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**Written submission from the
Canadian Environmental
Law Association**

**Mémoire de l'Association
canadienne du droit de
l'environnement**

**Regulatory Oversight Report for
Canadian Nuclear Laboratories
Sites: 2021**

**Rapport de surveillance
réglementaire pour les sites
des Laboratoires Nucléaires
Canadiens : 2021**

Commission Meeting

Réunion de la Commission

November 2, 2022

Le 2 novembre 2022

**SUBMISSION BY THE CANADIAN ENVIRONMENTAL LAW ASSOCIATION
TO THE CANADIAN NUCLEAR SAFETY COMMISSION REGARDING THE
REGULATORY OVERSIGHT REPORT FOR CANADIAN NUCLEAR
LABORATORIES: 2021**

October 4, 2022

**Prepared by
Sara Libman, Legal Counsel**

I. INTRODUCTION

This submission is filed in response to the Canadian Nuclear Safety Commission’s (“CNSC”) Notice of Participation at a Commission Meeting and Participant Funding dated April 25, 2021² in respect of the *Regulatory Oversight Report for Canadian Nuclear Laboratories: 2021* (herein “ROR”).¹ A meeting with respect to this matter is scheduled for November 2-3, 2022.

Expertise of the Intervenor

The Canadian Environmental Law Association (“CELA”) is a non-profit, public interest law organization. For over 50 years, CELA has used legal tools to advance the public interest, through advocacy and law reform, in order to increase environmental protection and safeguard communities across Canada. CELA is funded by Legal Aid Ontario as a specialty legal clinic, to provide equitable access to justice to those otherwise unable to afford representation.

CELA has an extensive library of materials related to Canada’s nuclear sector which is publicly available on our website.² CELA has engaged in detailed research and advocacy related to public safety and environmental protection by seeking improvements to the oversight of Canada’s nuclear facilities and sites, and is engaged in all of the federal environmental assessments for projects proposed by Canadian Nuclear Laboratories (“CNL”).

¹ CNSC, “Canadian Nuclear Laboratories—Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2021” (21 July 2022), CMD 22-M33 [2021 ROR]

² Canadian Environmental Law Association, online: www.cela.ca

II. FINDINGS

CELA has routinely participated in the annual ROR meeting for CNL.³ In response to the 2021 ROR, CELA raises a number of issues relating to the ROR's scope and content and provides the following comments relating to CNSC's review of nuclear power generating sites and activities. Our findings are set out below, accompanied by either requests or recommendations to the Commission and CNSC Staff.

The overarching goal of the comments submitted by CELA is to recommend improvements in the 2021 ROR and make requests to ensure that CNSC Staff provides relevant, additional information when the ROR is before the Commission. CELA furthermore intends these comments to be considered when drafting the upcoming ROR for 2022.

A. Scope and Process for Regulatory Oversight Reports

CELA has reviewed the ROR in detail and finds it necessary to reiterate our ongoing concerns with the ROR process, its utility and use. As a review of the ROR demonstrates, there is a wide range of activities—each with varying levels of risk, timelines, scope and environmental assessment applicability – demonstrating the crucial need for opportunities to review CNL activities and sites.

A number of our recommendations are aimed at making the ROR more accessible and informative, and enhancing the data and analysis in support of the CNSC Staff's conclusions. These recommendations are based on the ROR's recognition that:

The Nuclear Safety and Control Act mandates the CNSC to disseminate objective scientific, technical and regulatory information to the public concerning its activities and the activities it regulates. CNSC staff fulfill this mandate in a variety of ways, including hosting in-person and virtual information sessions and through annual regulatory reports.⁴

We also make the following general comments about the efficacy of the CNSC's regulatory oversight review process.

*First, CELA **submits** that intervenors who provide comments on an ROR should have an opportunity to present orally before the Commission. This remains an outstanding*

³ See for instance, Submission by Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Canadian Nuclear Laboratories: 2018; Submission by Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Canadian Nuclear Laboratories: 2019; Joint Submission by Canadian Environmental Law Association and the Concerned Citizens of Renfrew County and Area to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Canadian Nuclear Laboratories: 2020.

⁴ 2021 ROR, p. 36.

recommendation and one which requires remedying to advance the public value of this process. Currently, only Indigenous intervenors may present before the Commission. While CELA supports deeper engagement with Indigenous intervenors, we **submit** that the Commission’s refusal to provide all public interest intervenors the opportunity to engage in dialogue with Commissioners and CNSC Staff maintains the high-level nature of RORs and does not facilitate critical review.

During the Commission Meeting on November 25, 2021, Commission Member Maharaj sought clarification with regard to allowing some intervenors to present and others not, stating: “I was particularly taken aback by the fact that the CELA intervenor was not allowed to give an oral presentation, where they seem to be wanting to give an oral presentation.”⁵

Marc LeBlanc, then Commission Secretary, explained that the decision to only allow written interventions is “more historical than anything else,” and that the written form for interventions was chosen to avoid “spending a day or two on a particular ROR”.⁶ Allowing Indigenous peoples to present verbally arose in the spirit of reconciliation and the recognition of oral traditions of Indigenous Nations and communities. LeBlanc noted that opening up verbal presentations to other intervenors would be considered as part of the review of the ROR process in January 2022.⁷

In April 2021, the CNSC sought public feedback on the regulatory oversight review process via a discussion paper “regarding the audience, purpose and frequency of the RORs.”⁸ During the public consultation period from April to June 2021, CELA wrote to the CNSC requesting that our years of ROR interventions, and procedural comments therein, be accounted for in the review process. According to a presentation on this topic during a CNSC Meeting on January 27, 2022,⁹ a number of changes have been implemented, such as:

- Plain Language Executive Summaries;
- Greater use of hyperlinks for readily available online content;
- Data to include error bars on graphs, explanation on sampling and analytical techniques, and sources of equations;
- Clarification of rating definitions and removal of ‘Fully Satisfactory’; and
- Acknowledgement of Indigenous Nations and communities.

⁵ CNSC, Transcript of November 25, 2021 Commission Meeting, p. 259, online: <https://www.cnscccsn.gc.ca/eng/the-commission/pdf/Transcript-2021-11-25-Meeting-e.pdf> [Transcript].

⁶ Transcript, p. 260

⁷ Transcript, p. 261.

⁸ CNSC, “The Canadian Nuclear Safety Commission: Oversight Report Review” Discussion Paper 21-01 (April 2021), online: https://www.nuclearsafety.gc.ca/eng/pdfs/Discussion-Papers/21-01/Discussion_Paper_DIS-21-01_The_Canadian_Nuclear_Safety_Commission_Regulatory_Oversight_Report_Review.pdf

⁹ CNSC, “Update on the CNSC Staff Review of the Regulatory Oversight Report Process”, Staff Presentation to the Commission, CMD-22-M5 (January 27, 2022), online: <https://www.nuclearsafety.gc.ca/eng/the-commission/meetings/cmd/pdf/CMD22/CMD22-M5.pdf>, p. 16.

CELA is disappointed that the CNSC's review of the Regulatory Oversight Review process did not result in a more robust overhaul of RORs, and specifically that oral presentations have not been expanded to all ROR intervenors.

Second, last year, CELA commented on the discontinuance of webinars that targeted the public.¹⁰ During last year's Commission Meeting, it was explained that the public webinars usually provide a general overview of what the ROR contains, the findings, and how to participate. The rationale for discontinuing these webinars included the following determinations:

- low attendance rate;
- polling surveys at the webinars suggesting that either information was already well-known or that participants had no intention of intervening at the Commission proceeding; and
- there has been an increasing trend that the majority of intervenors are Indigenous Nations and communities, so the CNSC pivoted to piloting Indigenous engagement sessions.¹¹

While CELA supports the increased consultation and engagement with Indigenous communities related to the ROR, we **submit** that webinars targeted to the public should not be discontinued. These outreach events are often the only opportunity for members of the public to engage with CNSC staff about the ROR prior to its release. The CNSC indicated that these webinars had low attendance rates, but did not specify what the CNSC considered to be "low attendance". As for polling surveys suggesting that information was already well-known, the intervenor would like to know whether CNSC staff polled at these webinars to see what sorts of topics and information the general public would like to obtain through these webinars. If webinars targeting the public focused on the information that the general public is seeking clarity on, then attendance would likely increase. CELA **recommends** that the CNSC reintroduce webinars and other outreach activities related to the ROR that target the public.

Third, given the uniqueness of this report to CNL specifically, we submit there could have been greater discussion of overarching conclusions and findings related to CNL's actions. For instance, regardless of location or site, how does CNL compare to other licensees? Is there a best practice at one CNL site which could be transferred to other sites or like-licensees? The intervenor once again **submits** the ROR is an ideal format for review such as this but as currently drafted, it makes only limited use of this critical review opportunity.

