Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 22-H7.69

File / dossier : 6.01.07
Date: 2022-04-10
Edocs: 6757743

Oral presentation

Written submission from the Pontiac Environment Protection

Exposé oral

Mémoire de la Protection environnementale de Pontiac

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

Submission to the Canadian Nuclear Safety Commission on the Licensing Process for Canadian Nuclear Laboratory's proposed Near Surface Disposal Facility at Chalk River

by Pontiac Environment Protection

April 11, 2022

This submission is made on behalf of the Pontiac Environment Protection (PEP). PEP is a volunteer-based organization that works to fulfill its Vision and Mission to promote the conservation, protection and restoration of the natural environment, and the sustainable use of natural resources. Since 1978 (PEP) has worked in the MRC Pontiac and area to raise awareness of environmental concerns, promote sustainable living and business practices, and encourage conservation. The proposed Near Surface Disposal Facility (NSDF) for nuclear waste at Chalk River is a project of high concern for PEP. While recognizing that the safe storage of nuclear waste is an immediate and pressing issue, PEP takes the position that it must be done with the utmost respect and adherence to best practices and international standards to ensure the safety of future generations and a healthy environment. PEP also urges the Canadian Nuclear Safety Commission (CNSC) to respect, in spirit and letter, the requirements of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).[1]

This submission draws upon standards of the International Atomic Energy Agency (IAEA) and findings of the Supreme Court of Canada related to administrative law decisions made by Boards and Commissions such as the CNSC, as outlined in *Canada (Minister of Citizenship and Immigration) v. Vavilov*[2].

PEP urges the CNSC to deny the license for the proposed NSDF and require the proponent to bring forward a project in full compliance with all international guidelines. Until this is done, it would be unreasonable for Canadian Nuclear Laboratories (CNL) and the CNSC to

[1] https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf
[2] https://decisions.scc-csc.ca/scc-csc/scc-csc/en/item/18078/index.do

assert that the proposed NSDF is unlikely to cause any significant harm to human health and the environment and unreasonable to license the project

It is our view that the proposed Chalk River Near Surface Disposal Facility fails to meet the International Atomic Energy Agency's Safety Standards for the Disposal of Radioactive Waste[3] and to satisfy provisions of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)[4]. It thereby fails to fulfill commitments recognized in Canadian law.

The International Atomic Energy Agency (IAEA) Safety Standards set out recommendations to ensure nuclear safety for the environment and citizens around the world[5]. Canada ratified the IAEA statute in 1957 with the aim to harmonize the global standard of safety through "an open and transparent process for gathering, integrating and sharing the knowledge and experience gained from the use of technologies and from the application of the Safety Standards themselves"[6].

The Supreme Court of Canada established a new regime for international legal considerations in the case of *Minister of Citizenship and Immigration v. Vavilov*[7]. Vavilov requires administrative decision makers to take an "interpretive presumption of conformity"[8] when it comes to applying international law to Canadian decisions.

The proposed NSDF fails to meet international obligations set out in the IAEA Safety Standards, and thus, in our view, violates the fundamental principle established in *Vavilov*. The *Nuclear Safety and Control Act* of 2000 (NSCA) establishes the Canadian Nuclear Safety Commission (CNSC) as the regulatory body responsible to oversee the use of nuclear energy and to ensure compliance with the NSCA[9]. The NSCA delegates a high level of decision-making responsibility to the CNSC. Under their management, the CNSC is responsible for "the use, possession and storage of all

[3] https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1449_web.pdf
[4] https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf
[5] https://www.iaea.org/resources/safety-standards
[6] Ibid
[7] Canada (Minister of Citizenship and Immigration) v. Vavilov, 2019 SCC 65 (CanLII)
[8] https://gibvanert.com/2020/01/06/international-law-in-judicial-review-after-vavilov/
[9] https://concernedcitizens.net/2019/11/30/environmental-petition-nuclear-governance-problems-in-canada/

nuclear substances in Canada"[10]. Under their mandate, the CNSC must assess and regulate the risks associated with "the development, production and use of nuclear energy and the production, possession and use of nuclear substances"[11] to a "reasonable level" that is consistent with international obligations[7].

The conclusions in the Environmental Assessment Report prepared by CNSC staff on what constitutes a "reasonable level" of exposure to ionizing radiation are inconsistent with the IAEA Safety Standards, as set out in the following paragraphs.

