

Date: 02 April 2022

To: The Radioactive Waste Management Policy Review & Development Team,
Natural Resources Canada (NRCan)

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Subject: Modernizing Canada's Policy for Radioactive Waste Management and
Decommissioning – Initial Draft for Public Comment

I herewith wish to use the opportunity to comment on the initial draft of the proposed new Policy on Radioactive Waste Management and Decommissioning for Canada.

Overall, I find this initial draft of the proposed new policy rather vague and incomplete. There are a number of significant technical, institutional, governance, and policy issues that the draft policy does not address with sufficient specificity, if at all. Some of these issues are flagged below, along with my own comments and suggestions.

Important issues on which the draft policy is vague or entirely silent

- **Section 1.1.: Transportation of radioactive waste** is merely mentioned, *en passant*, as a 'radioactive waste management and decommissioning activity', without any discussion of why this activity raises important policy issues or any policy provisions being offered regarding the principles that should govern the transportation of radioactive waste.

Comments & suggestions

I wish to suggest the following policy principles/provisions to govern the transportation of radioactive waste:

- **Minimizing waste transport (avoiding unnecessary transport) in view of the risks associated with radioactive waste transport;**
 - **Carefully justifying any need for radioactive waste transport;**
 - **Avoiding double-transporting radioactive waste on its way to a long-term management facility;**
 - **Avoiding transports of radioactive waste beyond the minimum distance to a site that provides appropriate conditions for secure long-term management.**
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- **Section 1.4.:** "..... The federal government ensures that responsibility for maintaining institutional controls over the very long term is assigned to an **appropriate entity** [emphasis added], and that there is continuity of responsibility over **successive entities** [emphasis added] if necessary, and, where no **appropriate entity** [emphasis added] is available, it

works with other levels of government to develop arrangements to ensure that such controls are maintained.”

Comments & suggestions

*The terms ‘appropriate entity’ and ‘successive entity’ are inappropriate (too vague) for the purposes of the modernized waste management policy. Even if it may not now be possible to identify the entities that may be able to provide the required institutional controls, **the modernized waste management policy should, at a minimum, define/specify the broad institutional characteristics and capacities that ‘entities’ would need to have to potentially qualify as the envisaged ‘appropriate entity’ or ‘successive entities’.***

- **Section 1.5:** “The federal government ensures that **the deployment of reprocessing technology in Canada** [emphasis added], which allows for the extraction of fissile material from used nuclear fuel, **is subject to policy approval by the Government of Canada** [emphasis added] to ensure that due consideration is given to all relevant factors, including ensuring the health, safety and security of people in Canada, as well as compliance with international safeguards and non-proliferation treaties, and respect for environmental considerations.”

Comments & suggestions

*Canada’s longstanding policy stance has been to disallow reprocessing of spent fuel because it would create serious nuclear security and nuclear weapons proliferation risks. Reversing this policy stance by deploying reprocessing technology appears to be primarily motivated by aspirations -- extracting plutonium from spent fuel for use within fresh reactor fuel destined for some types of new-generation small modular reactors (SMRs) – that have little to do with radioactive waste management, although reprocessing would have significant implications for waste management, given that spent fuel reprocessing would create a range of new waste streams and increase overall waste volumes. **Therefore, Section 1.5 should be reformulated to make clear that spent fuel reprocessing is not a waste management policy objective although it would have waste management ramifications, and the revised paragraph should be moved to the background section of the draft policy document to form part of the broader context for Canada’s new radioactive waste management policy.***

- **Section 1.9:** “Waste producers and owners will characterize, classify and document their radioactive waste in order to define and implement waste management and decommissioning solutions that are commensurate with their risks in both the short and long term.”

Comments & suggestions

*The emphasis of the policy objective/commitment here should not be that waste producers and owners merely characterize, classify and document their radioactive waste (in some way), but how specifically they ought to do that. Here the draft policy should emphasize that waste characterization, classification, and documentation should be done **according to common national standards, on a regular basis, and in a transparent manner, with a view to communicating this information effectively to present and future generations.***

This requires the **federal government to ensure** that such common national standards exist (are developed/updated) and are used by waste producers, owners (and facility operators), and it requires the **waste producers, owners, and facility operators to apply these standards correctly and consistently**.

