

**FEDERAL COURT**

**B E T W E E N:**

**CONCERNED CITIZENS OF RENFREW COUNTY AND AREA, CANADIAN  
COALITION FOR NUCLEAR RESPONSIBILITY and RALLIEMENT CONTRE  
LA POLLUTION RADIOACTIVE**

Applicants

-and-

**CANADIAN NUCLEAR LABORATORIES**

Respondent

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**APPLICATION RECORD**

**Volume 5 of 6**

**Memorandum of Fact and Law**

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**HAMEED LAW**

Barristers and Solicitors  
43 Florence Street  
Ottawa, ON K2P 0W6

**Nicholas Pope**

T: 613-656-6917  
F: 613-232-2680  
E: npope@hameedlaw.ca

**Lawyer for the Applicants,  
CONCERNED CITIZENS OF RENFREW  
COUNTY AND AREA et al**

TO: **CASSELS BROCK & BLACKWELL LLP**  
Suite 3810, Bankers Hall West  
888 3rd Street SW  
Calgary, AB T2P 5C5

**Jeremy Barretto**  
T: 403-351-3825  
F: 403-648-1151  
E: jbarretto@cassels.com

**Arend J.A. Hoekstra**  
T: 604-283-1481  
F: 604-691-6120  
E: ahoekstra@cassels.com

**Dana Poscente**  
T: 587-441-7601  
F: 403-648-1151  
E: dposcente@cassels.com

**Lawyer for the Respondent,  
CANADIAN NUCLEAR LABORATORIES**

AND TO: **FEDERAL COURT OF CANADA**  
90 Sparks Street, 5<sup>th</sup> Floor  
Ottawa, ON K1A 0H9

T: 613-992-4238  
F: 613-952-3653

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## PART I – STATEMENT OF FACT

### A. Overview

1. This is an application for judicial review of the Canadian Nuclear Safety Commission's ("**Commission**") decision dated January 8, 2024, approving Canadian Nuclear Laboratories' ("**CNL**") application to amend the Nuclear Research and Test Establishment Operating Licence for Chalk River Laboratories to authorize the construction of a Near Surface Disposal Facility ("**Licence Amendment**") under s. 5 of the *Canadian Environmental Assessment Act, 2012*, SC 2012, c 19, s 52 ("**CEAA, 2012**"), and s. 24 of the *Nuclear Safety and Control Act*, SC 1997, c 9 ("**NSCA**") ("**Decision**").
2. The Near Surface Disposal Facility ("**NSDF**") is intended to hold one million cubic metres of poorly categorized nuclear waste in an above-ground mound. This waste comes from decades of research and production for nuclear weapons and multiple accidents, including a nuclear reactor meltdown. It needs to be placed in a long-term storage facility that can contain and isolate it for thousands of years.
3. During the licencing process, intervenors raised concerns about health, safety, and environmental risks that will result from the NSDF's corner-cutting design and CNL's failure to provide statutorily required information about what waste will be placed in the NSDF. The Decision is unreasonable because the Commission did not meaningfully grapple with these concerns, and it granted the Licence Amendment despite CNL not fulfilling the statutory requirements.
4. The Applicants submitted that Canada's regulations and international standards limit the maximum radiation dose a person is allowed to be exposed to by a substance no longer under institutional control to 10 µSv/year. CNL has stated that 4100 years from now – well past the end of institutional control – the NSDF will expose members of the public to 15 µSv/year. The Commission nevertheless approved the NSDF by relying on the 1,000 µSv/year limit for substances under institutional control, without providing any reasoning for using

this inapplicable limit. As a result, thousands of years from now, those inhabiting the land will be exposed to increased risks of cancers and genetic disorders without their knowledge or consent.

5. The Applicants submitted that CNL did not provide all the information about the waste to be disposed of that is required under s. 3(1)(c) and (j) of the *General Nuclear Safety and Control Regulations* (“**GNSCR**”). CNL did not provide information about the origin of all the waste, and the override clause in the Waste Acceptance Criteria nullifies the comprehensiveness of all the other information provided since it allows waste that does not meet the Waste Acceptance Criteria to be placed in the NSDF. The Commission did not follow the modern approach to statutory interpretation in interpreting these provisions, and it failed to grapple with the Applicants’ argument. Since all estimates of the levels of radiation that will be emitted from the NSDF assume that CNL will abide by the Waste Acceptance Criteria, allowing CNL to deviate from the Waste Acceptance Criteria renders the safety estimates pure fiction.
6. The Commission also failed to meaningfully grapple with three other of the Applicants’ central arguments, namely 1) CNL’s process for verifying that waste placed in the NSDF complies with the Waste Acceptance Criteria is inadequate; 2) active bear dens and Eastern Wolves’ habitat would be damaged or destroyed by NSDF site preparation and construction; and 3) CNL did not provide sufficient information for the Commission to consider all of the cumulative effects under s. 19(1)(a) of *CEAA, 2012*.
7. The Commission’s Decision will have profound effects on the lives and health of millions of Canadians for thousands of years. Consequently, reasonableness requires a high level of responsive justification. Considering the significant justificatory failures, it is not the role of this Court to fill in the gaps in the reasoning. The Decision must be sent back to the Commission for redetermination.

## **B. Chalk River Laboratories' Legacy Waste**

8. Chalk River Laboratories (“**Chalk River**”) was founded in 1944 as a top-secret installation for the Manhattan project during World War II. Scientists at Chalk River raced to produce plutonium for American nuclear weapons.<sup>1</sup> After the Manhattan Project ended in 1946, Chalk River focused its efforts on medical and industrial nuclear technologies, including extracting plutonium from irradiated fuel rods from an on-site nuclear reactor.<sup>2</sup>
9. In the 1950s, Chalk River experienced two serious nuclear accidents, which produced a significant portion of Chalk River’s poorly categorized “legacy waste”. On December 12, 1952, fuel rods in a nuclear reactor overheated, resulting in a nuclear meltdown. Hydrogen explosions severely damaged the reactor and its building. The reactor vessel’s seal blew up, allowing 4.5 million litres of radioactive water to escape. Workers dumped this water into ditches on site. A team of drivers hauled the intensely radioactive core to a nearby burial site, rotating driving shifts to limit their exposure to the lethal radiation. The core was so radioactive that the portion of the road it travelled over subsequently needed to be buried as radioactive waste. Thousands of litres of radiotoxic water and other contaminated reactor wreckage were buried in sandy trenches.<sup>3</sup>
10. In 1958, a second reactor had an accident, which created even more legacy waste. A uranium fuel rod caught fire as it was being moved by crane out of the reactor vessel. It broke, and the largest part fell to the ground still burning. The whole building was contaminated as well as a large area outside the building.<sup>4</sup>
11. Accidents have continued to the present era. On December 5, 2008, the second nuclear reactor leaked heavy water. Workers shut down the reactor, but they

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<sup>1</sup> Canadian Nuclear Worker’s Council Submission, **Application Record (“AR”), Vol 4, Tab 2(141), p 12234**; Northwatch Submission, **AR4, Tab 2(185), pp 14316-14317**.

<sup>2</sup> Northwatch Submission, **AR4, Tab 2(185), p 14317**.

<sup>3</sup> Northwatch Submission, **AR4, Tab 2(185), p 14317**.

