



Oral presentation

Written submission from Gillian Walker

In the Matter of the

Canadian Nuclear Laboratories (CNL)

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

Commission Public Hearing Part 2

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Exposé oral

Mémoire de Gillian Walker

À l'égard des

Laboratoires Nucléaires Canadiens (LNC)

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

Audience publique de la Commission Partie 2

Mai et juin 2022

Canadian Nuclear Laboratories' Application to Amend Chalk River Site Licence for Construction of a Near Surface Disposal Facility

Submitted by: Gillian Walker

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Summary

The Canadian Nuclear Laboratories' proposed construction of a near surface disposal facility (NSDF) at Chalk River Laboratories raises serious environmental concerns.

The CNSC is required to contemplate other physical activities associated with the NSDF Project and their environmental effects pursuant to section 19(1)(a) of CEAA 2012. The current application and Environmental Assessment (EA) before the Canadian Nuclear Safety Commission (CNSC):

- a) fail to consider waste consolidation from other CNL sites, including management, storage, and disposal of consolidated waste;
- b) fail to consider cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out;
- c) fail to consider activities and operations relating to the decommissioning at other CNL-operated sites and management of the resulting off-site waste at CRL; and
- d) fail to consider the management of waste generated during the operation and closure phases of the NSDF Project, including decommissioning of support facilities, the Wastewater Treatment Plan (WWTP) and Equalization Tanks.

The CNSC staff's failure to contemplate waste consolidation and management activities in conducting the EA renders its conclusions and recommendations incomplete. A licensing decision delivered by the CNSC that does not account for these central omissions would be unreasonable. The Commission would likely not be able to justify failing to examine these factual considerations in its own decision on the likelihood of significant adverse environmental effects caused by the NSDF.

A. The CNSC is required to consider the NSDF Project's waste consolidation activities pursuant to section 19(1)(a) of CEAA 2012.

1. The CNSC's Environmental Assessment (EA) Report of the NSDF Project fails to give adequate consideration to the consolidation of radioactive waste from multiple Canadian Nuclear Laboratories-operated sites at Chalk River Laboratories (CRL) for (a) indeterminate

storage of intermediate-level radioactive waste (ILW) and high-level waste (HLW); and (b) disposal of low-level waste (LLW) in the NSDF mound.

2. Canadian Nuclear Laboratories (CNL) proposes the construction, operation, and eventual decommissioning of the NSDF for the disposal of solid, low-level radioactive waste at the CRL site in Renfrew County. The EA Report states that the purpose of the NSDF Project (the Project) is to “provide the permanent disposal of current and future low-level radioactive waste at the CRL site, **as well as a small percentage of waste volume from off-site locations,**” [emphasis added].

3. While the “small percentage” of waste volume from off-site locations is undefined in the EA Report, the project’s purposes and proposed activities suggest that the waste planned for consolidation from other CNL sites and disposal at the NSDF will be more than minimal. The NSDF *Safety Case* (p. 22) states that 5% of the LLW would come from other CNL-operated sites such as the Whiteshell Laboratories (WL) in Manitoba, and another 5% from “other Canadian sources.” These “other Canadian sources” include “Canadian off-site organizations such as isotope users, isotope manufactures, hospitals, government agencies, industrial plants and commercial radioactive waste brokerage firms” (*Safety Case*, p. 28). **The EA’s omission of details regarding the classification, characterization, verification, acceptance of and activities related to off-site waste to be consolidated from CNL-operated sites and other sources fails to meet the requirements of an EA pursuant to section 19(1)(a) of CEAA 2012.** The CNSC must consider and address this failure in the conduct and conclusions of the EA and related environmental protection impacts.

