

August 22, 2017

From: W. Turner

To: Nicole Frigault, Environmental Assessment Specialist  
Canadian Nuclear Safety Commission

By email: [cnscc.ea-ee.ccsn@canada.ca](mailto:cnscc.ea-ee.ccsn@canada.ca)

Supplementary Comment on the EIS

CEAA Reference number: 80122

Dear Ms. Frigault:

I recently became aware of a significant omission in CNL's Environmental Impact Statement, that is, "Safeguards".

Since the EIS contains a section entitled "Criticality", and the word occurs 34 times in the EIS, CNL must be taking the potential for criticality events seriously. In other words, CNL intends to dispose of fissile materials in their proposed mound.

This raises a significant issue. It is my understanding that under various treaties and agreements, Canada is obligated to facilitate IAEA Safeguards inspections at all its nuclear facilities. Thus, for the fissile wastes to be emplaced in the Mound, CNL must address these international requirements.

Therefore, I am submitting a comment that supplements my comment on "Criticality" previously submitted. This supplementary comment specifically addresses this omission.

I am aware that the deadline for submissions on the EIS has past. However, this is an important aspect of CNL's disposal proposal that must be addressed.

Please do what you can to ensure my supplementary comment is posted on the Agency Registry. If that cannot be done, please let me know what the CNSC will do to ensure CNL's proposed undertaking will meet Canada's obligations under the various Safeguards treaties and agreements.

Thank you in advance,

W. Turner  
Deep River

**Supplementary Comment on the EIS for the “Near Surface Disposal Facility at Chalk River Laboratories”**

**(CEAA Registry Number 80122)**

**Criticality, EIS, Section 6.4.4.5**

**By W. Turner (Deep River Resident)**

**A supplement to my comments with respect to Criticality, EIS Section 6.4.4.5.**

I am submitting this comment as a supplement to my Comment 149 submitted previously (See document number 97 on the Agency Registry, May 31, 2017, #119179E).

In that comment, I point out that a criticality event will require the presence of fissile isotopes in relatively large concentrations. Thus, the discussion focused on ensuring the Waste Acceptance Criteria would exclude fissile materials. My conclusion was, “The authors need to explain how fissionable materials will end up in the mound”.

This comment ignored two tables included in the EIS. These are: *Table 5.7.6-1: Bounding NSDF Project Waste Radionuclide Inventory to be placed in the ECM* and *Table 5.8.6-2: Bounding NSDF Project Waste Radionuclide Inventory to be Placed in the Engineered Containment Mound*. (Note: These tables are essentially the same.)

Several comments have been posted on the Registry that convert total isotope Bq activities given in these tables to mass. For example, see Comment by #37 by Dr. D. Winfield. The mass for U-235 given in Dr. Winfield’s comments is 3 Mg. Obviously, this quantity would trigger a Criticality Safety Assessment.

Using the same methodology used in estimating the mass of U-235, one can estimate the mass of the other isotopes. However, of particular interest is the Pu-239 isotope. The estimated mass of that isotope is 1 kg.

These quantities suggest another significant issue. Canada’s nuclear facilities are subjected to periodic IAEA Safeguards Inspections as part of international verification processes required under the various nuclear non-proliferation treaties and agreements. Part of that verification process is to confirm the total quantities of fissile materials managed at a nuclear facility. This includes substantiating the amount received at the site, the amount stored, and the amount removed from the site. It would also include the amount “disposed of”.

This leads to my supplementary comment.

I can find nothing in the EIS that addresses “Safeguards”. For example, the proponent needs to describe the provisions in the design, operation, and closure of the mound to:

- determine the inventory of fissile materials;
- ensure that the inventory does not change; and
- allow inspectors to verify the declared inventory through chemical, radiological and/or physical measurement.

All physical activities associated with the facility operations and site inspections that address Safeguards requirements must be identified. Otherwise, one cannot determine their potential environment effects in accordance with the Canadian Environmental Assessment Act. Without knowing their potential environmental effects, one cannot do an assessment.

In other words, the proponent must revise the EIS to address all aspects of Canada’s Safeguards commitments as they apply to their proposed Mound facility.