Serious flaws and omissions in the proposed NSDF, in the Environmental Assessment of the proposed NSDF, and in Staff recommendations

First, the Environmental Assessment fails to consider long-lived radionuclides in their report. The characteristics of radioactive waste are essential in determining strategies for their disposal, according to the IAEA[12]. According to section 1.6 of the IAEA safety standards, the preferred strategy for the management of all radioactive waste is to contain it (i.e. to confine the radionuclides to within the waste matrix, the packaging and the disposal facility) and to isolate it from the accessible biosphere.[13]

Second, **Commission Member Document (CMD) 22-H7 fails to note deficiencies in the proponent's siting process**. IAEA Specific Safety Guide SSG-29, *Near Surface Disposal Facilities for Radioactive Waste*, provides guidance for meeting requirement 15 (Site characterization for a disposal facility) of IAEA Safety Standard SSR-5.[14] SSG-29 details four stages that "should be recognized" in the siting process for a radioactive waste disposal facility.[15] The proponent's convenience, or proximity of a candidate site to where the waste is currently (temporarily) stored, and the consequent savings in costs of transportation, are not considerations consistent with the regulator's role to ensure the protection of environmental and human health. If

[10] http://nuclearsafety.gc.ca/eng/resources/radiation/introduction-to-radiation/cnscs-role.cfm
[11] *Nuclear Fuel Waste Act.* Justice Laws Website. https://laws-lois.justice.gc.ca/eng/acts/N-27.7/, article 3
[12] https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1449_web.pdf, page 4
[13] https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1449_web.pdf
[14] https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1449_web.pdf, page 35
[15] https://www-pub.iaea.org/MTCD/publications/PDF/Pub1637_web.pdf, page 83

these deficiencies are overlooked, the CNSC's regulatory oversight function is significantly circumscribed or even lost in favour of accepting the interests of the proponent in convenience and cost savings over conformity with international standards established with safety in mind for the development and siting of a NSDF. It is incomprehensible, to us, that the CNSC and its staff could consider amassing tonnes of low-level *and* intermediate level waste in a NSDF exposed to the elements (rain & snow, high winds, and more extreme weather events predicted with global warming), in a location which is hydro- and geologically inappropriate for the management of long-lived toxic waste, notwithstanding CNL's belief that lowering the ground water just below the site, along with re-sloping a portion of it, will suffice. IAEA Safety Guide SSG-29 says that "ingress of water into the facility towards the waste and the migration of radionuclides from the waste to the biosphere should be prevented or limited to the extent possible" and lists "Disturbance of public water supplies" as an "adverse effect that a near surface disposal system may have on the environment."[16] A near surface disposal facility should not be located near important bodies of water, and certainly not on seismic rock and fault lines with high groundwater levels, so proximate to wetlands, a creek and lake which flow directly into the Ottawa River, the source of drinking water for millions of Canadians.

For these reasons, the site at Chalk River is not a "host geological formation or environment and site" which "optimizes protection and safety**".**[17] The EA report fails to address these inherently unfavourable conditions to the site selection process in favour of secondary considerations, even though the Standards suggest that a site need first be identified which provides "favourable conditions for the isolation of the waste from the accessible biosphere and the preservation of the engineered barriers (e.g. low groundwater flow rates and a favourable geochemical environment over the long term)". Put another way, the EA's assessment of the NSDF facility design submitted by CNL as suitable cannot be used to avoid this critical first step in the assessment of "favourable conditions" for site selection in the overall process.

Third, the report prepared by the CNSC fails to assess the need for alternative disposal facilities which would contain the wastes more effectively than an NSDF, most notably

[16] https://www-pub.iaea.org/MTCD/publications/PDF/Pub1637_web.pdf, pages 23 and 96
[17] Appendix, IAEA SSR-5 (Assurance of Compliance with the safety objective and criteria, A.2)

underground facilities less susceptible to weather events. The IAEA Safety Standards themselves warn that a "disposal facility at or near the surface makes it susceptible to processes and events that will degrade its containment and isolation capacity over much shorter periods of time"[18]. SSR-5 Requirement 9 for the isolation of radioactive waste, requires that the chosen disposal facility be "sited, designed and operated to provide features that are *aimed at isolation of the radioactive waste* from people and from the accessible biosphere" with consideration "given to both the natural evolution of the disposal system and events causing disturbance of the facility." The standard (at 3.43) further states: "For near surface facilities, isolation has to be provided *by the location* and the design of the disposal facility and by operational and institutional controls" (our emphasis). Instead, the report omits any assessment of the safety concerns associated with the Chalk River location and those factors which militate against its selection for a waste disposal facility such as its natural slope, groundwater levels, geological formation and activity, and flow towards the Ottawa River.

