sound principle, but Canada does not penalize radioactive polluters at all. On the contrary, radioactive "polluters" are authorized to correct their own misdeeds and to make a profit in the process. The CNSC boasts of applying the polluter pays rule in a "non-prescriptive" way: Rather than imposing obligations on polluters, its "REGDOCs" invite them to design themselves the wastes facilities that suit them best. It even grants them a monopoly for the initiative: the CNSC procedures leave no room for requests from other stakeholders who could demand different management methods and safer solutions.

**Sub-section Scope of the policy should be broad**

OK.

**Sub-section International obligations are important**

OK.

**Sub-section Roles & responsibilities: Indigenous peoples and public interest groups**

OK.

**Sub-section Roles & responsibilities: other key federal government players**

OK.

**Sub-section Resourcing participation**

The need to resource groups to participate in this process is important. This section should include the example, mentioned at the roundtables, of how the Government of Sweden supports participant participation.

**Sub-section Joint engagement**

OK.

## What We Said:

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

September 1, 2021

### **Sub-section Regular policy review and evaluation**

As mentioned numerous times during the engagement sessions, there is a great need for better information and improved channels of information to Canadians about nuclear waste. The policy could include, for example, a mandate for nuclear utilities to include in all utility bills the costs related to nuclear waste management.

### **Sub-section Value of nuclear energy in the climate change era**

"All of this to emphasize that among respondents there is a lack of consensus on the overall role and value of nuclear energy. " Yes, again referencing the scientific literature here, the risks outweigh the rewards, specifically the risks that new nuclear development will be far to late to have an impact on the CO2 reduction targets, and the risks of creating new radioactive waste.

### **Sub-section Reprocessing and proliferation risks**

As mentioned at the engagement sessions, despite claims to the contrary by nuclear proponents, there is considerable evidence that reprocessing high-level waste, spent nuclear fuel, is a nuclear weapons proliferation risk that raises important international relations issues. As mentioned at the engagement sessions, commercial reprocessing of CANDU spent fuel would be a significant departure from current federal policy and should require parliamentary discussion and debate.

### ***Sub-section Politicizing the science***

Science is always political. In contrast to the implication here that the public is not aware of the science and has "quick opinions," many interventions during the engagement sessions demonstrated a high level of knowledge and expertise on nuclear waste issues.

## **Section 3 - Specific Considerations with respect to Indigenous Views and Perspectives**

It would be helpful here to state how NRCAN is ensuring feedback from Indigenous groups on this section of the report.

### **Sub-section Radioactive waste management policy in the overall legal and policy context for Indigenous rights**

The existing policies and proposals by Indigenous groups should be listed here. They were submitted to the NRCAN process and mentioned during the interventions. For example, the

## What We Said:

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

policy should name and present the complete joint declaration between the Anishinabek Nation and the Iroquois Caucus regarding the transport and disposal of radioactive pollutants.

### **Sub-section Impact on Indigenous communities and traditional territories**

Add: "and transportation routes" to the end of the sentence about geographic scope of interested parties.

### ***Sub-section Achieving and maintaining balance***

OK.

### ***Sub-section Beyond seven generations***

OK.

### **Sub-section Importance of monitoring and Indigenous involvement**

To the sentence: "Bringing Indigenous perspectives and knowledge to bear in designing such policy objectives would be helpful and insightful" add: and legally required.

### **Sub-section Social effect on Indigenous communities**

OK.

## **Section 4 - Theme: Minimization**

### **Sub-section Disagreement on the role of nuclear energy**

The sentence: "For instance, we heard that the resources and materials needed for renewables, and potential waste, is much greater than for nuclear energy" should be removed: you may have heard this, but it is demonstrably untrue.

The report needs some reference to scientific evidence in this section. For example, it should note that independent research has concluded that that SMRs cannot be positive contributors to climate action because they will take too long to develop and become operational, if indeed they will work at all. We would be pleased to supply NRCAN with the scientific literature.

The following statement should be removed because this is only wish talk not based on scientific facts: "We heard that the nuclear industry has made great strides in minimizing waste, and the emerging technology offers the promise of further improvement."

## What We Said:

7

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

### **Sub-section Questions of practicality**

Any research on waste minimization must be funded through the independent federal research granting councils, not federal government departments with a mandate to support industry that have a conflict of interest.

### **Sub-section Reuse and Recycling**

As mentioned during the engagement sessions, the real costs and risks of reprocessing (extracting plutonium from) used nuclear fuel must be assessed, including the risks of nuclear weapons proliferation.