<sup>4</sup> Supplementary Submission from KFN, **AR4, Tab 2(158), p 12756**.

did not inform the public of the shutdown nor the leakage. After six days, the leak stopped on its own, so they restarted the reactor without identifying the leak's source.<sup>5</sup> In mid-May 2009, the heavy water leak returned at a greater rate, prompting another shutdown until August 2010. Even with the reactor completely defueled, all repairs had to be done remotely from a minimum distance of 8 metres due to the residual radioactivity in the reactor vessel.<sup>6</sup>

### **C. Waste Facility Site Selection and Design**

12. In 2004, Atomic Energy of Canada Ltd ("**AECL**") launched a legacy waste cleanup effort. More than half the legacy waste is from the 1940s to 1960s when the risks of atomic waste were not well known, and regulations were less stringent. The rest is from research and development for nuclear reactor technology, medical isotope production, and national science programs.<sup>7</sup> In 2015, AECL contracted the owners of CNL to construct a disposal facility for the waste. CNL is owned by a multinational consortium composed of SNC-Lavalin Inc and two Texas-based engineering and management firms, Fluor and Jacobs.<sup>8</sup>
13. To choose the location for the waste facility, CNL considered three properties on federal lands owned by AECL, and they settled on Chalk River. The main reason CNL chose Chalk River was to save money because it would cost more to transport the legacy waste to another site.<sup>9</sup> CNL did not consider any locations other than the three AECL properties. Within the Chalk River property, CNL chose the cheaper of two site candidates, opting for a site on fractured bedrock only 1.1 km from the Ottawa River rather than the alternate site, which is more than 3 km from the Ottawa River. Both locations have access to all the services needed for a waste facility, but the alternate site's "relatively remote"

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<sup>5</sup> Supplementary Submission from KFN, **AR4, Tab 2(158), p 12756.**

<sup>6</sup> Supplementary Submission from KFN, **AR4, Tab 2(158), p 12756.**

<sup>7</sup> Northwatch Submission, **AR4, Tab 2(185), p 14318.**

<sup>8</sup> Presentation from CCRCA, **AR4, Tab 2(121), pp 12111-12112.**

<sup>9</sup> NSDF Site Selection Report, **AR1, Tab 2(1)(QQ), p 6183.**

location would make it more costly for CNL to construct and operate.<sup>10</sup>

14. CNL assessed four different facility types and found that either a near surface disposal facility (“**NSDF**”) or a deep underground geologic waste management facility (“**GWMF**”) would be technically and economically feasible. CNL noted that a GWMF would be an example of the “best available technology and a robust design” and “could be developed at the [Chalk River] site”.<sup>11</sup> CNL concluded “a GWMF is considered to be more favourable as it would provide additional barriers against potential groundwater transport”,<sup>12</sup> and because it would be “more robust against surface activities”,<sup>13</sup> but it opted for an NSDF because it would be cheaper.<sup>14</sup> CNL then assessed three facility designs for the NSDF and found that either an engineered containment mound or a concrete vault would be technically and economically feasible.<sup>15</sup> CNL ruled out a third option, a shallow cavern, on the basis that there were no suitable sites at Chalk River, but it did not consider whether there was a suitable site at any other location.<sup>16</sup> Out of the two remaining options, CNL opted for the cheapest facility type, an engineered containment mound.<sup>17</sup>
15. The final NSDF design would be an 18 metre-tall mound with a base liner, located 1.1 km from the Ottawa River, 180 km upstream of Ottawa, and containing up to one million cubic metres of radioactive waste.<sup>18</sup> The NSDF’s lifespan would consist of five phases: 1) a 3-year construction phase, 2) a 50-year operation phase, 3) a 30-year-closure phase, 4) a 300-year institutional control period, and 5) an indefinite post-institutional control period.<sup>19</sup>

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<sup>10</sup> NSDF Site Selection Report, **AR1, Tab 2(1)(QQ), pp 6187 & 6190.**

<sup>11</sup> Decision, para 162, **AR1, Tab 2(1), p 84**; NSDF Environmental Impact Statement (“**EIS**”), **AR1, Tab 2(1)(OO), pp 4623-4624.**

<sup>12</sup> EIS, **AR1, Tab 2(1)(OO), p 4625.**

<sup>13</sup> EIS, **AR1, Tab 2(1)(OO), p 4626.**

<sup>14</sup> Decision, para 162, **AR1, Tab 2(1), p 84**; EIS, **AR1, Tab 2(1)(OO), pp 4623-4624.**

<sup>15</sup> Decision, para 163, **AR1, Tab 2(1), p 84.**

<sup>16</sup> EIS, **AR1, Tab 2(1)(OO), p 4632.**

<sup>17</sup> Decision, para 163, **AR1, Tab 2(1), p 84.**

<sup>18</sup> Decision, para 37, **AR1, Tab 2(1), p 51**; EIS, **AR1, Tab 2(1)(OO), p 4681.**

<sup>19</sup> Decision, para 40, **AR1, Tab 2(1), p 51.**



16. During the 50-year operation phase, there would be no cover over the mound, and rainwater would be able to enter, allowing radioactive materials to leach into the environment. To try to mitigate this, the NSDF project includes a wastewater treatment plant, but it cannot remove tritium, which can cause genetic defects if ingested. Tritium needs to decay over time, and it takes 12.3 years for its radioactivity to be reduced by 50%.<sup>20</sup> The treatment plant would release 11 million litres of tritium-containing water per year.<sup>21</sup> Some would be released into the groundwater, which would take 7 years to reach the Ottawa River,<sup>22</sup> and some would be released directly into Perch Lake,<sup>23</sup> which takes mere days to reach the Ottawa River, allowing no time for the tritium to decay.<sup>24</sup>
17. The NSDF would remain under institutional control for 300 years after its closure phase. During this time, the NSDF would be exposed to weathering and erosion, and after 650 years (approximately 350 years after the end of institutional control) both the cover and liner would fully degrade.<sup>25</sup> Being open to the environment over the next thousands of years, the NSDF's contents would then deliver a radiation dose of 15 µSv/y to the public in a best-case scenario,<sup>26</sup> and 140 µSv/y in the case of a disruptive event,<sup>27</sup> both well above the conditional clearance level of 10 µSv/y required for nuclear substances to be free from regulatory control, as set out in the *Nuclear Substances and Radiation Devices Regulations*<sup>28</sup> and international standards.<sup>29</sup>

#### **D. Licence Amendment Application**

18. CNL applied to the Commission under s. 5 of *CEAA, 2012*, and s. 24 of *NSCA*

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<sup>20</sup> EIS, **AR1, Tab 2(1)(OO), p 4660**, see footnote 2.

<sup>21</sup> EIS, **AR1, Tab 2(1)(OO), p 4660**.

<sup>22</sup> Decision, para 191, **AR1, Tab 2(1), p 93**.

<sup>23</sup> EIS, **AR1, Tab 2(1)(OO), pp 4661 & 4672**.

<sup>24</sup> EIS, **AR1, Tab 2(1)(OO), p 4671**; NSDF Site Selection Report, **AR1, Tab 2(1)(QQ), p 6199**.

<sup>25</sup> NSDF Post-Closure Safety Assessment, 3<sup>rd</sup> iteration, **AR1, Tab 2(1)(KK), p 3734**.

<sup>26</sup> Decision, para 112, **AR1, Tab 2(1), p 71**. Sievert (sV) is a unit used to measure radiation exposure a person receives. There are 1000 microsieverts (µSv) in 1 millisievert (mSv), and 1000 mSv in 1 Sv.

<sup>27</sup> Decision, para 120, **AR1, Tab 2(1), p 72**.

<sup>28</sup> *Nuclear Substances and Radiation Devices Regulations*, SOR/2000-207, ss [1](#) & [5\(1\)\(a\)](#).

<sup>29</sup> Classification of Radioactive Waste, IAEA, **AR1, Tab 2(1)(X), pp 1141 & 1145**.

to amend Chalk River's operating licence to authorize the NSDF's construction, but CNL failed to include critical information required under the regulations.

19. Section 3(1) of the *GNSCR* states,

An application for a licence shall contain the following information:  
[...]

(c) the name, maximum quantity and form of any nuclear substance to be encompassed by the licence; [...]

