**BRIEFING NOTE: NATURAL RESOURCES CANADA DISCUSSION PAPER ON “DECOMMISSIONING”**

As part of the review of radioactive waste policy announced by Natural Resources Canada (NRCan) in November 2020, NRCan has produced four discussion papers and created online forums for comment.

The NRCan discussion paper on ‘decommissioning” combines background information, description of current management practices (strategies) and presents current policy points. See more at [www.nuclearwastewatch.ca](http://www.nuclearwastewatch.ca) about the review and other topics.

General Comments on the Discussion Papers

* the linkages between the discussion papers are not acknowledged or identified
* the discussion papers are not placed in an overall context of radioactive waste management principles and policy objectives
* the discussion paper descriptions present a non-critical approach to current practices
* the discussion papers lack references or links to support the statements and content

Summary of NRCan’s “Decommissioning” Discussion Paper

The paper provides an extremely vague and at times misleading overview of decommissioning. As with the other discussion, it lacks references or hyperlinks to the source or reference to support statements being made, but this is perhaps even more problematic with this discussion paper, given the degree to which is creates false impressions. For example, it repeatedly refers to there being three decommissioning options: immediate decommissioning, deferred decommissioning and in-situ decommissioning, implying that this is the internationally recognized approach. In fact, the Internationally Atomic Energy Agency’s General Safety Requirements clearly set out that by IAEA standards there are two options:

* Immediate dismantling, which the IAEA identifies as the preferred option, but only in instances where there is a permanent waste facility available (so not applicable in Canada), and
* Deferred dismantling, which is the default option when there is no permanent waste facility available (such as in Canada).

The NRCan discussion paper inserts a third option, “In-situ decommissioning … in which some or all of the radioactive contaminants are disposed of in place, which may result in the creation of a waste disposal site”.

Referred to internationally as “entombment”, the IAEA Safety Standard, to which Canada has committed, states:

*Entombment, in which all or part of the facility is encased in a structurally long lived material, is not considered a decommissioning strategy and is not an option in the case of planned permanent shutdown. It may be considered a solution only under exceptional circumstances (e.g. following a severe accident).*

In a 2019 international peer review, this issue was highlighted, and Canada’s response to the [2019 IRRS Report](http://www.nuclearsafety.gc.ca/eng/resources/international-cooperation/irrs/canada-response-irrs-2019.cfm#sec6) is at odds with the Discussion Paper’s positioning of in-situ decommissioning as an acceptable strategy:

*IAEA IRRS S6: CNSC should consider revising its current and planned requirements in the area of decommissioning to align with the IAEA guidance that entombment is not considered an acceptable strategy for planned decommissioning of existing nuclear power plants (NPPs) and future nuclear facilities.*

*Canada’s response: Accepted. The CNSC’s regulatory framework is performance-based rather than prescriptive; however, the CNSC seeks alignment with international best practices.*

Overall, the discussion paper takes an overly administrative approach to the subject of decommissioning, equating the importance of decommissioning with their being a number of nuclear facilities that will retire from service in the near future, and summarizing decommissioning as “the administrative and technical actions that are taken to allow for the removal of some or all of the regulatory controls”. It goes on to define end-state objectives in entirely administrative terms, i.e. “This end-state generally falls into two categories: 1) unrestricted, where sites are released for unrestricted use, or 2) restricted, where there are some restrictions on the use of sites after decommissioning”. The paper couples waste minimization and decommissioning. Conceding that decommissioning will generate large quantities of waste it promotes “waste minimization” as the response, referencing the NRCan Discussion Paper.

**What’s Missing from the NRCan Discussion Paper on Decommissioning**

* Discussion of waste categories, classification, inventories in relationship to decommissioning options
* Analysis of shortcomings in the current decommissioning planning process, such as the absence of comprehensive descriptions of site conditions in preliminary decommissioning plans, lack of transparency
* Discussion of exposure risk, including to workers, during decommissioning phases

**Natural Resources Canada poses two questions to those commenting on the Waste Minimization paper**

|  |  |
| --- | --- |
| NRCan Discussion Questions on Decommissioning | Sample Comments in Response |
| 1. What do you feel are important policy considerations that should influence the choice of decommissioning strategies by nuclear operators and should be considered as part of Canada’s radioactive waste policy? | * Decommissioning approaches must at minimum conform to international safety standards. * Site conditions must be fully described, including a complete list of radionuclides found in soil, ground or surface water and/or involved in any radioactive decommissioning scenario * Radioactive wastes on site and projected decommissioning wastes must be fully inventoried * The list of radionuclides found on site and the inventories of radioactive wastes (on site and decommissioning wastes) must include half-lives, activities (total becquerels as well as becquerels per kilogram or per litre), mode of disintegration, radioactive progeny and target organs in human receptors * Detailed descriptions of site conditions and the waste inventories must be developed and be publicly available and peer reviewed, including by the public and Indigenous peoples, at all decommissioning stages, including in the preliminary decommissioning planning stages * Information and inventories related to decommissioning must be available and communicated to indigenous peoples and other members of the Canadian public, including in a plain language stripped of scientific symbols and abbreviations * All decommissioning projects must include a comprehensive strategy for the transmission of Records, Knowledge and Memory (RK&M) to future generations, including a detailed inventory of all specific radionuclides included in the decommissioning wastes along with relevant physical, chemical and biological properties of each |
| 2. In what ways should Canada’s policy address the setting of end-state objectives for decommissioning? | End state objectives should be set in ecological and human health terms, not administrative terms. There should be measurable objectives for ground and surface water, soil and air, and these objectives should be developed by considering the pre-development state of the site (i.e. without radioactive and toxic contamination) and the protection of human health and the environment. |

**Additional Reading**

ENGO Backgrounder on [Principles of Radioactive Waste Management](https://nuclearwastewatch.weebly.com/uploads/1/4/9/1/14913256/principles_draft-nww.pdf)

ENGO Backgrounder on [Waste Characterization and Classification](http://weebly-file/1/4/9/1/14913256/radioactive_waste_classification-brief_feb2021.pdf)

[Life after nuclear: Decommissioning power reactors](https://journals.sagepub.com/doi/full/10.1177/0096340214539111), Dr. David Lochbaum, Bulletin of Atomic Scientists

[Nuclear Hotseat May 2021](http://nuclearhotseat.com/2021/05/05/indian-point-shutdown/) Interviews with Manna Jo Green and Dr. Gordon Edwards on Nuclear Decommissioning

IAEA Safety Standards No. GSR Part 6 [Decommissioning of Facilities](https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1652web-83896570.pdf)

Visit [www.nuclearwastewatch.ca](http://www.nuclearwastewatch.ca) for additional information about the current review of Canada’s radioactive waste policy, including notices of upcoming events, comment opportunities and information to support public participation.

To read the NRCan discussion paper click [HERE](https://www.rncanengagenrcan.ca/sites/default/files/pictures/home/discussion-paper-waste-minimization-11-15-2020-eng-accessible.pdf). To comment on the NRCan discussion paper click [HERE](https://www.rncanengagenrcan.ca/en/content/forum-reduction-des-dechets)

DRAFT PREPARED BY NORTHWATCH 04 2021