¹⁰ 2020 ROR, p. 30.

¹¹ Transcript, pp. 267-268.

Recommendations

1. CELA remains of the view that ROR meetings are not a replacement for relicensing hearings¹² and the CNSC must remedy the discrepancy in participation rights among public intervenors and licensees by providing oral presentation opportunities.
2. The CNSC should reintroduce webinars and other outreach activities to the ROR that target the public.
3. The ROR should include greater discussion of overarching conclusions and findings related to CNL's actions and how they compare to other licensee's undertakings and sites.

B. Projects Undergoing Federal Environmental Assessment

In order to fully capture the extent of changes at CNL sites, CELA **recommends** that the table in Appendix C, which contains a list of changes to CNL Licences and Licence Conditions Handbooks ("LCH") in 2021, be amended to include updates reflective of ongoing federal environmental assessments ("EAs"). In a number of instances, CNL sites are undergoing federal EAs per the *Canadian Environmental Assessment Act* ("CEAA 2012") and yet there are few comments in the ROR which mention the EAs, and no comments describing the effect of these EA decisions on existing licences and LCHs.

CELA has raised this recommendation in previous ROR submissions, however, our comments were not addressed during the 2020 Commission Meeting and our recommendation has not been taken up in this year's ROR. The intervenor **requests** that the Commission, as a lifetime regulator address the basis on which it has determined that ongoing EAs are not relevant to the ROR.

Recommendation

4. In addition to summarizing changes to CNL Licences and Licence Conditions Handbooks, the 2021 ROR should present updates, where applicable, regarding ongoing federal environmental assessments.

¹² Canadian Environmental Law Association & Coalition for Responsible Energy Development in New Brunswick, "Joint Submission by the Coalition for Responsible Energy Development and the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Renewal of the Point Lepreau Nuclear Generating Station Power Reactor Operating Licence." Hearing Reference: 2022-H-02 (March 28, 2022), online: <https://cela.ca/wp-content/uploads/2022/03/Submission-Point-Lepreau-Nuclear-Generating-Station.pdf>, p. 17.

C. Chalk River Laboratories

i. Advanced Nuclear Materials Research Centre

The 2021 ROR highlights several major activities at Chalk River Laboratories (“CRL”), such as the planned construction of the Advanced Nuclear Materials Research Centre (“ANMRC”). The ROR notes that “in November 2021, CNL publicly announced the signing of a multi-party integrated project delivery agreement for the design and construction of the Advanced Nuclear Materials Research Centre (ANMRC) construction site.”¹³ The ANMRC’s detailed design is ongoing and construction work was scheduled to commence in spring 2022 with construction of the main building elements intended to begin in spring-summer 2023. The ROR does not go into great detail about this project, aside from stating that “the ANMRC will consolidate existing laboratories and hot cells located at CRL and is anticipated to be one of the largest active research laboratories in Canada.”¹⁴ For instance, the ROR does not state the need or purpose of this project, whereas the following information was provided within the public announcement:

The ANMRC will also support Canada’s clean energy goals by providing services critical to the life extension and long-term reliability of existing reactors, including Canada’s fleet of CANDU® nuclear power reactors and other designs from around the world. As the largest single capital investment in the revitalization of the Chalk River campus, the ANMRC will be a 10,000 square metre research complex that will accommodate 240 employees and consolidate key capabilities from aging facilities that are scheduled for decommissioning. The ANMRC will feature 12 new shielded cells that will enable post-irradiation examination of small modular reactor (SMR) and next-generation nuclear fuels, and glovebox facilities to support the development of advanced fuel fabrication concepts.¹⁵

The intervenor **submits** that when discussing significant developments at CNL sites, there should be at least a brief discussion of the purpose, required licences and a review of procedural next steps, should the proposal proceed. CELA **recommends** that the ROR provide a description for any major activities discussed at each licence site.

ii. Global First Power Small Modular Reactor

Global First Power is proposing a first-of-a-kind small modular reactor (SMR) at the CRL site in Deep River, Ontario. In addition to the ongoing federal environmental assessment, the proponent

¹³ 2021 ROR, p. 7.

¹⁴ 2021 ROR, p.7.

¹⁵ CNL, “Project agreement signed for construction of Advanced Nuclear Materials Research Centre” (November 29, 2021), News and Announcements, online: [cnl.ca/project-agreement-signed-for-construction-of-advanced-nuclear-materials-research-centre/](https://www.cnl.ca/project-agreement-signed-for-construction-of-advanced-nuclear-materials-research-centre/)

has submitted an application for a licence to prepare a site for a SMR at CRL, on lands owned by Atomic Energy of Canada Limited.¹⁶ We have a number of concerns regarding its complete lack of inclusion in this year’s report.

First, the 2021 ROR does not mention Global First Power’s proposal for an SMR at the CRL site, even though it was addressed in the 2020 ROR.¹⁷ During the Commission Meeting last year, it was noted that a project host agreement with Global First Power was signed in support of their work to site a SMR at Chalk River.¹⁸ During this Meeting, Kebaowek First Nation expressed concerns about the Commission’s approval of the EIS guidelines for the scope of this SMR, stating that the approval “...must be revisited and include scoping and revisions by both Kebaowek First Nation and the Algonquin Anishinaabeg First Nation tribal council members who were excluded from contributing to the guidelines.”¹⁹ Despite this update from the Commission and the concerns from Kebaowek First Nation during the Commission Meeting, the 2021 ROR makes no mention of Global First Power’s proposed SMR.

Second, given that Global First Power is proposing a first-of-a-kind SMR and it was proposed to be “operational” by 2023²⁰ – CELA strongly **recommends** the ROR be updated to include an update on the federal EA and licensing for the project. This project is particularly critical to SMR deployment in Canada and its progress ought to be shared publicly, as according to the Canadian Nuclear Association’s (CNA) vision for SMRs in Canada, as stated in its A Call to Action: A Canadian Roadmap for Small Modular Reactors released in November 2018, this demonstration project at CRL could lead to the commercialization of SMRs by 2026.

Given the immanency of these timelines, CELA **requests** that the Commission provides a comprehensive update of the SMR project, namely its EA and licensing timelines at the forthcoming meeting. We further **recommend** that the ROR function as a comprehensive and evergreen documents to ensure updates are made to the text when available, such that timely updates from the Commission can be disseminated to the public.

iii. Integrated Waste Strategy

Last year, CELA noted that the 2020 ROR made no mention of CNL’s Integrated Waste Strategy²¹, which lays out a plan to dispose of CNL managed Low Level Waste at CRL and to transfer CNL

¹⁶ See CELA’s comments on the Global First Power’s project description for its federal environmental assessment (1 June 2020): <https://cela.ca/wp-content/uploads/2020/06/Intervention-from-CELA-and-Dr-Ramana-Global-First-Power-Scope-of-EA-Ref-No.-80182.pdf>

¹⁷ 2020 ROR, p. 7

¹⁸ Transcript, p. 60

¹⁹ Transcript, p. 155.

²⁰ Global First Power, “Project Description for the Micro Modular Reactor™ Project at Chalk River” (8 July 2019), online: <https://globalfirstpower.com/documents/project-description-english-july-2019-pdf/> at p. 27.

²¹ CNL Integrated Waste Strategy, p. 1-2.

managed Intermediate Level Waste and High Level Waste from other sites to CRL for storage until final disposal is available. Discussion of CNL's Integrated Waste Strategy is also missing from the 2021 ROR. At last year's Commission Meeting, the rationale for excluding the Integrated Waste Strategy was provided by Candida Cianci, the Director of the Canadian Nuclear Laboratories Regulatory Program Division at the CNSC:

...it's a guiding document for CNL in terms of the strategic approach that they're taking to waste management for CNL sites. It is referenced in the preamble of our Licence Condition Handbook for CNL, but it's not a compliance verification criteria. So it's not referenced in the ROR, because the ROR—or the scope of the ROR, is to cover staff's evaluation of licensee's performance with regulatory requirements, and this is a guiding document for CNL.²²

CELA **submits** that just because the Integrated Waste Strategy is a guiding document for CNL, it still fits within the scope of the ROR. For example, one Commission Member read through the strategy on CNL's website, and found it to be "...a very useful high-level context document for the various projects."²³ While the ROR's scope is to cover staff's evaluation of licensee's performance with regulatory requirements, having an understanding of the strategies guiding CNL's compliance with waste management makes the Integrated Waste Strategy a tool worth including in the ROR for the benefit of CNSC staff, intervenors, and the general public. Therefore, CELA continues to **recommend** that a discussion of the Integrated Waste Strategy and the consolidation of high, intermediate, and low-level waste at CRL be included in the ROR.