(j) the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed or disposed of at the site of the activity to be licensed<sup>30</sup>

20. CNL did not state the origin of packaged waste, which would account for 13% of the total waste, with any specificity. CNL included two different, extremely broad statements about the packaged waste's origin:

a. "In addition to CNL waste, the NSDF packaged waste may also include waste from Whiteshell Laboratories, the National Programs, the Nuclear Power Demonstration Closure Project, and waste from off-site commercial sources."<sup>31</sup>

b. "The primary source of waste generation is the CRL site, with additional waste from other CNL's sites and small waste quantity from Canadian generators, such as hospitals and universities."<sup>32</sup>

21. These statements differ in that the first statement limits the origin of non-CNL waste to any commercial source but provides no geographic limit, and the second statement limits the origin to Canadian generators but does not specify whether this will be confined to commercial sources. It is unclear whether these two statements should be read to mean that non-CNL waste must be both

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<sup>30</sup> *General Nuclear Safety and Control Regulations*, SOR/2000-202, ss [3\(1\)\(c\)](#) & [\(j\)](#).

<sup>31</sup> NSDF Waste Acceptance Criteria, **AR1, Tab 2(1)(II), p 2913**.

<sup>32</sup> NSDF Safety Case, **AR1, Tab 2(1)(EE), p 2455**.

commercial and Canadian or that it must be either commercial or Canadian. In either case, the scope is excessively broad so as not to provide any meaningful information about the origin of the waste. Notably, there was no indication whether this waste would include waste originating from accidents, fuel reprocessing, or nuclear reactors.

22. In addition, the Waste Acceptance Criteria includes an “Infrequently Performed Operations” clause that allows waste that does not meet the Waste Acceptance Criteria to be placed in the NSDF on a case-by-case basis.<sup>33</sup> This effectively nullified any guarantees about what would be placed in the NSDF, contrary to the requirements of *GNSCR* s. 3(1)(c) and (j). It also makes any calculations of future radioactive emissions and effluent discharge a fiction since those calculations were based on compliance with the Waste Acceptance Criteria.<sup>34</sup>

### **E. Intervenors’ Submissions**

23. The Applicants and other intervenors made written and oral submissions to the Commission about the proposed licence amendment. They raised five key issues that are relevant to this present application. Many of these arguments were raised by multiple intervenors, repeated by others, and supported by others without repeating the entire argument.
24. First, Dr. James Walker, the former Director of Safety Engineering and Licensing at Chalk River, explained that a different regulatory limit is required for radioactive substances that are released from regulatory control than those that are under regulatory control. This is because after release from regulatory control, the members of the public receive less benefit to justify exposing them to a higher dose, and there is no regulatory control to ensure radiation doses are limited.<sup>35</sup>

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<sup>33</sup> NSDF Waste Acceptance Criteria, s. 6.4, **AR1, Tab 2(1)(HH), p 3541**.

<sup>34</sup> The Safety Case and Safety Assessment for the Disposal of Radioactive Waste, IAEA, 2012, **AR1, Tab 2(1)(Z), pp 1314, 1339 & 1369**; NSDF Safety Case, **AR1, Tab 2(1)(EE), pp 2264 & 2570-2572**.

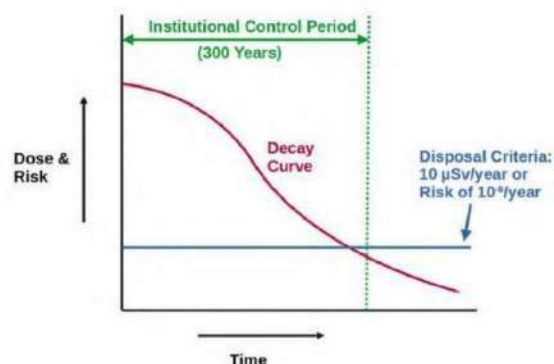
<sup>35</sup> Final Submission from James R Walker, **AR4, Tab 2(110), pp 11928-11929**.

25. Dr. Walker stated that the limit under Canadian regulations and international guidelines for substances under regulatory control is a maximum dose to the public of 1 mSv/y (1,000  $\mu$ Sv/y),<sup>36</sup> but for substances released from regulatory control the maximum dose must be less than the clearance level of 10  $\mu$ Sv/y.<sup>37</sup> Dr. Walker submitted that the risk of cancer and genetic defects to a member of the public is 100 times greater if they receive 1 mSv/y than 10  $\mu$ Sv/y.<sup>38</sup> Dr. Walker included these helpful figures:<sup>39</sup>

Figure 1: Radiation Exposure Regulation



Figure 2: Relationship between Radionuclide Inventory, Institutional Control Period, and Disposal Criteria



26. Dr. Walker noted that CNL's Environmental Impact Statement stated that after the end of institutional control, the NSDF would expose members of the public to radiation doses of 15  $\mu$ Sv/y in a normal evolution scenario, which exceeds Canadian and international clearance levels.<sup>40</sup>
27. Dr. Walker provided the Commission with his calculations, based on CNL's licensed inventory, showing when each substance destined for the NSDF would reach its unconditional clearance level under the *Nuclear Substances and Radiation Devices Regulations*. His calculations revealed that most substances would not reach the unconditional clearance level for anywhere from hundreds of thousands of years ( $2.88 \times 10^5$  years for Plutonium-239) to tens of billions of

<sup>36</sup> See *Radiation Protection Regulations*, SOR/2000-203, s 1(3).

<sup>37</sup> See *Nuclear Substances and Radiation Devices Regulations*, SOR/2000-207, s 1; Classification of Radioactive Waste, IAEA, 2009, AR1, Tab 2(1)(X), pp 1141 & 1144-1145.

<sup>38</sup> Final Submission from James R Walker, AR4, Tab 2(110), p 11928.

<sup>39</sup> Final Submission from James R Walker, AR4, Tab 2(110), pp 11929 & 11930.

<sup>40</sup> Final Submission from James R Walker, AR4, Tab 2(110), p 11932.

years ( $1.21 \times 10^{11}$  years for Uranium-238).<sup>41</sup> The Applicant Concerned Citizens of Renfrew County and Area (“**CCRCA**”) seconded Dr. Walker’s submissions.<sup>42</sup>

28. Second, the Applicant Ralliement contra la pollution radioactive (“**Ralliment**”), CCRCA, and other intervenors submitted that CNL had not provided all the information required under *GNSCR* s. 3(1)(c) and (j),<sup>43</sup> and that the Infrequently Performed Operations clause rendered any information that was provided incomplete since it would allow waste that was not listed in CNL’s licencing application to be placed in the NSDF.<sup>44</sup>
29. Third, Dr. Walker and CCRCA submitted that CNL’s process for verifying that waste placed in the NSDF complies with the Waste Acceptance Criteria was inadequate.<sup>45</sup>
30. Fourth, CCRCA and two First Nations<sup>46</sup> submitted that there are residences and habitat of species of concern on the proposed NSDF site, and that these residences and habitat would be damaged or destroyed by the NSDF site preparation and construction. The intervenors submitted evidence that there are active bear dens at the proposed NSDF site, and Eastern Wolves feed there.<sup>47</sup>

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<sup>41</sup> Final Submission from James R Walker, **AR4, Tab 2(110), p 11933**.

<sup>42</sup> Final Submission from CCRCA, **AR4, Tab 2(121), p 12125**.

<sup>43</sup> Submission from CCRCA, **AR4, Tab 2(121), p 12071**; Submission from Canadian Environmental Law Association, **AR4, Tab 2(151), pp 12425 & 12445**; Submission from the Sierra Club Canada Foundation, **AR4, Tab 2(88), p 11626**; Final submission from Kitchissippi-Ottawa Valley Chapter Council of Canadians, **AR4, Tab 2(92), p 11669**; Presentation from Ottawa Chapter of the Council of Canadians, **AR4, Tab 2(164), pp 13940 & 13942**.

<sup>44</sup> Submission from Northwatch, **AR4, Tab 2(185), p 14275** (Northwatch refers to the “Infrequently Performed Operations” clause by its name from a prior draft: the “Variance Process”); Supplementary submission from Kitigan Zibi Anishinabeg First Nation, **AR4, Tab 2(160), p 12913**; Submission of Ralliement contra la pollution radioactive, May & June 2022, **AR4, Tab 2(152), p 12511**. CNL recognized that these arguments regarding transparency were “very important to intervenors”: Transcript of June 1, 2022, Public Hearing, **AR2, Tab 2(5), p 7594**.

