Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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Oral presentation

Written submission from Lynn Jones

Exposé oral

Mémoire de Lynn Jones

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

Summary of Comments for an Oral Intervention on the Application by CNL for an amendment to the CRL site license to allow construction of the NSDF by Lynn Jones, Ottawa, Ontario

1. The proposed site is unsuitable for a dump of any kind. The site is less than one kilometre from the Ottawa River which forms the border between Ontario and Quebec. The river is a drinking water source for millions of Canadians. After passing the Chalk River Laboratories, it flows downstream through Ottawa-Gatineau, past Parliament Hill, and on to Montreal. The site is tornado and earthquake prone; the Ottawa River itself is a major fault line. The site is partly surrounded by wetlands, the underlying bedrock is porous and fractured and the water table is very close to the surface.

2. The mound would contain hundreds of radioactive materials, dozens of hazardous chemicals and tonnes of heavy metals. Radioactive materials destined for the dump include tritium, carbon-14, strontium-90, four types of plutonium (one of the most dangerous radioactive materials if inhaled or ingested), and up to 80 tonnes of uranium. Twenty-five out of the 31 radionuclides listed in the reference inventory for the mound are long-lived. This suggests the dump would remain dangerously radioactive for 100,000 years.

A very large quantity of cobalt-60 in the dump would give off so much intense gamma radiation that workers must use lead shielding to avoid dangerous radiation exposures. The International Atomic Energy Agency says high-activity cobalt-60 is “intermediate-level waste” and must be stored underground.

Dioxin, PCBs, asbestos, mercury, up to 13 tonnes of arsenic and hundreds of tonnes of lead would go into the dump. It would also contain thousands of tonnes of copper and iron and 33 tonnes of aluminum, tempting scavengers to dig into the mound after closure.

3. The mound would leak radioactive and hazardous contaminants into the Ottawa River during operation and after closure. Many ways the mound would leak are described in the environmental impact statement. The mound is expected to eventually disintegrate in a process referred to as “normal evolution.”

4. There is no safe level of exposure to the radiation that would leak into the Ottawa River from the Chalk River mound. All of the escaping radioactive materials would increase risks of birth defects, genetic damage, cancer and other chronic diseases. The International Atomic Energy Agency says radioactive wastes must be carefully stored out of the biosphere, not in an above-ground mound.

5. International safety standards do not allow landfills to be used for disposal of low level radioactive waste. The International Atomic Energy Agency says that only Very Low Level Radioactive Waste (VLLW) can be put in an above-ground landfill-type facility. Canada would be shirking its international obligations as a member state of the IAEA and a signatory to an international nuclear waste treaty if it allowed this dump to be licensed.

6. The giant Chalk River mound would not reduce Canada's $16 billion federal radioactive waste liability and could in fact increase them. The giant pile of leaking radioactive waste would be difficult to remediate. Remediation costs could exceed those of managing the wastes had they not been put in the mound.

It surprises me that CNSC staff have concluded that the dump will not have any adverse effects that can't be mitigated. This seems like a strange thing to say, given that a 105-page document called the "consolidated commitments list" contains 856 promises to mitigate adverse effects of the project. Such a large number of commitments is not likely to be enforceable and the language in many of the commitments is vague and weak. Even if enforcement of all the 856 commitments was possible, there is nothing the proponent could do do mitigate the fact that much of the waste destined for the mound will remain hazardous and radioactive for more than 100,000 years, while the mound itself will only last 400 years in the best case scenario before it degrades and disintegrates in a process referred to as "normal evolution." This is not acceptable. There is no way that a responsible country would do something like this with these kinds of wastes that will be hazardous to all life on earth for 20 times longer than recorded human history.

I would remind Commissioners of their mandate under the Nuclear Safety and Control Act to protect Canadians and the environment from the harmful effects of radioactive materials and ionizing radiation produced by the nuclear industry. To uphold this mandate you must refuse to grant the license amendment and prevent the construction of the NSDF.