4. The EA should have addressed management, storage, and disposal of consolidated waste. The CNSC is required to contemplate other physical activities associated with the NSDF Project and their environmental effects pursuant to section 19(1)(a) of *CEAA 2012*. The CNSC’s “Decision on the Scope of Environmental Assessments for Three Proposed Projects at Existing Canadian Nuclear Laboratories’ Facilities” (2017), does not include the decommissioning of off-site CNL-operated facilities and consolidation of off-site wastes at CRL (para 23). CNSC defined the scope of the Project as a disposal facility at which approximately 1 million m³ of radioactive waste will be emplaced in an engineered cellular mound built at near-surface level. The Project scope also referenced a wastewater treatment plant and supporting infrastructure. However, both the scoping decision and the EA acknowledge that the CNSC is required to consider the factors enumerated under section 19(1) of *CEAA 2012*.

5. Section 19(1)(a) of CEAA 2012 requires Environmental Assessments to take into account:

(a) “...any cumulative environmental effects that are likely to result from the designated project in combination with other physical activities that have been or will be carried out.”

CNL’s plans and the Project’s purpose of decommissioning multiple facilities and consolidating off-site radioactive waste for storage and disposal at CRL are physical activities that will be

carried out within the designated NSDF Project. **The CNSC's failure to consider these activities and their environmental effects, as demonstrated in the following submissions, violates their obligation pursuant to section 19(1)(a) and is unreasonable.**

6. The Project's construction and waste disposal operations will be completed in a two-phased approach. Upon completion of both Phases, the mound will consist of 10 waste disposal cells holding up to 1,000,000 cubic m³ of low-level radioactive waste. Phase 1, which is planned for completion within three years of CNSC's licensing approval, will complete the construction of the first 6 Engineered Containment Mound (ECM) cells and disposal of up to 525,000 m³ to accommodate waste currently in storage and generated within the next 25 years. Phase 1 waste disposal activities are anticipated to "enable decommissioning and environmental remediation activities at CRL and other CNL sites." The construction of the remaining 4 ECM cells during Phase 2 will accommodate an additional 475,000 m³ capacity and will continue to accommodate the waste generated from future activities at the CRL site and other CNL facilities.

7. Consolidation of wastes from other CNL sites for disposal in the NSDF is a project activity planned for both phases. Decommissioning and environmental remediation operations during Phase 1 will likely generate significant amounts of waste from other CNL sites. Waste from future activity at these sites will also be disposed of at CRL. The decommissioning and environmental remediation of several CNL sites is a central component of the overall NSDF project. The only proposed solution for the disposal of waste generated from these activities is the NSDF mound. Thus, the volume of waste that will be consolidated at the NSDF (mound) originating from other CNL-operated facilities will likely be significant.

8. Moreover, the EA Report identifies that both phases of the NSDF's waste disposal operations will accommodate "a small percentage from Canadian hospitals and universities." The characterization of this "small percentage" of commercial wastes in the *Safety Case* also includes "isotope users, isotope manufactures, industrial plants and commercial radioactive waste brokerage firms" and further suggests that the volume of the latter will be more than minimal.

9. CNL's Integrated Waste Strategy (IWS) outlines CNL's strategy for the management of waste across CNL-operated facilities and its program for the decommissioning of these facilities. Construction of the NSDF at CRL for the disposal of CNL-managed LLW is one of seven enumerated components of the CNL's IWS. ILW and HLW are also destined for the CRL site for storage until final options and plans for final disposal become available.

10. The IWS details seven CNL-operated sites requiring management of waste as of October 2018. Decommissioning is underway or planned for the near future at CRL, Whiteshell Laboratories (WL), Douglas Point (DP) and Gentilly-1 (G-1). CNL's baseline strategy for solid LLW generated from these decommissioning activities is to "segregate where practical, process as required, and place in [interim] storage until the proposed NSDF becomes available." In addition to the LLW from these three CNL-operated sites intended for disposal in the NSDF

mound, ILW and HLW will be consolidated at CRL until an appropriate disposal facility is proposed and becomes available.