The 2021 ROR also makes no mention of the extensive transport of radioactive materials that has been, continues to be, and will be taking place in order to achieve the aforementioned consolidation of radioactive waste at CRL. The ROR simply states: "CNL safely manages low-level waste, intermediate-level waste, and high-level radioactive waste at the site."²⁴ CELA had raised concerns in last year's ROR submission about the increased risks associated with the transportation of radioactive waste—specifically increased radiation exposures and increased risk of transport accidents—for which CELA had **recommended** that the ROR should provide an update on the status of CNL's waste transfer activities, and specifically, state that the High Level Waste transfer from Whiteshell to CRL will be in summer 2022. This concern was shared by Kebaowek First Nation during last year's Commission Meeting.²⁵

The transfer of wastes is critical to the CNSC's oversight as Canada's nuclear safety regulator. At last year's Commission Meeting, the transportation of waste was a concern for various intervenors, and it was explained that there are no routing requirements established under the packaging and

²² Transcript, pp. 175-176.

²³ Transcript, p. 172.

²⁴ 2021 ROR, p. 6.

²⁵ Transcript, p. 166.

transport of nuclear substance regulations and the transport of dangerous good regulations.²⁶ The ROR provides an opportunity for the CNSC to consider issues like waste transfers and the licensing of the casks in which these transfers occur. This should be addressed at the upcoming Commission Meeting, as a matter of significant public interest, especially to the communities living en route.

In last year's submission, CELA identified numerous waste-related projects that were posted on the Federal Impact Assessment Registry under section 82 of the *Impact Assessment Act* ("IAA")²⁷ during the period from November 2020 to March 2021. CELA specifically mentioned nine projects which had a "Notice of Determination" issued by CNL. CELA submitted that the ROR should clarify that AECL, and not CNL, is the federal authority responsible for making determinations as to whether these projects have significant environmental impacts. CELA also noted that none of the projects were mentioned in the 2020 ROR, lending to a lack of transparency and a lack of opportunities for public engagement.

This topic was touched upon during last year's Commission Meeting, in which compliance with the IAA was discussed. AECL noted that they are the ultimate decision maker with respect to the projects, but CNL provides expert advice and review, "and as the Site Manager and operator, they provide that review to AECL. Yes, we work very closely with CNL on these determinations and fully accept we are the decision maker as the federal authority for these projects."²⁸ CELA **submits** that the ROR should clarify that AECL is the federal authority responsible for making determinations as to whether projects subject to the IAA have significant environmental impacts.

Because the 2021 ROR does not specifically mention the projects that CELA referenced last year, nor does it mention any projects that were added to the IAA registry in 2021, CELA **recommends** including a description of the current plans of projects listed on the IAA Registry, and an overview of CNL's analysis for determining that they are not likely to cause significant environmental effects.

CELA also notes that the ROR makes no reference to CNL's role in the implementation of the Federal Nuclear Science and Technology Work Plan, which is meant to "leverage the vast experience and expertise at the Chalk River Laboratories—Canada's largest science and technology complex—to contribute to the government's health, science, innovation and climate change objectives."²⁹ Last year, CELA **recommended** that CNL's role in the implementation of this Plan be addressed at the upcoming Commission Meeting. Because this was not discussed last year, CELA reiterates that CNL's implementation of this Plan be addressed at the upcoming Commission Meeting.

²⁶ Transcript, p. 177.

²⁷ Impact Assessment Act, SC 2019, c 28.

²⁸ Transcript, pp. 272-273.

²⁹ <https://www.aecl.ca/science-technology/federal-science-and-technology-work-plan/>

Recommendations

5. The ROR should provide a description for any major activities discussed at each licence site.
6. The ROR should be updated to include an update on the federal EA and licencing for the Global First Power SMR project.
7. The Commission should provide a comprehensive update of the SMR project, namely its EA and licensing timelines at the forthcoming Commission Meeting.
8. The ROR should function as a comprehensive and evergreen document to ensure updates are made to the text when available, such that timely updates from the Commission can be disseminated to the public.
9. The ROR should include a discussion of the Integrated Waste Strategy and the consolidation of high, intermediate, and low-level waste at CRL.
10. The ROR should provide an update on the status of CNL's waste transfer activities, and specifically, state that the High Level Waste transfer from Whiteshell to CRL will begin in summer 2022.
11. The ROR should include a description of waste-related projects posted to the federal Impact Assessment Agency Registry since November 2020, and an overview of CNL's analysis for determining that they are not likely to cause significant adverse environmental effects.
12. CNL's role in the implementation of the Federal Nuclear Science and Technology Work Plan should be addressed at the upcoming ROR meeting.

D. Major Activities at Whiteshell Laboratories

The 2021 ROR mentions that at Whiteshell Laboratories (“WL”) CNL prepared a Recoverable Surface Storage and Staging Area (RSSSA) consisting of an outdoor, above ground storage pad to enable the storage and loading of solid low-level waste in sea land containers and storage of oversized low-level waste items awaiting further processing, characterization and/or packaging prior to off-site disposition. The ROR notes that the RSSSA was placed into service in early 2022.³⁰

³⁰ 2021 ROR, p. 8.

This project was not mentioned in last year's ROR, nor was it discussed during last year's Commission Meeting. It is unclear as to what process approved the construction of the RSSSA. There is also no indication of the storage capacity of the RSSSA, where it is located on the site, or how long waste may be stored in this area. CELA **requests** further information surrounding the operations of the RSSSA and its relevancy to the ongoing federal EA for the decommissioning of WL.

Recommendation

13. Additional information about the operations of the Recoverable Surface Storage and Staging Area and its relevancy to the ongoing federal EA is requested.

E. Port Hope Area Initiative

The Port Hope Area Initiative ("PHAI") and the Port Hope Project ("PHP") are given scant discussion within the 2021 ROR. The Plain Language Summary states:

On September 10, 2021, CNL submitted an application requesting a 10-year licence renewal for its Port Hope Project (PHP) Waste Nuclear Substance Licence (WNSL) and consolidate the PHP licence with 3 other WNSLs associated with the PHAI into a single WNSL for a 10-year licence term. CNL's application will be presented to the Commission on November 22, 2022. At this hearing, CNSC staff will be presenting their assessment of CNL's performance, therefore PHAI is not part of this ROR.³¹

Despite PHAI being excluded from the ROR, CNSC staff dedicated 5,150 hours of regulatory effort on PHAI.³² Because PHAI was not included in the ROR, there is no discussion of what regulatory issues were considered by CNSC staff.

CELA **submits** that seeking a licence renewal for a project is not reason to exclude a site from the ROR. Because CNSC staff will presenting their assessment of CNL's performance at the November 22, 2022 hearing, that information is not being shared in this ROR alongside other CNL licenced sites. Providing a brief summary of PHAI's SCA compliance, especially with regard to environmental compliance is of great value to individuals who may read this ROR, but may not have the opportunity to observe the licensing hearing. Considering that the concerns surrounding the Port Hope Project's climate resiliency was a topic discussion at last year's Commission Meeting (and the subject of CELA's submissions last year), it is unfortunate and a gap in the 2021 ROR that it does not discuss information regarding monitoring results for the PHP/PHAI .

³¹ 2021 ROR, p. 1.

³² 2021 ROR, p. 13.

CELA **recommends** that the ROR include all CNL sites and their compliance assessments, regardless of an upcoming hearing. This ensures that the public has access to comparable data for all of CNL’s operations across the country.

Recommendation

14. RORs should include all CNL sites and the compliance assessments, regardless of an upcoming ROR. The 2021 ROR should include the PHAI/PHP.

F. Decommissioning

i. In Situ Decommissioning Projects

Two CNL in situ decommissioning projects are currently undergoing federal EA’s. CELA has made recommendations for the 2019 and 2020 RORs, which were not addressed in either Commission Meetings, or the 2021 ROR. CELA therefore provides the following comments specific to the Whiteshell Laboratories Reactor (“WR-1”) and the Nuclear Power Demonstration (“NPDWF”) projects.

Regarding WR-1, the ROR states, “CNL continues to work on the proposal to change the decommissioning approach for WR-1 from full dismantlement to in-situ decommissioning.”³³ While the decommissioning relicensing hearing for the Whiteshell site noted that the basis for this change in decommissioning planning was, in part, one of economic advantage.³⁴ This explanation remains absent from the text of the ROR, and CELA once again **recommends** the ROR include the reasons why CNL is requesting a change in decommissioning approach (e.g., monetary or time constraints, difficulty in achieving full dismantlement, or revised assessments of the risks posed by the two competing decommissioning approaches). Last year, CELA submitted that CNSC staff have claimed that “exceptional circumstances” warrant the in-situ decommissioning of WR-1.³⁵ Because this was not explained at last year’s Commission Meeting, CELA again **submits** that CNSC staff should explain what “exceptional circumstances” have emerged since the original decision was made to fully dismantle the reactor.