<sup>45</sup> Final Submission from James R Walker, **AR4, Tab 2(110), p 11931**; Final Submission from CCRCA, **AR4, Tab 2(121), p 12125**.

<sup>46</sup> Kebaowek First Nation and Kitigan Zibi Anishinabeg First Nation.

<sup>47</sup> Final Submission from CCRCA, **AR4, Tab 2(121), p 12120**; Supplementary Submission from Kebaowek First Nation, **AR4, Tab 2(158), pp 12739-12743**; Final Submission from Kebaowek First Nation and Kitigan Zibi Anishinabeg First Nation, **AR4, Tab 2(158), p 12823**.

31. Fifth, CCRCA submitted that CNL had not provided any information about certain other activities at Chalk River Laboratories, which was required for the Commission to consider the cumulative environmental effects under s. 19(1)(a) of *CEAA, 2012*. CCRCA noted nine waste-related projects that were posted to the federal Impact Assessment Registry from November 2020 to March 2021, for which CNL provided no information.<sup>48</sup>

### **F. Decision**

32. On January 9, 2024, the Commission rendered its Decision approving the Licence Amendment. To do so, it had to decide three matters.
- 1) First it had to conduct an environmental assessment under *CEAA, 2012*, and determine whether the NSDF would be likely to cause significant adverse environmental effects, taking into account the entire lifecycle of the project.
  - 2) Second, it had to determine whether the Crown's duty to consult Indigenous nations was met.
  - 3) Third, it had to determine whether to grant the licence under s. 24 of the *NSCA*, which required, *inter alia*, that
    - a. CNL provide all the information prescribed in s. 3 of the *GNSCR*; and
    - b. The Commission determine, under s. 24(4) of the *NSCA*, whether CNL
      - i. is qualified to carry on the activity,
      - ii. would make adequate provision for the protection of the environment and health and safety of persons, and
      - iii. would make adequate provision for the maintenance of

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<sup>48</sup> Presentation from CCRCA, **AR4, Tab 2(121), p 12099**.

measures required to implement international obligations.<sup>49</sup>

33. The Commission concluded that the NSDF would not be likely to cause significant adverse environmental effects, and that CNL would make adequate provision for the protection of the environment and health and safety of persons. In coming to these conclusions, the Commission did not meaningfully grapple with any of the five key submissions outlined above.
34. The Commission decided that the anticipated radiation doses post-institutional control would not be a significant adverse environmental impact nor be an inadequate protection of the health and safety of persons since these predicted dosages during the post-institutional control period are less than the 1,000  $\mu\text{Sv/y}$  (1  $\text{mSv/y}$ ) dose limit set out in the *Radiation Protection Regulations*.<sup>50</sup> The Commission did not address Dr. Walker's submissions and evidence showing that radiation doses must be below 10  $\mu\text{Sv/y}$  to be free from institutional control. The Commission did not review the International Atomic Energy Agency's *Classification of Radioactive Waste*, which states the same.<sup>51</sup> And the Commission did not look at the text, context, or purpose of the *Radiation Protection Regulations*<sup>52</sup> and *Nuclear Substances and Radiation Devices Regulations*<sup>53</sup> to ensure it had properly understood the regulations, which set out different limits for radioactive substances free from regulatory control from those under control.
35. The Commission did not meaningfully grapple with the argument that CNL did not comply with s. 3(1)(c) and (j) of the *GNSCR*. The Commission noted this argument, but erroneously stated that these requirements were satisfied in the NSDF Safety Case, NSDF Safety Analysis Report, and NSDF Post-Closure Safety Assessment without demonstrating that it had found each of the eight

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<sup>49</sup> Decision, paras 3-7, **AR1, Tab 2(1), pp 40-41**.

<sup>50</sup> Decision, para 112, **AR1, Tab 2(1), p 71**.

<sup>51</sup> *Classification of Radioactive Waste*, IAEA, 2009, **AR1, Tab 2(1)(X), pp 1141 & 1144-1145**.

<sup>52</sup> *Radiation Protection Regulations*, SOR/2000-203, s 1(3).

<sup>53</sup> *Nuclear Substances and Radiation Devices Regulations*, SOR/2000-207, s 1.

pieces of information required at some specific place in the documents.<sup>54</sup> In fact, none of the documents contained meaningful information about the origin of the packaged waste. Furthermore, the Commission did not address the argument that the Infrequently Performed Operations provision made all information that was provided incomplete.

## **PART II – POINTS IN ISSUE**

36. The Applicants submit that the following issue is to be determined:

Is the Decision unreasonable?

## **PART III – SUBMISSIONS**

37. The standard of review is reasonableness.<sup>55</sup> The Decision is unreasonable in three key ways:

- 1) The Commission used the wrong radiation dose limit for exposures post-institutional control without providing any justification or consideration of the statutory scheme;
- 2) CNL did not provide the mandatory information required under s. 3(1)(c) and (j) of the *GNSCR*; and
- 3) The Commission failed to meaningfully grapple with key issues and central arguments.

38. When considering each of these grounds, it is not good enough for the Decision to be *justifiable*; the Decision must be *justified* by its reasons.<sup>56</sup> Even if the outcome of the Decision could be reasonable under different circumstances, it is “not ordinarily appropriate for the reviewing court to fashion its own reasons in order to buttress the administrative decision.”<sup>57</sup>

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<sup>54</sup> Decision, para 444, **AR1, Tab 2(1), p 163**.

<sup>55</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [10](#).

<sup>56</sup> *Ibid* at para [86](#).

<sup>57</sup> *Ibid* at para [96](#).



39. Under the principle of responsive justification, the Commission had a heightened duty to justify the Decision since the Decision has consequences that threaten the public's lives and livelihoods due to the serious health impacts of radiation exposure.<sup>58</sup> The Applicants acknowledge that the reasons for decision are lengthy, but when dealing with long-lasting nuclear substances, even one flaw in the reasoning will put many lives at risk.

### **1. Commission Used Wrong Radiation Limit Without Explanation**

40. The Decision is unreasonable because the Commission relied on the public radiation dose limit for substances under institutional control to conclude that radiation doses occurring after the end of institutional control were acceptable. In doing so, the Commission failed to follow the modern approach to statutory interpretation, failed to consider international instruments that it was statutorily required to consider, failed to account for evidence, and failed to meaningfully grapple with one of Dr. Walker's and CCRCA's central arguments.

#### **1.1 Failure to Interpret Regulations**

41. The Commission explained its choice of 1 mSv/y as its radiation dose benchmark by saying, "In accordance with the *Radiation Protection Regulations*, the regulatory dose limit for a person who is not a nuclear energy worker is 1 mSv in one calendar year."<sup>59</sup> However, the *Radiation Protection Regulations* do not say this is the dose limit for substances to be free from institutional control. Rather, the text, context, and purpose of the regulation all indicate that this dose limit relates to substances under active institutional control.
42. The only place that 1 mSv/y is mentioned in the *Radiation Protection Regulations* is in s. 1(3), which states

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<sup>58</sup> *Ibid* at paras [133](#) & [135](#).

<sup>59</sup> Decision, para 112, footnote 132, **AR1, Tab 2(1), p 71**.