Fourth, inadequate information about and consideration of the characteristics and quantities of the wastes that would go into the mound -- particularly stored legacy wastes from 75 years of federal nuclear research -- directly violates reg. 3(1) of the NSCA to provide "the name, quantity, form, origin and volume of any radioactive waste or hazardous waste" to be included in the facility. The IAEA Safety Standards for Disposal of Radioactive Waste (Requirement 20) also state that "waste intended for disposal has to be characterized to provide sufficient information to ensure compliance with waste acceptance requirements and criteria, with arrangements put in place to verify that the waste and waste packages received for disposal comply with these requirements" as part of a Quality control system to be "achieved mainly on the basis of records, preconditioning testing (e.g. of containers) and control of the conditioning process."[19]

Fifth, the proposed technology does not conform to the standards set out by the IAEA for Intermediate Level Waste (ILW) or Low-Level Waste (LLW). CNL plans to include these in the NSDF even though IAEA standards (General Safety Guide GSG-1, *Classification of Radioactive* Waste) specifically restrict the use of near surface landfill type facilities such as the proposed

[18] https://www-pub.iaea.org/MTCD/publications/PDF/Pub1637_web.pdf, page 14 (4.7)
[19] https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1449_web.pdf

NSDF to very low-level radioactive waste only.[20] This is critical, as the NSDF, even if safely sited elsewhere, would not be suitable for long-lived radioactive materials; the facility would not allow the radioactive inventory intended for inclusion by CNL to "decay at an internationally accepted level within the design life of the facility in order to allow release from regulatory oversight"[21].

Sixth, there are discrepancies between the type of waste reported to go in the dump ("only low-level waste") and the actual waste that would be disposed of. The AECL employee formerly in charge of the waste inventory record keeping system has provided a detailed submission concerning historic waste records that document the presence of ILW in the waste currently stored on site at Chalk River and destined for the NSDF.[22]International safety standards (IAEA SSR-5) require that the operator of a disposal facility maintain information and records until responsibility for the disposal facility is passed on to another organization. Appropriate record-keeping requirements for all the materials and types of waste to be amassed in the mound (i.e. origin, form, volume etc.) are not being adopted by the CNSC to set the regulatory standards for the proposed NSDF.

Seventh, International safety standards (IAEA SSR-5) prohibit reliance on institutional controls for extended periods of time. SSR-5 adds that institutional controls cannot be the "main component of safety." Yet CMD 22-H7 refers to an "Institutional Control (IC) Period of 300 years" and a "Post-Institutional Control Period starting at year 2400" that "continues indefinitely, subject to either federal or provincial regulatory control."

Finally, and of fundamental importance, the Chalk River NSDF Project violates the free, prior and informed consent provisions of the United Nationals Declaration on the Rights of Indigenous Peoples (UNDRIP).

UNDRIP is a mechanism for recognizing self-determination of Indigenous peoples.[23] Article 31(1) of the UNDRIP recognizes that "Indigenous peoples have the right to determine and develop

[20] https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1419_web.pdf, page 35
[21] Ibid page 3
[22] Impact Assessment Registry, https://iaac-aeic.gc.ca/050/evaluations/proj/80122/contributions/id/27070
[23] https://www.youtube.com/watch?v=E8G1YtpAWwc

priorities and strategies for the development or use of their lands or territories and other resources."[24]

In addition, article 31(2) says that "States shall consult and cooperate in good faith with the Indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources."[25]

Moreover, Article 29.2 that says: "States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent."

Recently, the federal government adopted the UNDRIP into Canadian law through bill C-15.[26] This means that the government now has a domestic legal obligation as well as an international one to uphold the provisions set out in the UNDRIP. However, in the case of the Chalk River NSDF, we believe that these provisions of the UNDRIP have not been fulfilled.

Many first nations communities have spoken out against the Chalk River project including the grand council chief of the Anishinabek Nation (Patrick Madahbee) who stated that "Trying to build this giant mound of radioactive waste … is insanity." Madahbee advocated for around 40 communities representing around 65 000 people across Ontario.[27] He said CNL has an obligation under the UNDRIP to consult Indigenous people about storing hazardous materials in their territory, but CNL hasn't talked to them about it (source from 2018).[28]

[24] UNDRIP art 32(1)
[25] Art 32(2)
[26] Bill C-15 - https://laws-lois.justice.gc.ca/eng/acts/U-2.2/page-1.html
[27] https://www.cbc.ca/news/canada/ottawa/chalk-river-nuclear-waste-indigenous-1.4492937
[28] ibid

