September 12, 2016

Canadian Nuclear Safety Commission
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Review of DIS-16-03, Radioactive Waste Management and Decommissioning

The Canadian Nuclear Safety Commission (CNSC) announced on May 13, 2016 that it was accepting comments from the public on discussion paper DIS-16-03, Radioactive Waste Management and Decommissioning until September 12, 2016.

SOS Great Lakes (SOSGL), formerly known as Save Our Saugeen Shores, Inc. wishes to comment on the CNSC review of definitions, regulation, procedures, and practices of Radioactive Waste Management and Decommissioning in Canada. This review is long overdue. An improvement of current regulatory and licensing processes is of great importance to the protection of our environment, and to human health.

SOSGL is an organization opposing the deep burial of nuclear waste in the Great Lakes Basin, currently focusing on OPG's plan to construct a deep geological repository (DGR) for L&IL nuclear waste by the shore of Lake Huron. SOGGL maintains that nuclear waste should not be buried anywhere in the Great Lakes Basin due to the potential for contamination of the world's largest supply of fresh water. In spite of the risk, the Joint Review Panel (JRP) following on recommendations by OPG and the CNSC, approved the DGR plan after what we have argued was a deeply flawed review process.

Our participation in the OPG DGR EA review process involved multiple written and oral presentations. The research that we have conducted is extensive and includes expert legal and scientific opinion. Our experience at the hearings and our concerns touched on many of the aspects of Radioactive Waste Management that are at issue now, and are not adequately raised in the Discussion Paper.

SOSGL is concerned that this Discussion Paper is vague, and does not address or ignores key issues raised by the Canadian public about the safe storage or abandonment of radioactive nuclear waste. The Discussion Paper does not reflect the requirements for reform and review that are evident based on the experience gained in our engagement in the NWMO's APM process in Saugeen Shores and later as Intervenors in the public hearings for Ontario Power Generation's proposed L&ILW Deep Geological Repository.

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We are of the opinion that such a discussion must reflect the commitment of the CNSC to a more thorough evaluation of means of short and long term management than are currently reflected in DIS-16-03; that discussion must also address the holes in the current requirements of licensing of facilities, and set a framework that is fully compliant with the CEAA and other regulatory instruments that are in place to protect human health and the environment.

Comments

The final sentence of the Introduction says, "The CNSC is committed to minimizing and avoiding the creation of new requirements as a result of this process". The assumption of reduction of red tape around the licensing of radioactive waste repositories is a false start for a Discussion Paper, and on its own is objectionable, and not precautionary.

The vagueness of the Introduction to the Discussion Paper states: "Licenses are leaning towards more sophisticated methods of volume-reducing waste streams and processing methodologies to reduce the amount of waste requiring long-term management or disposal […] [The] nuclear sector is looking at new options for waste disposal."

It is unclear what these options are: does CNSC mean that that deep geological repositories for abandonment of nuclear waste will be the preferred method of reducing long-term management? Or, is this an indication that new, more sophisticated methods of storage and 'delay and decay' will be explored? There is no indication of what is implied by, "volume-reducing waste streams and processing methodologies". Does this imply that volume reduction will be achieved by better separation of LL from ILW and HLW? Or, does it mean that there will be volume reduction by further concentration of hazardous waste? And, is it implied by the introduction that "long-term management" following decommissioning of waste disposal or storage facilities would be enhanced in a perpetual care scenario as recommended by many, or that CNSC is looking for options for the government to divest itself of the responsibility to safely monitor nuclear waste sites?

As exemplified by the EIS submitted by OPG, the plans inadequately accounted for waste characterization, quantification, sound practices of evaluating alternative means and locations for radioactive waste storage, and inadequately evaluated risk according to the principles of the CEAA. Each of the failures exhibited during that hearing should be addressed in the CNSC's search, "to make it clearer for applicants how to produce license application that meet CNSC expectations. Additionally the CNSC's approach to regulating waste management will become more visible and easier for Canadians to understand".

<u>Waste Categories, Quantities and Characterization</u>

In the DGR 1 decision of May 2015, the JRP considered vague categorizations of waste and improper inventories of waste. The discussion paper does not clarify for the reader its definitions of "waste categories" or how a framework will be established to reform the current definitions. Rather, a vague reference is made to the "*waste categories as defined in CSA N292.0-14"*.

- **Recommendation:** It is imperative that the CNSC present a complete draft set of authoritative definitions of waste categories in clear format, with detailed descriptions and definitions, that are not delegated to other bodies such as the CSA.