For the purpose of the definition **nuclear energy worker** in section 2 of the [Nuclear Safety and Control] Act, the prescribed limit for the general public is 1 mSv per calendar year.<sup>60</sup>

43. The definition for nuclear energy worker in s. 2 of the *NSCA* is as follows:

**nuclear energy worker** means a person who is required, in the course of the person's business or occupation in connection with a nuclear substance or nuclear facility, to perform duties in such circumstances that there is a reasonable probability that the person may receive a dose of radiation that is greater than the prescribed limit for the general public.<sup>61</sup>

44. The purpose of s. 1(3) of the *Radiation Protection Regulations* is not to describe when radioactive substances are producing low enough emissions to be allowed to lie exposed in a field with no institutional or government oversight, as would be the case in 4100 years from now when a member of the public would be exposed to 15 µSv/y of radiation from the eroded NSDF.<sup>62</sup> The purpose of this section is to define who is deemed to be a nuclear energy worker and who is not – all in the context of active institutional control.
45. For example, a company possessing radioactive substances may have employees who work on-site with the substances and others who work in offices some distance away. The s. 1(3) definition clarifies which employees count as “nuclear energy workers” because there are certain statutory duties that apply only to nuclear energy workers.<sup>63</sup>
46. The statutory context clearly implies that the 1 mSv/y dose limit relates to situations of institutional control – meaning there would be monitoring and safety precautions – since s. 2 of the *NSCA* says that a “nuclear energy worker” is someone who has a “business or occupation in connection with a nuclear substance or nuclear facility”,<sup>64</sup> and a business with workers would be a

<sup>60</sup> *Radiation Protection Regulations*, SOR/2000-203, s [1\(3\)](#), emphasis in original.

<sup>61</sup> *Nuclear Safety and Control Act*, SC 1997, c 9, s [2](#), emphasis in original.

<sup>62</sup> See Decision, para 112, **AR1, Tab 2(1), p 71**.

<sup>63</sup> See e.g. *Radiation Protection Regulations*, SOR/2000-203, ss [7](#), [8](#), [10](#) & [11](#); *Nuclear Safety and Control Act*, SC 1997, c 9, s [48\(h\)](#).

<sup>64</sup> *Nuclear Safety and Control Act*, SC 1997, c 9, s [2](#).

controlling institution subject to regulatory oversight.

47. Given this inapplicability to the far-future situation the Commission was assessing, the Commission should have considered the other regulatory provisions which set the limits for material to be free from regulatory control. There are three relevant limits in the regulations. One is expressed in Sv (sieverts), which measure the amount of radioactive exposure a person receives; and the other two are expressed in Bq (becquerels), which measure the amount of radiation a substance emits:

- 1) “Conditional clearance level”, is “an activity concentration that does not result in an effective dose (a) greater than 1 mSv in a year due to a low probability event [...]; or (b) greater than 10 µSv in a year;” and
- 2) “Unconditional clearance level”, and “exemption quantity” are activity concentrations that are less than a certain number of Bq/g depending on the specific substance.<sup>65</sup>

48. The text, context, and purpose of these limits indicate that they are the limits that would be most applicable to a situation thousands of years from now, post-institutional control. By way of context,

- a. Subsection 5.1(1) of the *Nuclear Substances and Radiation Devices Regulations* allows a person to abandon or dispose of a radioactive substance only if the radioactive activity does not exceed its exemption quantity, conditional clearance level, or unconditional level.<sup>66</sup>
- b. Subsection 5(1)(a) of the *Nuclear Substances and Radiation Devices Regulations* allows a person to possess or store a radioactive substance without a licence only if the radioactive activity does not

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<sup>65</sup> *Nuclear Substances and Radiation Devices Regulations*, SOR/2000-207, s [1](#); see also *Radiation Protection Regulations*, SOR/2000-203, s [1\(1\)](#) for “exemption quantity” having the same meaning under this regulation.

<sup>66</sup> *Nuclear Substances and Radiation Devices Regulations*, SOR/2000-207, s [5.1\(1\)](#).

exceed its exemption quantity, conditional clearance level, or unconditional level.<sup>67</sup>

- c. Subsection 5(1)(b) of the *Nuclear Substances and Radiation Devices Regulations* allows a person to abandon a sealed source that contains less than the exemption quantity.<sup>68</sup>
- d. Section 20 of the *Radiation Protection Regulations* requires containers holding nuclear substances be properly labelled unless the quantity is less than or equal to the exemption quantity.<sup>69</sup>

49. To be clear, neither the Applicants nor Dr. Walker submitted that these limits apply to the NSDF in the present, nor for the next 350 years. When there is institutional control, higher levels of radioactivity are permissible because of the principles of justification, limitation, and optimization, as set out by the International Commission on Radiological Protection and explained by Dr. Walker.<sup>70</sup> But the Commission was tasked with considering the impact on people far in the future, when the NSDF would be an abandoned, eroded mound with no licence or institution in existence to protect the public.
50. Decision makers are required to follow the modern approach to statutory interpretation and interpret statutory provisions in a way that is “consistent with the text, context, and purpose of the provision.”<sup>71</sup> In *Vavilov*, the Supreme Court said that if the decision maker fails to consider one of these aspects, and that could have led them to a different result, the decision will be unreasonable:

If, however, it is clear that the administrative decision maker may well, had it considered a key element of a statutory provision’s text, context or purpose, have arrived at a different result, its

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<sup>67</sup> *Ibid*, s [5\(1\)\(a\)](#).

<sup>68</sup> *Ibid*, s [5\(1\)\(b\)](#).

<sup>69</sup> *Radiation Protection Regulations*, SOR/2000-203, s [20](#).

<sup>70</sup> Final Submission from James R Walker, **AR4, Tab 2(110), p 11928**.

<sup>71</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [120](#).

failure to consider that element would be indefensible, and unreasonable in the circumstances.<sup>72</sup>

51. The reasons for Decision provide no indication that the Commission considered the text, context, or purpose of the statutory provisions at issue. If it had, the Commission may well have concluded that the 10 µSv/y conditional clearance level was the most appropriate limit against which to assess the impact of public radiation exposure post-institutional control. Faced with this failure, it is not this Court's place to do the interpretive exercise for the Commission – that would be an impermissible buttressing of the decision.<sup>73</sup> Rather the Decision must be remitted to the Commission to obtain a transparent and justified conclusion on this point.

## **1.2 Failure to Consider Statutorily Required International Obligations**

52. Furthermore, the Decision is unreasonable because the Commission paid no heed to the international standards setting 10 µSv/y as the limit for materials to be free from regulatory control. A purpose of the *NSCA* is “to provide for (a) the limitation, [...] in a manner that is consistent with Canada's international obligations, of risks to [...] health and safety of persons and the environment that are associated with the [...] possession and use of nuclear substances”.<sup>74</sup> Under s. 24(4)(b) of the *NSCA*, the Commission must consider Canada's “international obligations” before amending a licence.<sup>75</sup>
53. Canada is a signatory to the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*.<sup>76</sup> Under this treaty, the Commission must have “due regard to internationally endorsed criteria and standards” at “all stages of radioactive waste management” when

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<sup>72</sup> *Ibid* at para 122, emphasis added.

<sup>73</sup> *Ibid* at para 96.

<sup>74</sup> *Nuclear Safety and Control Act*, SC 1997, c 9, s 3(a).

<sup>75</sup> *Ibid*, s 24(4)(b).

<sup>76</sup> *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*, 5 September 1997, Can TS 2001 no 10 (entered into force 24 December 1997, ratification by Canada 7 May 1998).

fulfilling its mandate to protect against radiological hazards.<sup>77</sup>

54. The International Atomic Energy Agency (“IAEA”) sets these criteria and standards in its *Classification of Radioactive Waste*. It states plainly that the conditional clearance level of 10 µSv/y is the appropriate limit for radioactive materials to be free from regulatory control. It states that “exempt waste” is “[w]aste that meets the criteria for clearance, exemption or exclusion from regulatory control for radiation protection purposes”.<sup>78</sup> It then states that the primary basis for establishing exemption and clearance “is that the effective doses to individuals should be of the order of 10 µSv or less in a year.”<sup>79</sup> The IAEA allows a dose of 1 mSv/y only for “low probability events”,<sup>80</sup> just like the definition of conditional clearance in the *Nuclear Substances and Radiation Devices Regulations*.
55. In *Mason*, the Supreme Court held that when the governing statute expressly identifies one of the statute’s objectives as being to fulfil Canada’s international legal obligations, a decision will be unreasonable if the decision maker did not demonstrate that it considered them.<sup>81</sup> The Decision did not demonstrate that the Commission considered the IAEA clearance levels, despite Dr. Walker and the CCRCA bringing them to the Commission’s attention, so it is unreasonable.