The promotional term 'recycling' should not be used to describe reprocessing, as less than 1% of the unused fissile materials in the used fuel bundle can be used to make new fuel. The correct scientific term, reprocessing, should be used instead.

This section should state clearly that there is no scientific evidence to back industry claims that reprocessing used nuclear fuel will minimize the waste - in fact it will create new liquid waste streams that will introduce added challenges. Small modular reactors will increase the quantity and complexity of radioactive waste. The suggestion that the volume of waste will somehow reduce the need for storage is false, as these wastes will need to be stored somewhere. NRCan should not continue to perpetrate this falsehood.

## **Section 5 - Theme: Storage**

### **Sub-section Information: Waste Inventories**

As mentioned during the interventions, it is essential to have good records. Waste should be monitored and maintained in a retrievable state with the retention of records, knowledge and memory of what is in that decommissioning waste.

Present generations have the responsibility of ensuring that the needs and interests of present and future generations are fully safeguarded. By striving to maintain and provide access to records, as well as to allow knowledge to persist, we will fulfill our responsibility to enable future members of society to make knowledgeable decisions.

### **Sub-section Security and safety of storage sites**

This section should be moved to the Disposal section and should include not only security and safety of storage sites but also stewardship, monitoring and retrieval of waste.

**Comments and Feedback on Natural Resources Canada report  
*Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)***

**September 1, 2021**

Participants at the engagement sessions mentioned numerous times that radioactive waste must never be abandoned - it must be recoverable in the event of a problem or if there is a new technology to process the wastes. The monitoring of radioactive waste must be continuous, and their containers changed regularly to avoid leaks. We need more robust and longer-lasting containers.

### **Sub-section Emergency Response Preparedness**

As mentioned elsewhere, discussions of emergency response preparedness should include concerns raised about proposals to site new reactors in remote communities, especially remote Indigenous communities without road access. Obviously, emergency response plans for remote communities are a particular concern.

### ***Sub-section Storage implications on transportation***

As mentioned at the engagement sessions, the public has not been informed about the transport and the routes of nuclear wastes in Canada. There should be no transport of decommissioned waste unless there has been full public consultation and transparency about a destination for that waste, which should be a secure approved long term management facility, away from drinking water sources.

Presently, there is considerable cross-border trafficking in radioactive waste, but the main source of information is the U.S. Nuclear Regulatory Commission's ADAMS public information registry. Several public intervenors have raised this repeatedly with the CNSC, proposing a public registry for Canada, but there is no progress or even no response on that.

At the engagement sessions, we questioned the supposed integrated management of transferring almost all radioactive waste in Canada to Chalk River, as this is unacceptable. This waste will have to be moved again, either when a deep geological repository is developed or to manage it safely far from water bodies. Moving wastes to Chalk River is an unacceptable risk for the drinking water for many large cities in Ontario and Quebec.

### **Sub-section Small Modular Reactor Implications**

As mentioned during the sessions, we need extensive consultation in the communities being aggressively targeted for SMRs, including emergency response plans for communities without road access. The communities must be made aware of the specific dangers of SMRs. For example, sodium-cooled SMRs are dangerous because the sodium has high reactivity with air and water, raising risks of fire and explosion, which is dangerous because of the toxicity of the radioactivity materials that would be exposed.

## What We Said:

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

### **New sub-section Better classification and sorting of the waste**

As raised by intervenors at the engagement sessions, nuclear waste needs better classification. Until 2019 in Canada, radioactive waste was considered "low activity" if it could be handled without shielding. As soon as shielding was required, it was automatically classified as intermediate-level waste and had to be buried deep.

Under the new definition, waste is now categorized as "low activity" waste regardless of its level of radioactivity; the only condition is that CNSC accepts that it can be "eliminated" in a near surface disposal site, even if the waste must be placed in a shield package. As we said, this change is unacceptable. For example, because of this change of definition, dangerous Cobalt-60 medical sources can be disposed in armored containers in the near surface disposal facility at Chalk River. This is also why 95% of the intermediate level waste suddenly disappeared from the inventory of Chalk River. The 19,648 cubic meters in 2016 had been reduced to only 1,050 cubic meters in 2020!

### **New sub-section Prioritize long term storage for intermediate level waste**

The final report needs to highlight the problematic nature of, and the urgency to plan for, long term storage for intermediate-level waste - many participants made comments about it. This should be one of the most important aspects of this policy.