  The OPG relied on incomplete, and inconclusive reporting on total quantities and qualities of waste to be disposed of (200,000 or 400,000 cubic meters of waste with various contradictory inventories of waste quality) in their EIS.

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- **Recommendation:** CNSC must create a framework that requires that both the accurate quality and accurate quantity of waste be required in the application for licensing of waste facilities.

Compliance with Environmental Law for Provision of Alternative Options

The OPG plan for its DGR next to Lake Huron lacked proper consideration of the requirements of full exploration of alternative means and locations as required by the CEAA and the Precautionary Principle.

- **Recommendation:** The CNSC must set a framework that requires full consideration of alternatives of means and location in compliance with the CEAA and the Precautionary Principle, to all considerations of a license application.

Using the Most Up to Date Science

The OPG did not proceed with an Underground Research Laboratory in advance of its proposal to implement its DGR at Kincardine, as is the natural first step in prevailing International Best Practice. This would have been a logical and necessary step in its assessment of the unproven sedimentary geology of its site.

- **Recommendation**: The CNSC must set a framework that requires full compliance with scientific best practices in advance of licenses for waste facilities being considered. This should include a complete and well-funded publically accessible repository of information on International Best Practices, and the successes and failures of all manner of nuclear waste facilities.

Consideration of Health and Public Safety

The OPG made assumptions on health and public safety with incomplete health data available and made further assumptions about effects of long term exposure to low doses of radiation when this information is still unknown.

- **Recommendation:** The CNSC must set a framework that requires full accounting of data relating to the potential of health effects, singly or cumulatively, that could result from the licensing of a waste facility.

Providing the Correct Facility for the Type of Waste

The OPG plan for the DGR mixes Low and Intermediate and long-lived Intermediate level nuclear waste into one repository. There is no requirement for the Low Level Waste to be stored in the manner that is described by OPG for the DGR.

- **Recommendation:** The CNSC must set a framework that requires full accounting of what is required to be disposed of or stored in the short, mid and long term to provide the most suitable waste facilities, for the appropriate waste.

Reduce, Reuse, Recycle

The OPG did not adequately consider the potential for early source reduction or the recycling of materials that could be of value, rather than abandonment. This was a critical oversight in the analysis of need for the DGR 1.

- **Recommendation**: The CNSC should encourage the integration of reduction of waste, and the safe recycling and reuse of waste. However, terminology used to describe reduce, reuse,

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and recycle is vague and unclear with regard to all levels of nuclear waste, and avoidance of the issues of persistence of radioactivity and the potential for harm of release into the environment and market place. For instance, the incineration of radioactive waste to reduce the carbon content does not justify the releases of radionuclides into the environment. The discussion paper leads one to believe that the goal of the reduce, reuse and recycle is not related to sustainability and the precautionary principle but to cost reduction and decrease in time taken to safely mitigate and remediate and to protect people and the environment.

Provision of Resource Base

It was very difficult for the public to access government information on nuclear waste management that it could use in its assessment of the OPG proposal for the DGR.

- **Recommendation:** The CNSC should establish a comprehensive and up to date repository of public documents related to success and failures, and international best practice, in radioactive waste management.

Thorough Post Closure Plans that include Perpetual Care

The OPG proposal for long term management of the DGR 1 after decommissioning was incomplete or non-existent, and was delegated to future study. This was a wholly inappropriate approach to institutional control over the mid and long term. Lack of definition of long term care and maintenance is a fundamental flaw of any proposal for a nuclear waste facility. There is a concern that the lack of regulatory framework for decommissioning of facilities such as a DGR, and ideas of 'abandonment' put the public at great risk. There is no evidence of adequate Standard of Care or Perpetual Care referenced in the Discussion Paper.

- **Recommendation:** The CNSC require a comprehensive and thorough plan for post closure for any nuclear waste facility.

Conclusion

SOS Great Lakes continues its interest in the protection of the environment and people of the Great Lakes Basin from exposure to nuclear waste through ill-considered practices of waste management, and the abandonment of radioactive nuclear waste. The Discussion paper is vague, and does not address fundamental issues that are being currently raised through questions about OPG and NWMO's proposed DGRs by the public, by scientists, and through discussion in the public hearings of 2013 and 2014 in Kincardine.

We appreciate the opportunity to comment, and look forward to being included in future with the discussion of the best regulatory framework, resource base, standards, means and practices associated with nuclear waste management in our communities.

Yours very truly,

Jill Taylor, President
SOS Great Lakes
On behalf of the Board of Directors

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