### **1.3 Failure to Meaningfully Grapple with Argument**

56. A decision is also unreasonable if it fails to meaningfully grapple with key issues or central arguments.<sup>82</sup> Reasons that simply “summarize arguments made, and then state a peremptory conclusion” are not adequate.<sup>83</sup> Nor is a decision maker’s statement that it has not been persuaded by a particular submission.<sup>84</sup>

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<sup>77</sup> *Ibid*, art [11](#).

<sup>78</sup> *Classification of Radioactive Waste*, IAEA, **AR1, Tab 2(1)(X)**, p 1141.

<sup>79</sup> *Classification of Radioactive Waste*, IAEA, **AR1, Tab 2(1)(X)**, p 1145.

<sup>80</sup> *Ibid*.

<sup>81</sup> *Mason v Canada (Citizenship and Immigration)*, 2023 SCC 21 at paras [104](#) & [106](#).

<sup>82</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [128](#); *Turner v Canada (Attorney General)*, 2022 FCA 192 at para [8](#).

<sup>83</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [102](#).

<sup>84</sup> *Paul v Canada (Attorney General)*, 2022 FC 1157 at paras [32-34](#).

57. This is a shift from the pre-*Vavilov* approach. The Federal Court of Appeal noted this shift in *Farrier*, when it found a decision unreasonable for failing to provide reasons on two issues raised by the applicant. The Court explained, “Before *Vavilov* I would probably have found, as did the Federal Court, that, in light of the presumption that the decision-maker considered all of the arguments and the case law before it and after having read the record, the decision was reasonable.”<sup>85</sup> But as a result of the shift in the law, the Court held that “the reasons do not meet the standard of reasonableness described by the Supreme Court in *Vavilov*.”<sup>86</sup>
58. Dr. Walker submitted that the appropriate limit to assess radiation doses to the public post-institutional control was the 10 µSv/y conditional clearance level and the appropriate limit to assess radiation emissions was the unconditional clearance level. He pointed out that CNL’s calculations were that under normal circumstances the public would be subjected to 15 µSv/y post-institutional control, and he presented calculations based on the radioactive emissions of each substance in the licenced inventory at closure that showed that most substances’ radioactive emissions, measured in Bq/g, would not reach the unconditional clearance level for thousands, millions, or, in some cases, billions of years post-institutional control.<sup>87</sup> The CCRCA seconded these arguments.<sup>88</sup> The Commission’s failure to even mention these arguments, let alone “meaningfully grapple” with them, renders the Decision unreasonable.

#### **1.4 Failure to Account for Evidence**

59. Finally, the Commission’s failure in this regard could also be considered a failure to account for squarely contradicting evidence, which is fatal to the Decision. A decision will be unreasonable where it fundamentally misapprehends or fails to account for evidence.<sup>89</sup> A decision maker does not

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<sup>85</sup> *Farrier v Canada (Attorney General)*, 2020 FCA 25 at para [12](#).

<sup>86</sup> *Ibid* at para [19](#).

<sup>87</sup> Final Submission from James R Walker, **AR4, Tab 2(110), pp 11931 & 11933**.

<sup>88</sup> Final Submission from CCRCA, **AR4, Tab 2(121), p 12125**.

<sup>89</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [126](#).

need to explicitly mention every piece of evidence, but under the long-standing precedent of *Cepeda-Gutierrez*, it must mention any evidence that “appears squarely to contradict” one of its findings.<sup>90</sup> Since the Commission found that the appropriate dose limit was 1 mSv/y, its failure to mention the evidence from Dr. Walker showing that 10 µSv/y was the appropriate limit makes the Decision unreasonable.

### **1.5 Impact of the Flaw**

60. This failure in justification, transparency, and intelligibility goes to the very core of the decision. No task is more important to the Commission than ensuring the public is not exposed to an unacceptable level of radiation, which can cause cancers and genetic defects. This duty is even more important when it comes to protecting future generations.
61. In 4100 years from now, all memory of the NSDF may be gone, but its effects will remain. In its former place, a suburb may develop, and a pregnant mother may live directly on top of it with no knowledge. It may become a soccer field where children play. Or it may return to being forested land that an Indigenous person lives on and gets their sustenance from. Whoever it is, this person has no say over what we do now, but they will bear the consequences of our actions, so we must ensure we make decisions about these actions with the utmost care.

## **2. CNL Did Not Provide Statutorily Required Information**

62. The Decision is unreasonable because CNL did not provide the information required under s. 3(1)(c) and (j) of the *GNSCR*.<sup>91</sup> Specifically, CNL did not

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<sup>90</sup> *Cepeda-Gutierrez v Canada (Minister of Citizenship and Immigration)*, [1999] 1 FC 53 at para [17](#), 157 FTR 35; recently aff'd *Canada (Attorney General) v Best Buy Canada Ltd*, 2021 FCA 161 at para [123](#), [2021] CarswellNat 2923; and most recently followed in *Espinosa v Canada (Citizenship and Immigration)*, 2024 FC 434 at para [17](#).

<sup>91</sup> *General Nuclear Safety and Control Regulations*, SOR/2000-202, s [6\(b\)](#) requires that an application for a licence amendment identify any changes in the information contained in the most recent application for a licence. Because this amendment is for an entire new project, the NSDF, identifying the changes in information under s. [3\(1\)](#) requires providing all the information in s. [3\(1\)](#) relating to the NSDF.



provide meaningful information about the origin of packaged waste, and the Waste Acceptance Criteria included an overriding Infrequently Performed Operations clause that nullified the comprehensiveness of the information by allowing waste that does not meet the Waste Acceptance Criteria to be placed in the NSDF. By approving the Licence Amendment despite this deficiency, the Commission failed to follow the modern approach to statutory interpretation, failed to comply with specific statutory constraints, failed to meaningfully grapple with central arguments, and failed to account for evidence.

### **2.1 No Meaningful Information about Origin of Packaged Waste**

63. CNL’s application does not state the origin of the packaged waste with any reasonable level of specificity. Firstly, it is impossible to tell what CNL is saying since the two statements differ about the origin of non-CNL waste.<sup>92</sup> One says it will originate from CNL and “off-site commercial sources”<sup>93</sup> and the other says it will originate from CNL and “Canadian generators”.<sup>94</sup>
64. CNL stores nuclear waste from other Canadian companies who import these wastes from around the world.<sup>95</sup> From CNL’s two differing statements about the origin of packaged waste, it appears that packaged waste may originate from anywhere in Canada and any commercial entity in the world. Even if the two statements were read together to create the most restrictive meaning (which is by no means the obvious correct interpretation), the resulting statement would still be so broad as to be useless: packaged waste may originate from any of CNL’s properties or any other company in Canada.
65. Like any other statutory interpretation exercise, the amount of specificity required about the “origin [...] of any radioactive waste” must be determined by

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<sup>92</sup> NSDF Waste Acceptance Criteria, **AR1, Tab 2(1)(II), p 2913**; NSDF Safety Case, **AR1, Tab 2(1)(EE), p 2455**.

<sup>93</sup> NSDF Waste Acceptance Criteria, **AR1, Tab 2(1)(II), p 2913**.

<sup>94</sup> NSDF Safety Case, **AR1, Tab 2(1)(EE), p 2455**.

