

Date: Feb 13, 2018

From: Barry Stemshorn

To: Lucia Abellan, Environmental Assessment Officer Canadian Nuclear Safety Commission

By email: cncs.ea-ee.ccsn@canada.ca

Subject line: Comments on the EIS for the Nuclear Power Demonstration Closure Project

CEAA Reference number: 80121

Comments:

Dear Ms Abellan,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Nuclear Power Demonstration Closure Project.

My comments are attached.

Yours sincerely,

Barry Stemshorn

Gatineau, Quebec

Comments on the Draft Environmental Impact Statement: *Environmental Impact Statement: Nuclear Power Demonstration Closure Project*, 64-509200-ENA-004, Revision 0, 2017
September 28 (CEA Registry Number 80121)

Distinguished members of the panel,

I am a resident of Gatineau and Clarendon Quebec who relies on the Ottawa River for potable water and recreational activities such as swimming, boating and fishing. Briefings from knowledgeable scientists and fellow residents in the watershed leave me with worrisome questions about the proposed “entombment” of the Nuclear Power Demonstration Reactor at Rolphton, Ontario, some 100-200 Km upstream of sections of the river that I frequent.

My core question is whether sufficient caution has been incorporated into the design of the proposed closure project in the face of what appear to me, as a non-expert, to be high risks of very serious consequences should a failure occur. I will not repeat the technical concerns that have been set out by experts in the field, other than to recall that they include:

- proximity to the Ottawa River (100 metres),
- presence of a major geological fault line,
- presence of long-lived radionuclides and other hazardous materials,
- anticipated deterioration over a relatively short time frame of the concrete and grouting that would be used for entombment,
- failure to heed guidance of the International Atomic Energy Agency (IAEA) that “entombment” is not a suitable decommissioning strategy, but should only be used in exceptional circumstances such as a severe accident, and
- questions about whether this proposed project is consistent with Canada’s obligations under the United Nation’s Conventions to which Canada is a party.

I also understand that better options are available and specifically recall:

- Plans by Canada’s Nuclear Waste Management Organization (NWMO) for deep geological disposal of spent nuclear fuels under an adaptive management regime that would allow reversibility or “retrievability” in the event of unforeseen circumstances, (<https://www.nwmo.ca/en/Reports>), and that uses multiple barriers including the geosphere – see: https://www.nwmo.ca/~media/Site/Files/PDFs/2015/11/16/20/36/Secure_Accessible_MultipleBarrier_Backgrounder_EN.ashx?la=en
- Finland’s world leading approach to nuclear waste management as reported by *The Economist* magazine on April 12, 2017 and available at: <https://www.economist.com/news/international/21720591-finland-shows-way-project-expected-span-100000-years-how-dispose>

As a former student of regulatory strategies I recall a senior bank regulator who dealt with the 2008 financial crisis recounting how he and his colleagues concluded that some financial institutions are simply “too big to fail”. In such cases the degree of scrutiny and the level of

precaution were increased with good reason. Is this not a similar case in which the risks and consequences warrant a particularly high degree of precaution?

Building on my core question about precaution, let me specifically ask:

1. Could the level of risk be decreased significantly by alternate strategies such as:
 - a. those identified above in Canada and Finland, and specifically why would this not be done in partnership with Canada's NWMO as it develops deep geological disposal capacity? Surely Canada's options must not be limited to properties currently owned/operated by AECL/CNL for such a significant project?
 - b. status quo pending a better solution, which I understand would allow interventions that might be required to deal with unforeseen events, and/or
 - c. other options to avoid or mitigate the afore-mentioned concerns?

2. Why have such alternatives not been considered in depth? I ask this having taken note of what strikes me as a somewhat superficial qualitative risk assessment of limited scope described in section 4.2 (pages 4-3 to 4-11). Some things that I would expect to find in such an analysis of alternatives would be:
 - a. a "gold standard" option that would be consistent with guidelines of the IAEA, comply with Canada's international treaty obligations, and provide a world class example of responsible management by Canada's nuclear sector,
 - b. consideration of the long-term impacts including eventual degradation of the "tomb" or "monolith" under the proposed option of "In-Situ Decommissioning" and interventions that might be required to retrieve the waste "entombed" under this option, and
 - c. comparison with an alternate scenario under which the waste would be stored in an engineered repository at an appropriate depth at a geologically stable site remote from a major waterway (the pictograms of the two "dismantling and removal" alternatives show only on-surface storage).

3. While more rigorous disposal alternatives such as those mentioned above may well take longer and cost more in the short term, would they not ultimately reduce the long-term financial, environmental, social and reputational liabilities of the Government of Canada? I submit that this question requires particularly careful consideration given a) the clear warnings that have been formally raised by experts about risks of the proposed "In-Situ Decommissioning" option, b) the possible failure to respect international standards and obligations, and c) the precedent that decisions in this matter may set for the eventual decommissioning of other reactors in Canada.

Let me close by citing two telling statements from afore-mentioned article in *The Economist*:

"As Markku Lehtonen, a Finnish academic at the University of Sussex, puts it, the costs are high; the benefits are about avoiding harm rather than adding value; and evaluation is not about assessing risk, but about dealing with "uncertainty, ambiguity and ignorance" over a protracted timescale." – hence the need for precaution!

and

“When visiting the Finnish repository, authorities from elsewhere, be they American, Chinese, Australian, Japanese or British, learn that safeguarding the future is not just a question of seismology, technology, sociology and cash. It is also an ethical one.”

Thank you for the opportunity to bring my concerns and questions to your attention.

Barry Stemshorn
February 13, 2018