Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 22-H7.21

File / dossier : 6.01.07
Date: 2022-03-29
Edocs: 6756784

Oral presentation

Written submission from Erwin Dreessen

Exposé oral

Mémoire d’ Erwin Dreessen

In the Matter of the

À l’égard des

Canadian Nuclear Laboratories (CNL)

Laboratoires Nucléaires Canadiens (LNC)

Application from the CNL to amend its Chalk River Laboratories site licence to authorize the construction of a near surface disposal facility

Demande des LNC visant à modifier le permis du site des Laboratoires de Chalk River pour autoriser la construction d’une installation de gestion des déchets près de la surface

Commission Public Hearing
Part 2

Audience publique de la Commission
Partie 2

May and June 2022

Mai et juin 2022

Canada

CNSC Hearing on the NSDF, Phase 2

Note: All page references are to the PDF pages of document CMD 22-H7 (the staff report for February 22, which includes the EAR) or of the WAC document.

Re Cobalt (ref. WAC, pp. 21-41)

Table 4 sets a concentration limit of 1,000 Bq/g for long-lived βϒ emitting radionuclides in non-leachate controlled packaged waste and 10,000 Bq/g for leachate controlled waste. (Cobalt-60, with a half-life of 5.27 years, must be considered long-lived as it is more than the half-life of Cs-137.

Yet, according to Table 13, Cobalt-60 would be present with an average of 94,700 Bq/g at placement and 15,300 Bq/g at closure. I.e., these maximum allowed concentrations would be considerably higher that the set limits.

In light of the set limits, why would such high concentrations of Cobalt-60 be allowed?

Re surface water (ref. EAR, pp. 236-246)

1.
According to modelling results, during operations and post-treatment, surface water at various locations would contain ten elements where the maximum range exceeds the 2019 "target" (which I understand to mean "maximum allowable") concentration set by Health Canada for Canadian Drinking Water Quality. This includes Aluminum, Phosphorous, Copper and Lead expected to be found in the Ottawa River.

Except for Hardness and Sulphate, all these post-treatment exceedences are already observed in the baseline data (Table 6.1). Nonetheless, post-treatment concentrations are expected to be worse than baseline for 28 of 39 elements.

Staff concludes (p. 241): "Where the maximum range of modelled surface water concentration results exceed effluent discharge targets, any incremental change in concentration to the Perch Creek and Perch Lake watershed from the NSDF operation are not expected to be measurable in the Ottawa River and the downstream environment."

This raises three issues:

a- Staff has not demonstrated that the increase in concentrations is not measurable.
b- The exceedance of Aluminum, Phosphorous, Copper and Lead in the Ottawa River appears not to be taken seriously.
c- Why would CNL not be tasked with cleaning up the effluent, even if it is the result of legacy Chalk River operations? Who else will do it?

2.
Table 6.1 lists just five radionuclides. In contrast, Table 13 of the Waste Acceptance Criteria document lists thirty radionuclides that would be licensed to go into the mound. Why the discrepancy? If it is because none of the missing radionuclides are expected to show up in surface water, what is the basis for this assumption?

./..

./..

3.
The discussion on surface water resources moves from modelling results during the 50 years of operations to "after the end of the 300-year institutional control period." Why is there no discussion of effluent during the 30-year closure and 300-year institutional control period?

4.
Finally, I request that the Commission require of CNL to make all results of monitoring of surface and groundwater publicly available on a timely basis.

Erwin Dreessen, Ph.D.
March 29, 2022