<sup>95</sup> Submission from Ralliement contra la pollution radioactive, May & June 2022, **AR4, Tab 2(152), p 12506**.

looking at the text, context, and purpose of the provision.<sup>96</sup> The Commission did not examine any of these aspects, but if it had, it may have concluded that a) the text, “origin”, refers to a precise location and source of generation; b) the context from the other specific pieces of information listed (“name”, “quantity”, “volume”, etc.) indicates a high degree of specificity is required; and c) the term should be interpreted in a way that assists the purpose of providing transparency about what waste will be stored in the facility. If a proponent can say “anything on any of our properties or from any other Canadian business” will be put into a nuclear waste facility, the legislator’s purpose in enacting this provision will certainly be thwarted. The Commission’s failure to consider these three elements is unreasonable.<sup>97</sup>

## **2.2 Override Clause Makes Information Incomplete**

66. Regardless, even if all the required information had been provided with adequate specificity, s. 3(1)(c) and (j) would not be met because of the Infrequently Performed Operations override clause that allows unlisted waste to be put into the NSDF.<sup>98</sup> The Commission claimed that the information required by s. 3(1)(c) and (j) was provided in the NSDF Safety Case, NSDF Safety Analysis Report, and NSDF Post-Closure Safety Assessment,<sup>99</sup> but it cannot be reasonably said that these documents list all the waste and radioactive substances that will be put in the NSDF since these documents are based on the Waste Acceptance Criteria. Since the description of the proposed contents of the NSDF contains a statement that waste that is not described can also be put in the NSDF, that description is explicitly not a comprehensive description and does not meet the requirements of s. 3(1)(c) and (j).
67. The Commission’s allowance of a non-comprehensive inventory of the radioactive substances and waste to be stored in the NSDF is unreasonable

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<sup>96</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [120](#).

<sup>97</sup> *Ibid* at para [122](#).

<sup>98</sup> NSDF Waste Acceptance Criteria, **AR1, Tab 2(1)(II), p 3541**.

<sup>99</sup> Decision, para 444, **AR1, Tab 2(1), p 163**.

since it strays beyond the precise language of the regulation. The *GNSCR* does not say the proponent must provide information about most nuclear substances and most radioactive waste to be stored in the facility. It says the proponent must provide information about “any nuclear substance” and “any radioactive waste”.<sup>100</sup> The Decision is thus unreasonable since it is “impossible for an administrative decision maker to justify a decision that strays beyond the limits set by the statutory language it is interpreting.”<sup>101</sup>

### **2.3 Failure to Meaningfully Grapple with Argument**

68. The Decision is also unreasonable because the Commission failed to meaningfully grapple with the arguments from numerous intervenors who submitted that the requirements of s. 3(1)(c) and (j) were not met. Intervenors made in-depth submissions regarding both the inadequacy of the information provided<sup>102</sup> and the effect of the Infrequently Performed Operations clause.<sup>103</sup> All the Commission said in response was that the information was provided in the NSDF Safety Case, NSDF Safety Analysis Report, and NSDF Post-Closure Safety Assessment, and that “CNL’s application is comprehensive”.<sup>104</sup> The Commission provided no details or explanation, and did not respond to even one of the specific points raised by the intervenors. The Commission did not explain why it thought the Infrequently Performed Operations clause did not undermine the comprehensiveness of the information; it did not even mention the clause. This response is akin to that of the Parole Board in *Paul v Canada*,

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<sup>100</sup> *General Nuclear Safety and Control Regulations*, SOR/2000-202, ss [3\(1\)\(c\)](#) & [\(j\)](#), emphasis added.

<sup>101</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [110](#).

<sup>102</sup> Submission from CCRCA, **AR4, Tab 2(121), p 12071**; Submission from Canadian Environmental Law Association, **AR4, Tab 2(151), pp 12425 & 12445**; Submission from the Sierra Club Canada Foundation, **AR4, Tab 2(88), p 11626**; Final submission from Kitchissippi-Ottawa Valley Chapter Council of Canadians, **AR4, Tab 2(92), p 11669**; Presentation from Ottawa Chapter of the Council of Canadians, **AR4, Tab 2(164), pp 13940 & 13942**.

<sup>103</sup> Submission from Northwatch, **AR4, Tab 2(185), p 14275** (Northwatch refers to the “Infrequently Performed Operations” clause by its name from a prior draft: the “Variance Process”); Supplementary submission from Kitigan Zibi Anishinabeg First Nation, **AR4, Tab 2(160), p 12913**; Submission of Ralliement contra la pollution radioactive, May & June 2022, **AR4, Tab 2(152), p 12511**.

<sup>104</sup> Decision, paras 444-445, **AR1, Tab 2(1), p 163**.

which merely said it has not been persuaded by a particular submission.<sup>105</sup> The Federal Court found that this was not “in any way responsive” to the applicant’s submissions.<sup>106</sup>

#### **2.4 Failure to Account for Evidence**

69. This also represents a failure to account for contradictory evidence. Ralliement raised the existence and implications of the Infrequently Performed Operations clause to the Commission. The Commission never mentioned this evidence despite it squarely contradicting the Commission’s finding that CNL’s application was “comprehensive”. This makes the Decision unreasonable.<sup>107</sup>

#### **2.5 Impact of the Flaw**

70. The Commission’s failure to require the specific and comprehensive information set out in *GNSCR* s. 3(1)(c) and (j) has an enormous impact on the integrity of the Decision as a whole. This failure undermines the Decision’s main conclusion that the NSDF will not produce significant adverse environmental and health effects. All CNL’s calculations estimating the amount of radioactive material that the NSDF would release into the environment and would expose a member of the public to were based on the Waste Acceptance Criteria being followed.<sup>108</sup> Since materials can be placed in the NSDF even if they do not meet the Waste Acceptance Criteria, all the calculations and estimations are a fiction. There is no guarantee that the amount and type of substances that end up in the NSDF will be the same amount and type as that upon which the calculations for the safety assessments were made.

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<sup>105</sup> *Paul v Canada (Attorney General)*, 2022 FC 1157 at para [32](#).

<sup>106</sup> *Ibid.*

<sup>107</sup> *Cepeda-Gutierrez v Canada (Minister of Citizenship and Immigration)*, [1999] 1 FC 53 at para [17](#), 157 FTR 35.

<sup>108</sup> The Safety Case and Safety Assessment for the Disposal of Radioactive Waste, IAEA, 2012, **AR1, Tab 2(1)(Z), pp 1314, 1339 & 1369**; NSDF Safety Case, **AR1, Tab 2(1)(EE), pp 2264 & 2570-2572**.

### **3. Commission Failed to Meaningfully Grapple with Central Arguments**

71. The Decision is unreasonable because it fails to meaningfully grapple with three other of the Applicants' central arguments.<sup>109</sup> In their submissions, the Applicants and other intervenors raised the following important issues, and the Commission did not meaningfully grapple with any of them:

- 1) CNL's process for verifying that waste placed in the NSDF complies with the Waste Acceptance Criteria is inadequate;
- 2) Active bear dens and Eastern Wolves' habitat would be damaged or destroyed by NSDF site preparation and construction; and
- 3) CNL did not provide sufficient information for the Commission to consider all of the cumulative effects under s. 19(1)(a) of *CEAA, 2012*.

#### **3.1 Inadequate Waste Verification**

72. Dr. Walker and CCRCA submitted that CNL's process for verifying that waste placed in the NSDF complies with the Waste Acceptance Criteria is inadequate.<sup>110</sup> Dr. Walker elaborated that international safety standards require that a management system be established and adhered to that integrates all aspects of the waste acceptance process. Because of this, one would expect CNL's proposal to include a waste reception and verification facility with appropriate technical equipment and management systems to verify compliance with the Waste Acceptance Criteria. However, this was not part of the proposal. Dr. Walker also stated that his review of the documentation did not reveal a technical capability nor an associated management system to comprehensively verify that waste packages and unpackaged waste complied with the radiological parameters of the Waste Acceptance Criteria.<sup>111</sup> Dr.

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<sup>109</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [128](#); *Turner v Canada (Attorney General)*, 2022 FCA 192 at para [8](#).

<sup>110</sup> Final Submission from James R Walker, **AR4, Tab 2(110), p 11931**; Final Submission from CCRCA, **AR4, Tab 2(121), p 12125**.

<sup>111</sup> Final Submission from James R Walker, **AR4, Tab 2(110), p 11931**.

