

BRIEFING NOTE: NATURAL RESOURCES CANADA DISCUSSION PAPER ON “WASTE MINIMIZATION”

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 Waste Minimization combines background information, description of current management practices (strategies) and presents current policy points. See more at 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 Waste Minimization Discussion Paper

The paper begins with a purpose statement that “Radioactive waste should be minimized in terms of quantity and activity... “and a policy statement that “Radioactive waste management in Canada is based on the ‘polluter pays’ principle...”. It then states that a “key principles in International Atomic Energy Agency (IAEA) guidance on radioactive waste management is that the waste owner must minimize radioactive waste” and that “This has been incorporated by the CNSC, Canada’s nuclear regulator, into Regulatory Document REGDOC-2.11...”. It then outlines examples of three strategies for minimizing waste (reusing and recycling, preventing contamination, and processing to reduce volume). The paper then briefly describes the “waste hierarchy” without reference, and makes a claim that Canada has adopted an “internationally recognized waste management approach” without reference, before elaborating on the three strategies for minimizing waste albeit still in a very generalized manner. The final section presents a summarized version of International Atomic Energy Agency (IAEA) principles which “the IAEA states should be considered when designing and implementing a waste minimization program”:

- Keep the generation of radioactive waste to the minimum possible or practicable;
- Minimize the spread of radioactivity leading to the creation of radioactive waste as much as possible by containing it to the greatest extent possible;
- Optimize possibilities for recycle and reuse of valuable components from existing and potential waste streams;
- Minimize the amount of radioactive waste that has been created by applying adequate treatment technology.

What’s Missing from the NRCAN Discussion Paper on Waste Minimization

- Descriptions of current practices and operations in Canada that are only very generally referred to in the description of strategies but are not even explicitly identified, including incineration of low level radioactive waste, compaction, and export of radioactive wastes internationally for “processing” and the required repatriation of concentrations of those radioactive wastes
- Discussion of environmental and health effects and risks related to minimization practices, such as incineration
- Discussion of “Clearance” levels for radioactive wastes, and the relationship between clearance levels and the free release of radioactively contaminated materials into landfills and municipal water systems, including the policies and principles that seemingly allow these practices in Canada
- Policy implications of “recycling” or reprocessing of radioactive wastes, including as it relates to the potential contamination of metal streams, such as steel, and related concerns around security and proliferation in the case of recycling or reprocessing high level nuclear fuel waste
- Principles of protection of human health and the environment in relationship to preventing or mitigating the known or potential health and environmental impacts of radioactive waste reprocessing / recycling
- Linkages between this discussion paper and the decommissioning discussion paper, particularly related to clearance levels for the decommissioning of radioactive sites or clean up projects such as at Port Hope

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

NRCan Discussion Questions on Waste Minimization	Sample Comments in Response
1. What are your views on waste minimization? Should Canada continue to use the concept of the waste hierarchy?	The first principle in waste management is waste avoidance – no more production. The waste hierarchy developed for other waste materials does not transfer onto management of radioactive wastes, given the radiological risk and the radiological contamination that occurs if radioactively contaminated materials were mixed with non-contaminated materials (for example, if radioactive contaminated steel were allowed to enter the commercial steel recycling waste stream)
2. What should be the role of government, regulator and waste owners with respect to minimizing radioactive waste?	To achieve the first policy goal of waste avoidance the Government should adopt an energy policy that drives the phaseout of nuclear power and radioactive waste production. Energy companies, such as provincial utilities that currently operate nuclear reactors (i.e. radioactive waste generators) should shift in their supply options to clean energy sources that produce no wastes while generating electricity, i.e. renewables. In the interim, regulators should ensure that waste generators are carefully isolating and containing any radioactive waste generated, avoiding cross contamination and release to the environment.
3. Are there other principles, beyond those identified by the International Atomic Energy Agency, that you feel are important to consider when designing and implementing a waste minimization program?	Additional IAEA principles include protection of human health and the environment, protection of future generations, avoiding burdens on future generations, and safety and control. The IAEA has also identified relevant objectives , including transparency, security, non-proliferation, continual improvement, and long-term commitment. As with all nuclear operations, the U.N. Declaration on the Rights of Indigenous Peoples must be applied.

Additional Reading

ENGO Backgrounder on Principles of Radioactive Waste Management

[Out of Control – On Purpose: DOE’s Dispersal of Radioactive Waste into Landfills and Consumer Products](#) Nuclear Information and Resource Service, 2007

[Radionuclide Information Booklet](#) - Canadian Nuclear Safety Commission – See Part 4 which summarizes clearance and free release levels

[Clearance and Recycling of Material from Decommissioning of Nuclear Installations in Various Countries](#) 2019

[Trend of strengthening clearance regulation in Japan and \(industry\) concerns about its worldwide effects on regulations for natural and artificial radionuclides](#) 2020 Research Article

[Nuclear Reprocessing: Dangerous, Dirty, and Expensive](#), Union of Concerned Scientists

[Reprocessing Is Not the “Solution” to the Nuclear Waste Problem](#), NIRS

Visit 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](#). To comment on the NRCan discussion paper click [HERE](#)