- **Section 1.10:** “Waste producers and owners will decommission facilities and sites within an **appropriate timeframe** [emphasis added] to avoid transferring the responsibility to future generations, recognizing that **alternative approaches** [emphasis added] may be justified, subject to approval by the regulator.”

Comments & suggestions

This section is formulated in such a general way that it is in effect meaningless. What does “appropriate timeframe” mean? At a minimum, some indicative timeframes should be given. What is meant by “alternative approaches”? At a minimum, the two principal decommissioning alternatives (immediate decommissioning versus delayed decommissioning) should be mentioned, their respective underlying rationales summarized and contrasted, criteria for deciding in favour of one or the other provided, and references to relevant International Atomic Energy Agency (IAEA) publications given. Details might be left to a footnote.

- **Section 2.3:** “The federal government recognizes and fulfills its obligations, as a waste producer and owner, for radioactive waste management and decommissioning activities associated with historic wastes for which no entity is responsible, and legacy wastes that are generated by federal entities in the formative years of Canadian nuclear research and development.”

Comments & suggestions

*This section is vague (formulated in rather general terms), skirting around issues of how legacy wastes and sites should be decommissioned. In particular, the section does not, but should address the issue of whether or not non-operational (shut-down) legacy reactors represent “exceptional circumstances” justifying an ‘in-situ decommissioning’ (entombment) approach that is being proposed for at least two legacy reactors (NPD and Whiteshell). Canada’s approach to decommissioning legacy reactors should be based on IAEA directives/guidance as well as international policy experience and lessons learned in other countries having legacy sites and legacy reactors (USA, Russia, U.K., France, China, etc). **IAEA directives are clear: entombment is justified only in cases of severe reactor accidents. Nor is there any experience or lessons learned in other countries that would support in-situ decommissioning as an approach that has intrinsic advantages over the IAEA’s recommended full dismantling, particularly as far as health & safety considerations are concerned.***

For these reasons, the draft policy should categorically rule out (i.e. ban) in-situ decommissioning (entombment) of legacy reactors as well as other existing and new reactors.

- **Section 3.4:** “The federal government is committed to the principles whereby Canadian-generated radioactive waste must be disposed of in Canada, and radioactive waste

generated in other countries are not to be disposed of in Canada, **recognizing that exceptions may be made to allow for the repatriation of disused radioactive sources to Canada** [emphasis added]”

Comments & suggestions

This section is both inconsistent and vague in that it not only allows for “exceptions to the principles to be enshrined by the draft policy” but does not even offer any rationale for these “exceptions”.

The draft policy should be unequivocally committed to the principles that Canadian-generated waste be disposed of in Canada, and radioactive waste generated in other countries are not to be disposed of in Canada, by prohibiting the importation of any radioactive waste, while acknowledging that the management of disused radioactive sources has become a serious global problem. At the same time, the draft policy should provide for Canada to offer to assist countries that have purchased Canadian-made radioactive sources in managing them when they turn into radioactive waste because they can no longer be used, such as through provision of commercial services and technologies to help to properly dispose of the disused sources in those countries.

The need for such an unequivocally principled approach is highlighted by the recent controversy around a secretly promoted initiative for Canada to accept radioactive waste from Japan for disposal at a facility in Labrador.

Conflict of interest issues that the draft policy is silent on, but needs to address in the public interest of openness, transparency and inclusivity

- *Currently, the management of radioactive waste and the decommissioning of nuclear facilities are overseen by a government ministry (Natural Resources Canada/NRCan) whose mandate includes the promotion of civilian nuclear power and the nuclear industry in Canada. This represents a conflict of interest that needs to be addressed by the draft radioactive waste management policy.*

Canada needs an independent agency, arms-length from both government and industry, such as other countries like France have, to oversee the management of radioactive pollutants and decommissioning of nuclear facilities, in order to ensure that nuclear policy and operations do not just serve the interests of the nuclear industry, but concerns from all stakeholders are taken seriously and addressed, and that the public has better access to relevant information, among other reasons.

Overall conclusion

The first draft of the modernized radioactive waste management and decommissioning policy comes across as rather vague and unspecific and has important gaps. Significant further work is required to develop the draft policy further by going beyond generalities, putting meat on the bones, and filling gaps. I hope that my above comments and suggestions are helpful in pointing up ways in which the draft policy can be developed further.