As an outstanding recommendation, CELA again **recommends** the ROR explain how CNL and the Commission, respectively, weighted economic, environmental, human health, risk and safety

³³ 2021 ROR, p. 8.

³⁴ Transcript of the Canadian Nuclear Safety Commission’s Public hearing, October 3rd, 2019, p. 107, online: <https://nuclearsafety.gc.ca/fra/the-commission/pdf/2019-10-03-TranscriptHearing-f.pdf>.

³⁵ S. Thompson, NSDF/ISD Fall Series #2: Long-term Safety of Disposal Facilities and In Situ Decommissioning Regulatory Framework, webinar, October 20, 2021.

considerations. It is critical that the Commission probe and provide further information about the reasons for this change in decommissioning approach. This is precisely the type of information that should be in the public domain and this ROR presents the perfect opportunity to enhance the transparency of CNSC decision-making and analysis.

Further, given CNSC's mandate to ensure the adequate protection of human health and the environment, per section 24(4) of the *Nuclear Safety and Control Act* ("NSCA"), the intervenor submits it is appropriate for this range of factors be requirements in reviewing requests to amend decommissioning or other licensed activities. If there is a REGDOC which guides this weighing of considerations within CSNC deliberations, we **request** it be referenced in the ROR. REGDOC-2.11.2 Decommissioning is listed in Appendix D tables D-1, D-2, and D-3³⁶ however, this REGDOC is not mentioned within the main body of the ROR. Therefore, there is no clear indication as to how this REGDOC is being utilized in reviewing requests to amend decommissioning or other licensed activities.

The 2021 ROR notes that there will be separate Commission decisions on the proposals for WR-1 and NDPWF, for which reason the proposals are not specifically discussed further in the ROR.³⁷ As CELA has submitted previously, this approach is insufficient, as it denies early engagement and information sharing on projects which have critical health, safety and environmental ramifications. The CNSC's consideration of these complex matters should not be constrained to licensing forums and every opportunity, including the ROR, should be used to advance public knowledge and the sharing of information per section 21(1)(e) of the *NSCA*. CELA continues to **recommend** including a description of the current decommissioning plans of full dismantling to provide some context for the proposed changes to in situ decommissioning.

Recommendations

15. The ROR should present the reasons why CNL is requesting a change in decommissioning approach (e.g. monetary or time constraints, difficulty in achieving full dismantlement, or revised risk assessments) and provide evidence of how CNL and the CNSC, respectively, weighed economic, environmental, human health, risk and safety considerations.
16. CNSC staff should explain what "exceptional circumstances" have emerged since the original decision was made to fully dismantle the reactor.
17. The ROR should clearly reference any REGDOCs which guide the weighing of considerations within CNSC deliberations to amend decommissioning or licensed activities.

³⁶ 2021 ROR, pp. 49-51.

³⁷ 2021 ROR, pp. 8 and 12.

18. Every opportunity, including the ROR, should be used to advance public knowledge and sharing of information per section 21(1)(e) of the *NSCA*.
 19. The ROR should include a description of the current decommissioning plans of full dismantling to provide some context for the proposed changes to in situ decommissioning.
- ii. Decommissioning Planning

In previous ROR submissions, CELA has **recommended** that decommissioning planning become a general component of all future ROR reporting. This is especially critical given that for over thirty years, Canada's nuclear facilities operated absent any consideration of decommissioning planning. The historical failure of Canada's nuclear law and policy frameworks to consider decommissioning means the CNSC ought now provide heightened review and inclusion of decommissioning in its RORs.³⁸ Unfortunately, the 2021 ROR does not have a dedicated discussion of decommissioning planning. CELA **submits** that this would directly further the objects of the Commission pursuant to section 9 of the *Nuclear Safety and Control Act*, specifically its role in preventing unreasonable risk to the environment and human health and achieving conformity with international obligations.³⁹

CELA **recommends** that as a required component of RORs, the range of technically complex and challenging decommissioning actions which are specific to CNL sites be considered. As the end goal of decommissioning is the elimination of the need for measures and oversight in order to protect the public and the environment from radiation,⁴⁰ this recommendation would further advance the intervenor's recommendations specific to environmental protection considerations in the ROR.

CELA also continues to **recommend** that the ROR be used as an opportunity to review decommissioning in the public domain. It is critical that the Commission – in exercising its jurisdiction as Canada's nuclear safety regulator tasked with disseminating information with the public – use the ROR to discuss matters which are difficult for members of the public to independently review or verify.

Last year, CELA **requested** that the ROR should include more information about the Land Use program, how it will be applied at each of the CNL sites, and any accompanying public

³⁸ Blaise, K. and Stensil, S-P (2022), The Evolution of Decommissioning Planning: Tracing the Requirements to Consider Radioactive Wastes and Social Risk of Nuclear Power Plants in J. L. Black-Branch and D. Fleck (eds.), *Nuclear Non-Proliferation in International Law – Volume VI – Nuclear Disarmament and Security at Risk – Legal Challenges in a Shifting Nuclear World*, https://link.springer.com/chapter/10.1007/978-94-6265-463-1_9

³⁹ Nuclear Safety and Control Act, s 9(a)(i) and (iii).

⁴⁰ IAEA, Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities (SSG-47), s 2.6.

opportunities. The Land Use program was launched in 2020 to “establish and achieve appropriate next land uses and end states for sites being decommissioned and remediated.”⁴¹ The 2021 ROR briefly mentions the land program in the Waste Management section, noting: “the Land Use program and Environmental Remediation program were fully integrated with the Decommissioning program, which has been updated and is now implemented through the Cleanup Functional Support Area.”⁴² The ROR mentions a series of programs, without explaining how they work, and how they are applied at sites undergoing decommissioning and remediation. CELA **recommends** that the ROR should include more information about the Land Use program, the Environmental Remediation program, and the Cleanup Functional Support Area, how these are applied at each of the CNL sites, and any accompanying public opportunities.

Recommendations

20. To remedy historical oversights, the review of licensee’s decommissioning plans should be a required component of RORs. As the 2021 ROR covers all CNL sites, this should include a discussion of the technically complex and challenging decommissioning actions specific to their sites.
21. The ROR should include more information about the Land Use program, the Environmental Remediation program, and the Cleanup Functional Support Area, how these are applied at each of the CNL sites, and any accompanying public opportunities.

G. Radiation Protection

Our first comment in regard to radiation protection pertains to the tables which demonstrate that CNSC staff rated the radiation protection SCA at all CNL licensed sites as “satisfactory” based on regulatory oversight activities.⁴³ These ratings were based on the As Low As Reasonably Achievable (“ALARA”) principle. Like last year’s ROR, the 2021 ROR does not capture any differential between CNL sites. For instance, the ALARA for a contaminated site might be different than that of a decommissioned reactor. CELA **requests** the CNSC to clarify whether it considers radiation levels of all components or areas of a given site (i.e., often there is more than one licenced activity occurring at a licenced facility)?

Last year, CELA’s submission mentioned that in the transcripts from the 2019 CNL ROR Meeting, it was noted that the approach “may be more complex and more in-depth at certain sites, with certain more complex hazards that have to be addressed, whereas other sites, although the ALARA

⁴¹ 2020 ROR, p. 25.

⁴² 2021 ROR, p. 25.

⁴³ 2021 ROR, Appendix H, pp. 62-66.

process would still be used it may not be as extensive.”⁴⁴ This level of detail and explanation setting out how the decision was reached is still not captured in the ROR and so CELA once again **recommends** it be updated accordingly.

Second, the 2020 ROR had noted that “In 2020, WL staff provided additional information on the assumptions and calculations used to derive the collective dose estimates associated with the accelerated decommissioning approach.”⁴⁵ The ROR went on to state that information provided in the 2019 CNL ROR and a more detailed future memo by the Commission will satisfy the request that “CNSC staff provide a systematic assessment of the potential effects on the collective occupational dose of the proposed accelerated decommissioning compared to the deferred decommissioning assessed in the original Comprehensive Study Report.”⁴⁶ The 2019 CNL ROR, however, noted that “CNSC staff will provide another update to the Commission after CNSC staff have completed their analysis of CNL’s ALARA assessment.”⁴⁷ CELA had **recommended** that the 2020 ROR include updated information on the assumptions and calculations used to derive the collective dose estimates associated with the accelerated decommissioning approach at WL, including an update on the CNSC staff analysis of CNL’s ALARA assessment. Neither the 2020 ROR nor the 2021 ROR have been updated with this information. The 2021 ROR makes no mention of collective dose estimates associated with the accelerated decommissioning approach. CELA again **recommends** that the 2021 ROR should include updated information on the assumptions and calculations used to derive the collective dose estimates associated with the accelerated decommissioning approach at WL, including an update on the CNSC staff analysis of CNL’s ALARA assessment.