Moreover, Kebaowek First Nation has objected to the continuation of the nuclear industry on its lands without its free prior and informed consent, as stated in the UNDRIP articles cited above.[29]

The principle of free prior and informed consent allows Indigenous peoples to give or withhold consent to a project that affects them or their territories.[30] "Free"means that Indigenous peoples' consent cannot be given under force or threat. "Prior" indicates that Indigenous groups must receive information on the activity and have enough time to review it before the activity begins. "Informed" means that the information provided is detailed, emphasizes both the potential positive and negative impacts of the activity, and is presented in a language and format understood by the community. "Consent" refers to the right of the community to agree or not agree to the project before it begins and throughout the life of the project.[31] Article 29(2) of the UNDRIP, that "States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent"[32] has not been respected, as demonstrated above.

In the case of this nuclear disposal facility, it is clear from the comments made by numerous Indigenous leaders that the CNSC acting as an agent of government did not receive the consent required from Indigenous communities for the continuation of the Chalk River Project. Likewise, in 2018, during the commission public hearings First Nation communities including the Algonquins of Ontario submitted that they opposed the project.[33] Therefore, we are convinced that the CNSC did not fulfill the government's obligations set out in the UNDRIP that pertain to free, prior, and informed consent.

[29] https://policyoptions.irpp.org/magazines/february-2022/decolonizing-energy-and-the-nuclear-narrative-of-small-modular-reactors/ see also UNDRIP art 32(2)
[30] https://www.fao.org/indigenous-peoples/our-pillars/fpic/en/
[31] https://www.conservation.org/projects/free-prior-and-informed-consent-in-context
[32] UNDRIP https://www.un.org/esa/socdev/unpfii/documents/DRIPS_en.pdf
[33] http://www.tanakiwin.com/wp-system/uploads/2018/01/CMD18-H2_51-SubmissionfromtheAlgonquinsofOntario-1.pdf

Recommendations

In sum, we recommend that the CNSC refuse the license for the proposed NSDF and ensure that future proposals require CNL to revise both its site selection process and facility design to ensure conformity with international standards and best practices, with the aim of identifying a site and design facility suited for the types, form, long-lived characteristics and volume of wastes intended to be stored, which ensures safety as a first consideration prior to consideration of other factors such as costs.

A future proposal should adhere to international standards set out by the IAEA

a. Ensure complete and accurate information about the waste at federal nuclear facilities is recorded in perpetuity.
b. Ensure the proposed technology conforms to the standards set out in the IAEA for waste classification and disposal; a near surface landfill type facility is not appropriate for any ILW or for many types of LLW
c. Ensure appropriate criteria are used for the siting process for the type of waste that will be included in the disposal facility.
d. Ensure complete records are made and maintained with regards to radioactive waste to be included in the appropriate type of facility.

   Ensure that sufficient information is available on how the disposal facility adheres to international safety standards to uphold best practices.
e. That the proponent and the CNSC adhere to the provisions set out in the UNDRIP to:
    i. Engage meaningfully with indigenous peoples prior to licensing decisions.
    ii. Take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent (article 29-2).

Conclusions

In our view, for the CNSC to make findings that respect its responsibilities as the sole regulator, and accord with their authority and IAEA Safety Standards, the presumption of conformity determined in the *Vavilov* case must be applied. Under the precedent of *Vavilov*, it is clear that "international law will operate as an important constraint on an administrative decision maker." Because the CNSC's Environmental Assessment Report contains significant flaws and omissions in the assessment of CNL's proposal for disposal of nuclear waste in a near surface landfill type facility at Chalk River, we submit that the proposal cannot be said to be in compliance with Canada's international obligations and is likely to pose a significant risk to human health and the environment. As a result of their non-conformity with IAEA Safety Standards, the CNSC's conclusions and recommendations regarding the proposals are unreasonable because they disregard established "principles of customary and conventional international law"[34]. It would equally be unreasonable to approve the EA and licence the project in the face of such non-conformity.

Moreover, the continuation of nuclear energy production and nuclear waste storage and disposal on unceded indigenous territory without meaningful dialogue is not only a demonstration of continued colonial practices, but a violation domestically as well as internationally of articles 29.2 and 31 of the UNDRIP. We must move away from colonial practices in our energy systems[35] toward meaningful actions to respect indigenous rights.

[34] Canada (Minister of Citizenship and Immigration) v. Vavilov, 2019 SCC 65 (CanLII), para 114

[35] https://policyoptions.irpp.org/magazines/february-2022/decolonizing-energy-and-the-nuclear-narrative-of-small-modular-reactors/