To date, nobody in Canada has proposed a plan for the management of intermediate level radioactive waste. Given that a facility for the long-term storage of intermediate level waste does not exist, there are attempts to put it in disposal facilities near the surface without proper isolation from the biosphere. Given the lack of permanent management structures and protocols for intermediate radioactive waste, the temptation to entomb in-situ is strong.

## **Section 6 - Theme: Decommissioning**

### **Sub-section Criteria for in situ decommissioning**

Because of the non-prescriptive nature of CNSC philosophy, it is impossible to propose and discuss alternative plans. Once in situ is put forward and accepted as a legitimate process, it can be the only method discussed.

As stressed at the engagement sessions, we must ban in situ decommissioning (entombment on situ) and rather respect the directives of the International Atomic Energy Agency. This applies to both current reactors and new small modular reactors. The excuse that this is not feasible or

**Comments and Feedback on Natural Resources Canada report  
Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2  
Preliminary Report on Engagement Results (February 20 – May 14, 2021)**

**September 1, 2021**

that it was not planned is unacceptable and demonstrates poor planning of radioactive waste management.

As mentioned during the sessions, immediate decommissioning should be the preferred strategy, as this avoids shifting the burden of decommissioning to future generations.

As for in situ decommissioning, it doesn't make sense to abandon nuclear waste facilities on the shores of lakes and rivers without being able to intervene if something happens like cracks and flows that can be addressed.

Small modular reactors (SMR) were supposed to be small and transportable, with their wastes repatriated. Now, most of the SMRs are exempted from federal environmental assessment and their wastes could be allowed to be left in situ. This is against the guidelines of the International Atomic Energy Agency because radioactive pollutants must be treated in a safe and environmentally acceptable manner. Only a nuclear accident could justify entombment.

### **Sub-section Legacy sites**

The report should point out that because there are no disposal facilities for intermediate level and high level waste, there is no solution for the wastes from the legacy sites.

### **Sub-section Knowledge management**

add here

### **Sub-section Planning for decommissioning**

The phrase: "This has the unintended effect of potentially obscuring the full cost of a project" should be removed as it may well be an intended consequence, to hide the full costs of the project.

Detailed decommissioning and disposal of waste should be prepared at project inception. Even for the new SMR it is not done. The costs of the waste management need to be made clear to the public.

## **Section 7 - Theme: Disposal**

### **Sub-section Stewardship, not abandonment**

This sub-section should be titled stewardship, monitoring, no abandonment and include the text on stewardship from the report.

## What We Said:

**Comments and Feedback on Natural Resources Canada report  
*Modernizing Canada's Radioactive Waste Policy - Engagement Summary Report 2*  
*Preliminary Report on Engagement Results (February 20 – May 14, 2021)***

**September 1, 2021**

### **Sub-section Site selection**

Add: It is necessary to have accurate inventories and costs to plan and select sites for waste disposal. Waste should be also sorted according to their longevity.

### **Sub-section Monitoring**

Suggest that this sub-section should be added to the first one above, as indicated.

### **Sub-section Shared definition of disposal**

We said that a successful radioactive waste management system should begin with a shared, clear definition of disposal outcomes. Today there is a lack of clear consensus on this issue, which makes designing appropriate steps to achieve disposal challenging. Some of this disagreement may be because of ambiguity in language, where “disposal” means different things to different parties, and the new policy could provide greater clarity.

### **Sub-section Retrieval of waste**

This sub-section could be merged with earlier sections that mention it.

### **Sub-section Import/export of waste**

The final report must clearly reflect the views of many intervenors who said it is essential for Canada to prohibit storing and bury radioactive waste imported from abroad. We have enough to deal with our own radioactive waste in Canada. There is no benefit to Canadians to import radioactive waste; the only benefit would be to enrich corporations. For example, Canada has been the largest supplier of medical sources of Cobalt 60 to the whole world. As such, it has agreed to recuperate used sources from all over the world. The quantity of sources returning to Canada is so enormous that 98 % of the radioactivity in the near surface disposal facility at Chalk River will be attributable to these sources. Canada's nuclear policy must also prohibit our exporters of medical isotopes from committing to re-import and bury them in Canada at the end of their useful life.

### **Sub-section Flexibility of approaches**

We do not know enough about the actual waste inventory and their projection in the future to have the flexibility and the knowledge to choose a solution.