Third, the 2021 ROR discusses an exceedance of an action level at the National Research Universal site:

For the calendar year 2021, the committed effective doses (CEDs) for tritium for 2 National Research Universal (NRU) workers were 1.09 mSv and 1.01 mSv, which exceeds the action level for internal CEDs established at 1 mSv/year.

Under the CNL’s RP program, a process is established where exceedances to action levels (ALs) can be authorized by CNL’s RP program manager if it can be demonstrated that the dose expected to be received by, or committed to, workers is ALARA. The exceedance of the AL was planned and authorized by CNL as per CNL’s RP program requirements. When bioassay results indicated that the workers were likely to reach the action level, an ALARA assessment was conducted by CNL which included a review of the work to ensure optimized

⁴⁴ CNSC, Transcript from December 10, 2020 Commission Meeting, p. 127.

⁴⁵ 2020 ROR, p. 18.

⁴⁶ 2020 ROR, p. 18.

⁴⁷ 2019 ROR, p. 15.

worker protection. Steps were also taken by CNL to minimize tritium doses to workers to the maximum extent possible.⁴⁸

While CNSC staff determined that there were no impacts to workers due to these AL exceedances, which were caused by low chronic inhalation of tritiated water vapor while working in the NRU Rod Bays to support specialized work activities,⁴⁹ the ROR does not explain what measures were taken by CNL to minimize tritium doses to workers, and whether this type of AL exceedance is expected to continue at the NRU. CELA **recommends** that this AL exceedance event be discussed at the upcoming meeting. We also **recommend** that the ROR should provide more detail on the types of measures being put into place to minimize exposure to workers (e.g., providing better protective gear, or limiting the amount of work hours on a certain task).

Recommendations

22. As a standing item, ROR should explain how, in applying the ALARA principle, the CNSC accounts for differential in risk among sites (i.e. the ALARA radiation protection rating for a contaminated site might be different than that of a decommissioned reactor).
23. The ROR should include information on the assumptions and calculations used to derive the collective dose estimates associated with the accelerated decommissioning approach at WL, including any updates since the 2019 ROR was released.
24. The event at NRU resulting in two workers exceeding the action level for tritium in the NRU Rod Bays should be discussed at the upcoming meeting.
25. The ROR should provide more detail on the types of measures CNL enacts to minimize exposure to workers in situations where action level exceedances are planned and authorized.

H. Climate Change Resiliency

The failure to consider climate change within the RORs for Canadian Nuclear Laboratories has been an ongoing critique by CELA. The 2020 ROR failed to consider climate change, despite including extreme weather events, which may lead to unintended emissions to the environment. The 2020 ROR had mentioned heavy rainfall events in 2017, 2018, and 2019 which resulted in the Port Hope Project's old Water Treatment Building to treat excess contaminated water to avoid a release of untreated water to the environment.⁵⁰

⁴⁸ 2021 ROR, pp. 18-19.

⁴⁹ 2021 ROR, p. 19.

⁵⁰ 2020 ROR, p. 84.

CELA's requests for information on the size of the rainfall, including how frequently rainfall of this size is projected to occur, and for information on why this rainfall led to the release of untreated water (i.e., why was the release of untreated water not prevented by safeguards, and information on what has been done to avoid a repeat release of untreated water), were partially discussed at last year's Commission Meeting.

One Commission Member wanted to confirm "whether there was a release of untreated water, or whether it's as stated in the staff CNL CMD, that this was mitigated by the use of the old water treatment plant."⁵¹ Phil Boyle noted that "there have been instances of untreated water sampled later and determined not to be significant releases as a result of very large rainfalls."⁵² While Steve Morris noted that for 2020, "...the operation of the old treatment plant would have been used as a mitigative, so it wouldn't have been an off-site release in 2020... I can confirm in 2017, 2018, the old plant would have been used to prevent the off-site releases. It was implemented as a contingency plan."⁵³

Another Commission Member inquired about the surge capacity for the Port Hope long-term waste management facility. An exact volume of water couldn't be provided, but mitigation measures were discussed, with Mark Hughey noting:

We've expanded the pod at the Port Hope Long-term Waste Management Facility and construction of large berms and swales to keep water inside the site. In addition, CNL developed robust water management contingency and mitigation plans that we review annually, and update those annually to make sure we are reflecting what the current situation is, site conditions and expected water patterns.⁵⁴

There was no information provided on the size of the rainfall or frequency of rainfall projected to occur.

At the Commission Meeting, the impact of the climate change was acknowledged: "we do consider those heavy rains and understand exactly what you're talking about with regard to the impact of the climate and large swings in the climate changes, extreme weather."⁵⁵ Despite multiple Commissioner Members highlighting the rainfall event at the Port Hope Project, the 2021 ROR does not address these rainfall discussions, nor does it discuss climate change.

As climate impacts become more frequent and pronounced, CELA urges the CNSC to discuss climate change in the context of licensee oversight because of the major safety and environmental

⁵¹ Transcript, p. 278.

⁵² Transcript, p. 278.

⁵³ Transcript, pp. 278-279.

⁵⁴ Transcript, p. 289.

⁵⁵ Transcript, p. 288.

issues that they pose to operations. CELA **submits** oversight of potential climate impacts is within the purview of the CNSC's review because of its responsibility to protect the environment from unintended radioactive releases. Catastrophic weather events are becoming more frequent and the intervenor recommends the CNSC review the climate resiliency of licensees as part of their regulatory oversight reporting.⁵⁶ More specifically, we **recommend** that a review of licenced activities' climate resiliency be included in the regulatory oversight reporting,⁵⁷ and ask that the Commission direct CNSC Staff to include this in future RORs.

Further, CELA once again **recommends** that more information be included on the results of the toxicity testing that was mentioned in the 2018 ROR,⁵⁸ and that it be stated whether such testing was done after other similar rainfall induced releases of untreated water. While the release of untreated water discussed in the 2018 ROR was deemed not acutely lethal, the lack of information in the 2018, 2019, 2020, and 2021 ROR leaves doubts as to the severity/concentration of these releases.

Recommendations

26. Licenced activities should be reviewed against their climate resiliency. The Commission should direct CNSC Staff to include this as a component of regulatory oversight reporting.
27. The most recent updates to the environmental risk assessment and updates to safety analyses which speak to climate change resiliency should be reviewed and reflected in the ROR.
28. Information should be included on the results of the toxicity testing mentioned in the 2018 ROR.

I. Radionuclides and the National Pollutant Release Inventory ("NPRI")

CELA has long advocated in previous ROR submissions⁵⁹ for the need for consistent, comprehensive data on the release of radionuclides from CNSC regulated facilities. Unfortunately,

⁵⁶ See for instance: CELA (2022), "Climate Change Concerns Breezed Over on Final Day of Nuclear Licensing Hearing for Point Lepreau Nuclear Power Plant," online: <https://cela.ca/blog-climate-change-concerns-breezed-over-on-final-day-of-nuclear-licensing-hearing-for-point-lepreau-nuclear-power-plant/>

⁵⁷ CELA has previously made this submission to the Commission, including in our 2017 comments on the ROR for Nuclear Substances: 2017, 2020 comments on the ROR for Canadian Nuclear Laboratories Sites: 2019, and 2021 comments on the ROR for Canadian Nuclear Laboratories Sites: 2020.

⁵⁸ 2018 ROR, p. 94.

⁵⁹ See for instance, Canadian Environmental Law Association, "CELA's Comments on the CNSC's Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2017 - Recommendations to Improve the Oversight of Environmental Protection and Waste Management" (19 Nov 2018); Northwatch and Canadian Environmental Law Association, "Review of the CNSC's Regulatory Oversight Report for Uranium and Nuclear Substance Processing Facilities in Canada: 2016"

despite our prior recommendations on this topic, the need for accessible radionuclide emission data remains ignored in this year's ROR.

Radionuclides are not reported to Canada's National Pollutant Release Inventory ("NPRI"), an online data portal and a key resource for collecting and reporting on pollutant releases and transfer emissions. The NPRI provides data in support of the assessment and risk management of chemicals in use in Canada, and is used to promote actions aimed at reducing pollutant releases. The NPRI is covered under sections 46 – 53 of the *Canadian Environmental Protection Act, 1999*. The legislation enables the NPRI to track pollution using a listing approach and categorize substances by threshold. As radioactive substances are not part of the substance list, CELA has continued to advocate for the inclusion of radionuclides on the NPRI substance list.