Walker submitted that this put Canada in contravention of its treaty obligations.<sup>112</sup>

73. The Commission did not address this argument in the Decision. It did not even mention that it had been made.

### **3.2 Species at Risk**

74. Under s. 79 of the *Species at Risk Act* (“**SARA**”),<sup>113</sup> the Commission was required to identify any adverse effects on any species listed in *SARA*’s Schedule 1 (“**Schedule 1**”) and on the species’ critical habitat and “ensure that measures are taken to avoid or lessen those effects”.<sup>114</sup>
75. CCRCA and two First Nations intervenors<sup>115</sup> submitted that there are Eastern Wolves at the proposed NSDF site, and mitigation measures needed to be taken.<sup>116</sup> Eastern Wolves are listed in Part 4 of Schedule 1 as a species of concern.
76. The Commission failed to meaningfully grapple with this submission. Instead, the Commission off-loaded the responsibility of ensuring that CNL takes mitigation measures to Environment and Climate Change Canada (“**ECCC**”), saying, “CNL is required to obtain a permit from ECCC under section 73 of the *SARA* prior to the construction of the NSDF that will define the overarching requirements for the protection of species”.<sup>117</sup> On the speculative basis of these measures that might be put into place in the future, the Commission determined that the NSDF “is not likely to cause significant adverse environmental effects on the species at risk”.<sup>118</sup>

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<sup>112</sup> Final Submission from James R Walker, **AR4, Tab 2(110), p 11935**.

<sup>113</sup> *Species at Risk Act*, SC 2002, c 29.

<sup>114</sup> *Species at Risk Act*, SC 2002, c 29, s 79.

<sup>115</sup> Kebaowek First Nation and Kitigan Zibi Anishinabeg First Nation.

<sup>116</sup> Final Submission from CCRCA, **AR4, Tab 2(121), p 12120**; Supplementary Submission from Kebaowek First Nation, **AR4, Tab 2(158), pp 12739-12743**; Final Submission from Kebaowek First Nation and Kitigan Zibi Anishinabeg First Nation, **AR4, Tab 2(158), p 12823**.

<sup>117</sup> Decision, para 234, **AR1, Tab 2(1), p 107**.

<sup>118</sup> *Ibid.*

77. However, CNL's need for a *SARA* permit does not justify the Commission's failure to ensure measures would be taken to lessen the effects on Eastern Wolves. CNL does not need a *SARA* s. 73 permit to harm, kill, or destroy the habitat of Eastern Wolves, since ss. 32 and 33 of *SARA* only prohibit harming, killing, and destroying the habitat of species listed in Parts 1-3 of Schedule 1 (extirpated, endangered, and threatened species). Eastern Wolves are in Part 4. CNL only needs a s. 73 permit to authorize it to harm those species that ss. 32 and 33 prohibit it from harming; it does not need one to harm Eastern Wolves.
78. Under s. 79(2) of *SARA*, the Commission had an obligation to ensure measures were in place to reduce effects on all species in Schedule 1, including those in Part 4. By offloading that duty in relation to the Eastern Wolf to a speculative *SARA* permit process that is not, in fact, required for the Eastern Wolf, the Commission abdicated its duty, did not comply with the strict statutory requirements of *SARA* s. 79(2), and failed to grapple with the intervenors' submissions that the Eastern Wolf would be harmed.

### **3.3 Cumulative Effects**

79. Paragraph 19(1)(a) of *CEAA, 2012* required that the Commission consider "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".<sup>119</sup> CCRCA submitted that this was not possible because CNL had not provided the Commission with sufficient information about many other activities at Chalk River.
80. CCRCA noted nine waste-related projects that were posted to the federal Impact Assessment Registry from November 2020 to March 2021, for which CNL provided no information:
- 1) CNL Cask Facility Project;

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<sup>119</sup> *Canadian Environmental Assessment Act, 2012*, SC 2012, c 19, s 52, s [19\(1\)\(a\)](#).

- 2) CNL Intermediate Level Waste Storage Area;
  - 3) CNL Bulk Storage Laydown Area;
  - 4) CNL Material Pit Expansion Project;
  - 5) CNL Access Road Upgrade;
  - 6) CNL Building Demolition Project;
  - 7) CNL Waste Management Area Modification Project;
  - 8) CNL Effluent Monitoring Stations Upgrade Project; and
  - 9) CNL Multi-Purpose Waste Handling Facility.<sup>120</sup>
81. The Commission did not meaningfully grapple with these submissions in the Decision. The Commission said it noted intervenors' concerns and asked for additional information from CNSC staff. The Commission said, "CNSC staff noted that Table 8.5 in its EA Report lists the past, present, and reasonably foreseeable future projects that were included in CNL's cumulative effects assessment."<sup>121</sup>
82. The Commission listed some past and future activities, but neither the Commission nor Table 8.5 of the EA Report mentions many of the activities the intervenors had listed.<sup>122</sup> Only one of the nine projects CCRCA listed could be considered to be noted in Table 8.5: the CNL Building Demolition Project. None of the other projects fall under any of the physical activity descriptions in the Table. Thus, the Commission simply ignored the main point of the submissions, which was that the information was not comprehensive.
83. Besides being a failure to grapple with arguments, this error could also be

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<sup>120</sup> Presentation from CCRCA, **AR4, Tab 2(121), p 12099**.

<sup>121</sup> Decision, para 283, **AR1, Tab 2(1), p 119**.

<sup>122</sup> *Ibid*; EA Report, Submission from CNSC staff, **AR3, Tab 2(44), p 10375**.



characterized as a failure to account for the evidence CCRCA presented<sup>123</sup> and a straying beyond the limits of the statutory language by approving a project without considering all the cumulative effects as required by *CEAA, 2012* s. 19(1)(a).<sup>124</sup>

#### **PART IV – RELIEF SOUGHT**

84. Based on the foregoing, the Applicants seek the following relief:
- a. An order setting aside the Decision and referring it back to the Commission for redetermination;
  - b. The costs of this application; and
  - c. Such further and other relief as counsel may request and this Honourable Court may permit.

**ALL OF WHICH IS RESPECTFULLY SUBMITTED THIS 21 May 2024**



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**HAMEED LAW**  
Barristers and Solicitors  
43 Florence Street  
Ottawa, ON K2P 0W6

**Nicholas Pope**  
T: 613-656-6917  
F: 613-232-2680  
E: npope@hameedlaw.ca

**Lawyer for the Applicants,  
CONCERNED CITIZENS OF  
RENFREW COUNTY AND AREA**

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<sup>123</sup> *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at para [126](#).

<sup>124</sup> *Ibid* at para [110](#).

## **PART V – LIST OF AUTHORITIES**

### **Legislation**

- 1 [Canadian Environmental Assessment Act, 2012](#), SC 2012, c 19, s 52
- 2 [General Nuclear Safety and Control Regulations](#), SOR/2000-202
- 3 [Nuclear Safety and Control Act](#), SC 1997, c 9
- 4 [Nuclear Substances and Radiation Devices Regulations](#), SOR/2000-207
- 5 [Radiation Protection Regulations](#), SOR/2000-203
- 6 [Species at Risk Act](#), SC 2002, c 29

### **Jurisprudence**

- 7 [Canada \(Attorney General\) v Best Buy Canada Ltd](#), 2021 FCA 161
- 8 [Canada \(Minister of Citizenship and Immigration\) v Vavilov](#), 2019 SCC 65
- 9 [Cepeda-Gutierrez v Canada \(Minister of Citizenship and Immigration\)](#), [1999] 1 FC 52, 157 FTR 35
- 10 [Espinosa v Canada \(Citizenship and Immigration\)](#), 2024 FC 434
- 11 [Farrier v Canada \(Attorney General\)](#), 2020 FCA 25
- 12 [Mason v Canada \(Citizenship and Immigration\)](#), 2023 SCC 21
- 13 [Paul v Canada \(Attorney General\)](#), 2022 FC 1157
- 14 [Turner v Canada \(Attorney General\)](#), 2022 FCA 192

### **International Instruments**

- 15 [Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management](#), 5 September 1997, Can TS 2001 no 10 (entered into force 24 December 1997, ratification by Canada 7 May 1998)