11. Despite these confirmed plans for consolidation of LLW, ILW, and HLW from WL, DP, and G-1 for processing and storage at CRL, and the disposal of LLW from these sites in the NSDF mound, the EA does not consider any activities and operations relating to the decommissioning at other CNL-operated sites and management of the resulting off-site waste at CRL. Under the Purpose of the Project (section 4.1), the EA Report briefly refers to “a small percentage of waste volume from off-site locations” that will be permanently disposed of under the NSDF Project. However, decommissioning of other CNL-operated sites and subsequent consolidation and disposal of resulting LLW is not mentioned under the Project Components (section 3.2) and Project Activities (section 3.3) sections of the EA Report.

12. Moreover, the EA fails to consider the management of waste generated during the closure phase of the NSDF Project, which includes decommissioning of support facilities, the Wastewater Treatment Plan (WWTP) and Equalization Tanks. Section 3.2 of the EA Report outlines the five main NSDF Project Components, one of which is the Management of Generated Waste. Under this component, the Report states that all wastes arising from the “construction, operation, and closure phases of the NSDF Project will be managed according to CNL’s Waste Management Program.” However, the description of Project Activities under each of these phases at Section 3.3 excludes any mention of how wastes generated by the NSDF support facilities during the operation closure phases will be managed. In particular, the NSDF Wastewater Treatment Plan (WWTP) and Equalization Tanks will generate significant amounts of radioactive waste, both during operations (e.g., ion exchange resins) and decommissioning. According to the *Safety Case* (p. 481), “Decommissioning of the WWTP and Equalization Tanks will be performed after the ECM LCS [Engineered Containment Mound Leachate Collection System] is decommissioned.” This means that decommissioning waste from the NSDF project cannot be placed in the NSDF mound itself. The EA Report omits any consideration of the management of wastes generated by NSDF support facilities during the operations and closure phases of the NSDF project.

B. The Commission’s decision must contemplate the EA’s omission of waste consolidation activities.

13. The CNSC staff’s failure to contemplate waste consolidation and management activities in conducting the EA renders its conclusions and recommendations incomplete. The technical analyses of Predicted Changes to the Environment (EA Section 6.0) and Predicted Effects on Valued Components (EA Section 7.0) are based on the NSDF Project Activities identified in Section 3.3. As stated above, activities related to waste management from (a) the decommissioning of other CNL-operated sites and (b) the decommissioning of NSDF support facilities such as the Wastewater Treatment Plant are not accounted for under the NSDF Project Activities. **Consequently, in considering the EA Report’s recommendations, a licensing**

decision delivered by the CNSC that does not account for these central omissions would be unreasonable.

14. Before assessing reasonableness, the Supreme Court in *Vavilov* provides that alleged shortcomings must be “sufficiently central or significant,” rather than “merely superficial or peripheral” to render a decision unreasonable.¹ **As detailed in paras 4-9 above, the decommissioning of three CNL-operated facilities and management, storage, and disposal of the waste generated at CRL are key activities of the NSDF Project that were omitted from the EA.** Paras 4-9 demonstrate that decommissioning of CNL facilities is a central purpose of the NSDF project and that the volume of off-site waste consolidated at CRL is likely to be significant. Thus, failing to address the EA’s error of excluding waste consolidation activities would constitute a serious shortcoming in the CNSC’s reasoning process and decision.

15. Under the standard of reasonableness articulated in *Vavilov*, a reasonable decision is (1) based on internally coherent reasoning, and (2) justified in context of the legal and factual constraints. Should the Commission fail to remedy the EA’s omission, its licensing decision based on the Report’s recommendations would be unjustified given the legal and factual context of the activities related to waste consolidation from CNL-operated sites at CRL. Particularly, the Commission cannot justify failing to examine the factual considerations put before it during the submission of the parties and intervenors at the Public Hearing. The court in *Vavilov* provides that justification and transparency, cited as hallmarks of reasonableness, require the decision-maker reasoning process and findings to “meaningfully account for the central issues and concerns raised by the parties,” to demonstrate alertness and sensitivity to the matter at issue. **Thus, in addressing the EA’s failure to consider off-site waste management arising from decommissioning activities central to the NSDF Project, the Commission will likely not be able to justify failing to examine these factual considerations in its own decision on the likelihood of significant adverse environmental effects caused by the NSDF.**

¹ *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65.