At last year's Commission Meeting, it was noted that the decision to not include radionuclides in the NPRI was made by Environment and Climate Change Canada.⁶⁰ The decision to not include radionuclides in the NPRI is not set in stone, and the NPRI can be amended. As a federal government body, the CNSC is in an excellent position to advocate for the addition of radionuclides to the inventory. CELA submits that given the threat radionuclides pose to human health and the environment, we respectfully **recommend** the CNSC support the inclusion of radionuclides on the NPRI's substance list. The lack of comprehensive, accessible publicly-available data minimizes the ability of the public and independent scientific experts to provide valuable insight on relevant considerations to support the decision-making process.

In the 2020 ROR, Appendix K provided the annual radionuclide releases to the atmosphere or to surface waters from licensed facilities operated by CNL. The 2021 ROR removed this appendix, and states the following:

The CNSC publishes annual radionuclides loadings to the environment from nuclear facilities on the CNSC Open Government Portal. The data is available on the CNSC Open Government Portal: <https://open.canada.ca/data/en/dataset/6ed50cd9-0d8c-471b-a5f6-26088298870e>. In previous RORs, the annual radionuclides information was replicated in an appendix, and is provided via the above reference for the 2021 report.⁶¹

This Appendix was without proper justification, and makes accessing data on radionuclides less accessible. The formatting of data through the CNSC Open Government Portal is not consistent with the production of data on the NPRI. The Open Government Portal's data is not easily readable as a user is required to download a CSV file and manually filter out data. CELA **submits** that this

(20 Nov 2017); our 2019 comments on the 2018 ROR for CNL; 2020 comments on the 2019 ROR for CNL; and 2021 comments on the 2020 ROR for CNL.

⁶⁰ Transcript, p. 274.

⁶¹ 2021 ROR, p. 21.

is an improper substitute for the more detailed and publicly accessible data that would be provided on the NPRI. CELA further **submits** that the data on the Open Government Portal should be presented in the same format as the NPRI. CELA **recommends** the Appendix concerning annual radionuclide releases be restored to the ROR.

In addition to this submission, CELA has been active in advocating for radionuclide data to be accessible on the NPRI.⁶²

Recommendations

29. Radionuclides data should be reportable and accessible on Canada's National Pollutant Release Inventory ("NPRI") in a similar manner as pollutants currently reported.
30. The data on the Open Government Portal should be presented in the same format as the data on the NPRI.
31. The CNSC should re-instate the Appendix concerning annual radionuclide releases in the ROR.

J. Waste Management

The 2021 ROR provides very few details on the site-specific waste management activities completed at CRL, WL, PHAI, DPWF, G1WF and NPDWF. While the Waste Management SCA section of the ROR notes that Chalk River "received a total of 61.3 m³ of radioactive waste from external organizations in 2021. This includes 25.3 m³ of commercial waste and 36 m³ of waste returned from off-site waste processors (i.e., secondary waste from the off-site treatment of CNL waste, such as ash from incineration of waste),"⁶³ there is no description of the waste management activities at PHAI, DPWF, G1WF or NPDWF. Where the 2020 ROR provided one-sentence descriptions of site-specific decommissioning and remediation activities for all sites,⁶⁴ there is only brief highlights of WL and CRL decommissioning activities.⁶⁵ The ROR does not describe the type of waste that it intends to dispose of at each site in adequate detail, nor does it describe the specific steps taken to prevent unreasonable risk to the environment and human health. This level of depth remains insufficient. CELA **recommends** that a detailed overview of waste management activities be undertaken at each CNL site be included in the ROR.

⁶² See for instance, online: https://cela.ca/wp-content/uploads/2021/06/NGO-submission-NPRI_June-4-2021.pdf

⁶³ 2021 ROR, p. 25.

⁶⁴ 2020 ROR, p. 25.

⁶⁵ 2021 ROR, p. 25.

With regard to radioactive wastes stored on CNL sites, the ROR states the following:

Radioactive wastes stored on the sites consist of high-, intermediate- and low- level radioactive wastes. The inventory of wastes stored at CNL sites as of 2020 is included in the seventh *Canadian National Report for the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (October 2020)*.⁶⁶

Last year, CELA noted that Canada's 7th report shows major unexplained changes in the inventory of federal radioactive waste relative to Canada's 6th national report, including the apparent reclassification of federal Intermediate Level Waste ("ILW") as Low Level Waste ("LLW"), and contaminated soils in the 7th report relative to the 6th report, including information on the "better characterization" of ILW, should be addressed at the upcoming ROR meeting. Because this was not addressed last year, CELA **requests** that this be discussed at this year's upcoming Commission Meeting.

With the Canada's 7th Report covering a reporting period, from April 1, 2017, to March 31, 2020, the 2021 ROR is referencing radioactive wastes storage data as of 2020. CELA **requests** that information be provided at the upcoming Commission Meeting regarding the timeline for release of the next Report, which would contain 2021's radioactive wastes data.

Recommendations

32. The ROR should include a detailed overview of waste management activities being undertaken at each CNL site.
33. The changes in data for ILW, LLW, and contaminated soils in the 7th report relative to the 6th report, including information on the "better characterization" of ILW, be addressed at the upcoming Commission meeting.
34. The timeline for the release of the 8th Canada Report, which would contain 2021's radioactive wastes data, be discussed at the upcoming Commission Meeting.

K. Specific Comments

- i. Changes to the 2021 Regulatory Oversight Report

The 2020 ROR provided a list of changes that were made to the ROR as a result of recommendations from the Commission, feedback from intervenors, and commitments made by

⁶⁶ 2021 ROR, p. 25.

the CNSC. The 2021 ROR did not have a section dedicated to listing the Changes to the 2021 Regulatory Oversight Report. Having this section at the forefront of the ROR provides the reader with an expectation of how the ROR has changed compared to previous years. For example, this year, the Appendix with annual releases of radionuclides was removed without justification, and the ROR now has a dedicated section to discuss Indigenous Consultation and Engagement.

CELA **requests** that the “Changes to the ROR” section be reinstated. Furthermore, CELA **recommends** that it be made clear which recommendations and feedback prompted specific changes to the ROR.

For instance, CELA has provided comments to the CNSC on its discussion paper requesting that our written and oral comments – specifically geared to improving the ROR process and objects of the Commission – inform the CNSC’s deliberations on the matter.⁶⁷ Given our review herein, we are dismayed that our previously provided recommendations are not reflected.

Indeed, intervenors still lack a right of reply and oral intervention opportunities, the CNSC continues to proceed with ROR meetings absent any scoping of issues, and the ROR reports themselves remain critically deficient in the level of information necessary to analyze trends from year to year and engage in critical discussions of systemic issues among licensees and like-facilities.

Recommendation

35. The section titled “Changes to [insert year] Regulatory Oversight Report” should be reinstated in the ROR, and should identify which recommendations and feedback prompted specific changes to the ROR.

ii. Section 3.2 Performance Ratings

Last year, CELA’s submission presented concerns regarding the binary rating system consisting of either “satisfactory” (“SA”) or “below expectations” (“BE”) being assigned to licensee performance ratings for the 14 CNSC Safety and Control Areas (“SCAs”) for all CNL sites CELA had **recommended** that the CNSC consider developing a performance rating system based on measurable indicators, as has been used in previous years, or alternatively the performance ratings for each CNL site in the ROR include an evaluation of the set criteria.

During the Commission Meeting last year, the performance rating was discussed in further detail. The inputs for the performance rating are: “inspections, compliance report reviews, events reviews,

⁶⁷ Personal correspondence from K Blaise to cnscconsultation.ccsn@canada.ca dated July 7, 2021.

and reviews of licensee submissions, how they carry out corrective actions to reportable events or to non-compliances, whether they do that in a timely way and in an adequate manner to CNSC staff's satisfaction."⁶⁸

Trends from previous years of compliance and trends from performance reports are considered, as are lost time injuries, environmental releases, and dose to workers trends. Compliance results are the focus behind this rating system.⁶⁹

An SA rating occurs when: "a licensee is meeting regulatory requirements, that any non-compliance or performance issues, if any, are not risk-significant, or that any non-compliance or performance issues have been or are being adequately addressed," while a BE rating occurs when: "performance is not being met to either staff's expectations or regulatory requirements...the licensee either has risk significant non-compliance or they're not addressing non-compliance in an adequate or timely manner."⁷⁰

While having this breakdown provides more insight, CELA **submits** that the current performance rating system lacks truly measurable indicators, and there no stated threshold for what constitutes an event constituting as being "not risk-significant." CELA **recommends** that the CNSC consider developing a performance rating system based on measurable indicators, as has been used in previous years. In the alternative, CELA **recommends** that performance ratings for each CNL in the ROR include an evaluation of the set criteria outlined in the above paragraphs.

