

May 3, 2017

From: Dr. David J. Winfield

To: Nicole Frigault  
Canadian Nuclear Safety Commission

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

Near Surface Disposal Facility Project – Public Comments on CNL's Draft Environmental Impact Statement

CEAA Reference number: 80122

Dear Ms. Frigault,

Please find my public comments/queries for CNSC, with respect to the proposed NSDF at Chalk River, to meet the May 17th, 2017 deadline. I attach both a pdf and word version for your convenience.

Please could you confirm satisfactory receipt.

## NSDF EIS Volume 1 Rev 0 March 2017 Questions

### 1. Table 5.7.6-1

The information provided in the table text and footnote does not explain how the total Bq activities were derived, where the original raw data came from and when, and what was the accuracy of this data. The scaling up, using expert judgment, is also not explained. Expert judgment generally involves large uncertainties, yet the claimed Bq accuracy in the table is to three significant figures. This claimed accuracy seems unjustifiable and casts doubt of the technical understanding by the table's author. The footnote statement that there is uncertainty with this data set is meaningless, unless the uncertainty is quantified, which it is not.

As the source of isotopes listed is not explained, there is no discussion as to whether the isotope list is complete and whether the list identifies only those isotopes that may be disposed of in the NSDF? There is no discussion of the intent of quoting multiple isotopes of one element. For example, does an individual isotope listing imply each isotope is considered as bounding? The bounding quantity of  $1.2 \times E13$  Bq of U-238 is equivalent to a bounding mass of **1000 Mg** of U-238 and  $2.5 \times E11$  Bq of U-235 implies a bounding mass of **3 Mg** of U-235. In this example the 235/238 ratio might perhaps simply be the ratio expected from a depleted uranium sample comprising 0.3% of U-235? Without any explanation, each isotope could logically, but misleadingly, be taken as an individual isotope bounding inventory which, for U-235, in particular would give a misleading impression.

More importantly, as the isotope listing and scale up process is not explained, the question then arises that, is a bounding limit of 1000 Mg of uranium in a near-surface disposal facility a meaningful limit, when presumably only trace/minor quantities should/might be in any one waste package? Waste Acceptance Criteria should presumably rule out very large uranium quantities, 1000 Mg certainly, being placed in the ECM? The Waste Acceptance Criteria discussion in the EIS, which should be linked to the bounding isotope limits, did not seem to provide any clarification.

### 2. Geo-membrane.

The EIS provided no references or analysis or accelerated life testing data that could be found to support the claim it would last for 500 years, other than repeating tediously, no less than 16 times in the report, exactly the same sentences saying it would do a good job. There is no information on whether the membrane can be inspected in situ in any way. If inspection is not feasible then how is the claim of a 500-year lifetime to be demonstrated, as actual usage experience with HDPE geo-membranes appears, from the literature, to be only about 25 years?

There are many similar multiple repeats of statements in this report, which should be removed or consolidated for clarity.

### **3. Executive Summary.**

The concluding statement .... "*Overall, it is CNL's conclusion that with the identified mitigation measures, the implementation of the NSDF Project is not likely to result.....*" does not appear to be appropriate in a report by Golder Associates, particularly as I could find no reference to justify this in the EIS text. It should presumably be Golder Associates stating their own conclusions and providing the appropriate references in the text to justify.

The report cover, last page and the Golder logo throughout clearly indicates the report is prepared by GA. The CNL logo also being on the first page but with no acceptance by, review by, or approval by, information provided it is not at all clear of the official status of the report with regard to CNL?