Recommendation

36. The CNSC should consider developing a performance rating system based on measurable indicators. In the alternative, performance ratings for each CNL site in the ROR include an evaluation of set criteria such as key performance indicators, compliance with licence conditions, events, repeat non-compliances, and licensee action in response to events, as well as the nature of the events themselves.

iii. Section 4.9.4 Independent Environmental Monitoring Program

The Independent Environmental Monitoring Program ("IEMP"), involves taking samples from public areas surrounding facilities to measure and analyze the amount of radiological and hazardous substances in the samples. The 2021 ROR states that "sampling frequency is prioritized

⁶⁸ Transcript, p. 265.

⁶⁹ Transcript, p. 265.

⁷⁰ Transcript, p. 266.

on a risk-based approach where nuclear facilities in Canada are visited anywhere from 2 to 4 times every 10 years under the auspices of the IEMP.”⁷¹

During last year’s Commission Meeting, there was substantial interest from Indigenous communities about becoming involved in the sampling process of the IEMP. This is also reflected within section 6 of the 2021 ROR, in which the Historic Saugeen Métis, the Saugeen Ojibway Nation, Curve Lake First Nation, and the Mississaugas of Scugog Island First Nation⁷² have all expressed interest in participating in the CNSC’s IEMP related to the sites in their traditional territories/communities.

With Indigenous Nations and communities expressing interest in monitoring and sampling for IEMP, the CNSC is faced with the opportunity to expand sampling, and prevent the cancellation of sampling campaigns. For example, “in 2021, due to challenges associated with the ongoing COVID-19 pandemic which limited interprovincial travel and resulted in deferred sampling campaigns, CNSC staff did not conduct the scheduled independent environmental monitoring around WL.”⁷³ Having a larger pool of people available to collect samples would not only avoid sampling deferrals, but would provide the opportunity to sample around sites more frequently than every two to five years.⁷⁴

CELA **recommends** that the CNSC reconsider the frequency of the IEMP sampling cycles. Having more sampling data provides a more robust understanding of the environmental quality surrounding CNL’s sites. More frequent sampling also enables a quicker response time to sudden surges in radiological and hazardous substances within the area, and thus preventing a shifting baseline.

Recommendation

37. CELA recommends that the CNSC reconsider the frequency of IEMP sampling cycles.

iv. Section 4.13 Safeguards and Non-Proliferation

The CNSC mentions IAEA activities at CRL, WL, DPWF, G1WF, and NPDWF to verify nuclear material inventories and to assure the absence of undeclared nuclear material and activities. No detail is provided on these visits other than noting that “No significant issues were identified.”⁷⁵

⁷¹ 2021 ROR, p. 22.

⁷² 2021 ROR, pp. 29-33.

⁷³ 2021 ROR, p. 22.

⁷⁴ Transcript, p. 39.

⁷⁵ 2021 ROR, p. 27.

CELA **recommends** including examples of what types of issues were identified to make it clear what is meant by “no significant issues.”

Recommendation

38. Examples of issues identified during IAEA visits at CRL, WL, DPWF, and NPDWF should be given to make it clear what is meant by “no significant issues.”

v. Section 5.1 Reportable Events

A total of 45 events were reported to and assessed by CNSC staff in 2021. This is an increase from the 37 events reported in 2020. For these events, the 2021 ROR simply states that CNSC staff “determined that there was no risk to the environment, nor the public associated with these events.”⁷⁶ According to Table F-2, there was a sewer line leak at CRL in 2021. There is no mention of how was corrected to ensure there was no risk to the environment. CELA **recommends** briefly mentioning the corrective and remedial actions taken.

Recommendation

39. The corrective and remedial actions taken after reportable events should be described.

vi. Appendix E. List of Inspections at CNL Sites in 2021

The tables in Appendix E include a column for the “Number of Notices of Non-Compliance and Recommendations” made following an inspection, however they no longer include the column with key information regarding the “Safety Significance of Enforcement Actions” from the 2018 CNL ROR. CELA **recommends** reintroducing this column in the tables in Appendix E.

When reviewing the list of inspections at CNL sites in Appendix E, Table E-1 provides a list of the CNSC-led inspections at CRL. Between the 11 inspections which took place in 2021, there were 30 Notices of Non-Compliance (“NNCs”).⁷⁷ The inspections cover multiple SCAs, so the table does not indicate which NNCs involved which SCAs, and there is no indication of the severity of the non-compliance. Additionally, the table while the table provides the number of recommendations given at each inspection, it does not state what types of recommendations were made at these inspections. CELA **recommends** that the ROR should provide more details about the Notices of Non-Compliance and the Recommendations provided following an inspection.

⁷⁶ 2021 ROR, p. 56.

⁷⁷ 2021 ROR, pp. 53-54.

CELA notes that the entire ROR contains very few actual descriptions of what these inspections found, or what prompted them (e.g. whether the investigations were routine in nature or consisted of specific follow-ups regarding particular issues or event). There is no information as to whether the inspections were announced or unannounced, and whether that had any impact on the scope or outcome of the inspections.

The lack of detailed information about inspections and their outcomes continues to be at issue in this ROR. In previous submissions, CELA has requested information pertaining to the allocation of CNSC inspection resources.⁷⁸ In response, CNSC staff indicated at the Commission Meeting that their tracking does not “distinguish whether the findings came from an announced or unannounced inspection.”⁷⁹ While CNSC Staff set out the differences between announced and unannounced inspections and the varying levels of compliance which could be anticipated (with unannounced inspections resulting in greater findings of minor non-compliances compared to those which were announced), we **request** the Commission confirm if CNSC Staff have commenced tracking this characteristic of its inspections. We also **recommend** including information in the ROR on the findings of the inspections, what prompted them, whether they were announced or unannounced, and what impact announcing the inspections had on the findings of the inspections.

Alternatively, CELA **recommends** making the individual inspection reports publicly available online in whole, so that the public can find the information in the reports themselves. Taking steps to make this information publicly accessible is even more important, given the significant reductions in the contents of the ROR.

CELA also **recommends** including information in the 2021 ROR outlining how the CNSC chooses which inspections should be carried out, and what weight is given to following up on previously identified issues.

Table E-3 in Appendix E notes that “no inspections were performed at G1WF in 2021.”⁸⁰ CELA **requests** information on why no inspections were performed at G1WF in 2021, since CNSC staff concluded that G1WF operated safely in 2021.⁸¹

Recommendations

40. The “Safety Significance of Enforcement Actions” column should be reintroduced in the tables in Appendix E.

⁷⁸ See for instance, CELA’s submission on the 2018 ROR on the Use of Nuclear Substances in Canada.

⁷⁹ CNSC, Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held on November 6-7, 2019, para 101.

⁸⁰ 2021 ROR, p. 54.

⁸¹ 2021 ROR, p. 41.

41. The ROR should provide more details about the Notices of Non-Compliance and the Recommendations provided following an inspection.
 42. The ROR should include information on the findings of CNSC-led inspections, what prompted them, whether they were announced or unannounced, and what impact announcing the inspections had on the findings of the inspections. Alternatively, the individual inspection reports should be made publicly available online in whole or in part, so that the public can find the information in the reports themselves.
 43. The ROR should include information outlining how the CNSC chooses which inspections should be carried out, and what weight is given to following up on previously identified issues.
 44. There should be an explanation as to why CNSC-led inspections did not occur at G1WF in 2021.
- vii. Appendix I. Doses to Nuclear Energy Workers and Non-Nuclear Energy Workers at CNL Sites

During the 2019 CNL ROR hearing, it was agreed upon that “next year’s ROR should include an update on where the asbestos phase-out plan is.” Despite this, no information related to the asbestos phase-out plan at CNL sites was included in the 2020 ROR, as well as the 2021 ROR. The 2021 ROR simply mentioned that at G1WF, “from 2019 to 2021, the hazard reduction work continued, including asbestos abatement and dry active waste removal,”⁸² and that at NPDFWF, “Effective doses in 2017 did see an increase due to planned work activities involving engineering assessments, thorough facility characterizations and large-scale hazard reduction activities (asbestos abatement).”⁸³

Given Canada’s prohibition on asbestos and products containing asbestos (which went into effect on December 30, 2018), the intervenor is of the view that it would have been relevant for the 2020 ROR to discuss measures taken by nuclear facilities to (1) phase out asbestos use in nuclear facilities by December 31, 2022 and (2) pursue technically and economically feasible asbestos-free alternatives.⁸⁴ The intervenor therefore recommends a discussion of this issue be included at the upcoming ROR meeting and subsequent RORs.

⁸² 2021 ROR, p. 73.

⁸³ 2021 ROR, p. 75.

⁸⁴ Prohibition of Asbestos and Products Containing Asbestos Regulations: SOR/2018-196.

Recommendation

45. The upcoming ROR meeting and subsequent RORs should include submissions from CNL and CNSC Staff on measures being taken by nuclear facilities to (1) phase out asbestos use in nuclear facilities by December 31, 2022 and (2) pursue technically and economically feasible asbestos-free alternatives.

viii. Appendix L. Estimated Dose to the Public

Appendix K contains information on the estimated dose to the public around CNL sites using Derived Release Limits (“DRLs”) and makes the following conclusions:

As per the *Radiation Protection Regulations*, subsection 1(3), and considering the fact that the radiological releases from all the sites covered by this ROR have remained small fractions of the DRLs applicable to those sites, the contribution to the dose to the public from these releases remains a very small fraction of the prescribed limit for the general public.⁸⁵

In the 2019 *Report of the Integrated Regulatory Review Service (IRRS) Mission to Canada*, the IRRS team concluded that “inconsistencies are evident in the derivation of DRLs” and recommended that the CNSC establish or approve dose constraints for all Class I type facilities, consistently implement the concept of dose constraints for all facilities, and standardise regulatory practice for derived release limits.⁸⁶ CELA **submits** that the lack of consistency in the calculation of DRLs puts Canadians at risk and **requests** that the Commission confirm whether the ROR took into account the findings from the IRRS report and if so, where and how, as they appear absent from the ROR.

Recommendation

46. The Commission should confirm whether the ROR took into account the findings from the IRRS report and if so, where and how, as they appear absent from the ROR.

⁸⁵ 2021 ROR, p. 79.

⁸⁶ 2019 Report of the Integrated Regulatory Review Service (IRRS) Mission to Canada, p. 53.

III. CONCLUSION

We respectfully provide these comments to assist the Commission in its review of the *Regulatory Oversight Report for Canadian Nuclear Laboratories: 2021*.

Sincerely,
CANADIAN ENVIRONMENTAL LAW ASSOCIATION



Sara Libman, Legal Counsel



Kerrie Blaise, Legal Counsel

Appendix 1

Summary of Recommendations

1. CELA remains of the view that ROR meetings are not a replacement for relicensing hearings and the CNSC must remedy the discrepancy in participation rights among public intervenors and licensees by providing oral presentation opportunities.
2. The CNSC should reintroduce webinars and other outreach activities to the ROR that target the public.
3. The ROR should include greater discussion of overarching conclusions and findings related to CNL's actions and how they compare to other licensee's undertakings and sites.
4. In addition to summarizing changes to CNL Licences and Licence Conditions Handbooks, the 2021 ROR should present updates, where applicable, regarding ongoing federal environmental assessments.
5. The ROR should provide a description for any major activities discussed at each licence site.
6. The ROR should be updated to include an update on the federal EA and licencing for the Global First Power SMR project.
7. The Commission should provide a comprehensive update of the SMR project, namely its EA and licensing timelines at the forthcoming Commission Meeting.
8. The ROR should function as a comprehensive and evergreen document to ensure updates are made to the text when available, such that timely updates from the Commission can be disseminated to the public.
9. The ROR should include a discussion of the Integrated Waste Strategy and the consolidation of high, intermediate, and low-level waste at CRL.
10. The ROR should provide an update on the status of CNL's waste transfer activities, and specifically, state that the High Level Waste transfer from Whiteshell to CRL will begin in summer 2022.
11. The ROR should include a description of waste-related projects posted to the federal Impact Assessment Agency Registry since November 2020, and an overview of CNL's analysis for determining that they are not likely to cause significant adverse environmental effects.
12. CNL's role in the implementation of the Federal Nuclear Science and Technology Work Plan should be addressed at the upcoming ROR meeting.
13. Additional information about the operations of the Recoverable Surface Storage and Staging Area and its relevancy to the ongoing federal EA is requested.

14. RORs should include all CNL sites and the compliance assessments, regardless of an upcoming ROR. The 2021 ROR should include the PHAI/PHP.
15. The ROR should present the reasons why CNL is requesting a change in decommissioning approach (e.g. monetary or time constraints, difficulty in achieving full dismantlement, or revised risk assessments) and provide evidence of how CNL and the CNSC, respectively, weighed economic, environmental, human health, risk and safety considerations.
16. CNSC staff should explain what "exceptional circumstances" have emerged since the original decision was made to fully dismantle the reactor.
17. The ROR should clearly reference any REGDOCs which guide the weighing of considerations within CNSC deliberations to amend decommissioning or licensed activities.
18. Every opportunity, including the ROR, should be used to advance public knowledge and sharing of information per section 21(1)(e) of the *NSCA*.
19. The ROR should include a description of the current decommissioning plans of full dismantling to provide some context for the proposed changes to in situ decommissioning.
20. To remedy historical oversights, the review of licensee's decommissioning plans should be a required component of RORs. As the 2021 ROR covers all CNL sites, this should include a discussion of the technically complex and challenging decommissioning actions specific to their sites.
21. The ROR should include more information about the Land Use program, the Environmental Remediation program, and the Cleanup Functional Support Area, how these are applied at each of the CNL sites, and any accompanying public opportunities.
22. As a standing item, ROR should explain how, in applying the ALARA principle, the CNSC accounts for differential in risk among sites (i.e. the ALARA radiation protection rating for a contaminated site might be different than that of a decommissioned reactor).
23. The ROR should include information on the assumptions and calculations used to derive the collective dose estimates associated with the accelerated decommissioning approach at WL, including any updates since the 2019 ROR was released.
24. The event at NRU resulting in two workers exceeding the action level for tritium in the NRU Rod Bays should be discussed at the upcoming meeting.
25. The ROR should provide more detail on the types of measures CNL enacts to minimize exposure to workers in situations where action level exceedances are planned and authorized.
26. Licenced activities should be reviewed against their climate resiliency. The Commission should direct CNSC Staff to include this as a component of regulatory oversight reporting.

27. The most recent updates to the environmental risk assessment and updates to safety analyses which speak to climate change resiliency should be reviewed and reflected in the ROR.
28. Information should be included on the results of the toxicity testing mentioned in the 2018 ROR.
29. Radionuclides data should be reportable and accessible on Canada's National Pollutant Release Inventory ("NPRI") in a similar manner as pollutants currently reported.
30. The data on the Open Government Portal should be presented in the same format as the data on the NPRI.
31. The CNSC should re-instate the Appendix concerning annual radionuclide releases in the ROR.
32. The ROR should include a detailed overview of waste management activities being undertaken at each CNL site.
33. The changes in data for ILW, LLW, and contaminated soils in the 7th report relative to the 6th report, including information on the "better characterization" of ILW, be addressed at the upcoming Commission meeting.
34. The timeline for the release of the 8th Canada Report, which would contain 2021's radioactive wastes data, be discussed at the upcoming Commission Meeting.
35. The section titled "Changes to [insert year] Regulatory Oversight Report" should be reinstate in the ROR, and should identify which recommendations and feedback prompted specific changes to the ROR.
36. The CNSC should consider developing a performance rating system based on measurable indicators. In the alternative, performance ratings for each CNL site in the ROR include an evaluation of set criteria such as key performance indicators, compliance with licence conditions, events, repeat non-compliances, and licensee action in response to events, as well as the nature of the events themselves.
37. CELA recommends that the CNSC reconsider the frequency of IEMP sampling cycles.
38. Examples of issues identified during IAEA visits at CRL, WL, DPWF, and NPDWF should be given to make it clear what is meant by "no significant issues."
39. The corrective and remedial actions taken after reportable events should be described.
40. The "Safety Significance of Enforcement Actions" column should be reintroduced in the tables in Appendix E.
41. The ROR should provide more details about the Notices of Non-Compliance and the Recommendations provided following an inspection.

42. The ROR should include information on the findings of CNSC-led inspections, what prompted them, whether they were announced or unannounced, and what impact announcing the inspections had on the findings of the inspections. Alternatively, the individual inspection reports should be made publicly available online in whole or in part, so that the public can find the information in the reports themselves.
43. The ROR should include information outlining how the CNSC chooses which inspections should be carried out, and what weight is given to following up on previously identified issues.
44. There should be an explanation as to why CNSC-led inspections did not occur at G1WF in 2021.
45. The upcoming ROR meeting and subsequent RORs should include submissions from CNL and CNSC Staff on measures being taken by nuclear facilities to (1) phase out asbestos use in nuclear facilities by December 31, 2022 and (2) pursue technically and economically feasible asbestos-free alternatives.
46. The Commission should confirm whether the ROR took into account the findings from the IRRS report and if so, where and how, as they appear absent from the ROR.