



JOINT SUBMISSION BY THE 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

October 25, 2021

Prepared by Krystal-Anne Roussel, Legal Counsel

I. INTRODUCTION

This submission is filed by the Canadian Environmental Law Association jointly with the Concerned Citizens of Renfrew County and Area (hereinafter the "intervenor") in response to the Canadian Nuclear Safety Commission's ("CNSC") Notice of Participation at a Commission Meeting and Participant Funding dated July 5, 2021, concerning the presentation of the *Regulatory Oversight Report for Canadian Nuclear Laboratories: 2020* (herein "2020 ROR") released on August 26, 2021.¹ A virtual meeting with respect to this and other matters is scheduled for November 24-25, 2021.

Canadian Environmental Law Association

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").

Concerned Citizens of Renfrew County and Area

The Concerned Citizens of Renfrew County and Area ("CCRCA") is a non-governmental, volunteer organization working to prevent radioactive pollution and encourage clean-up and responsible long-term management of nuclear industry wastes, with a focus on the Chalk River

¹ Canadian Nuclear Safety Commission, "Canadian Nuclear Laboratories – Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2020" (26 August 2021) [2020 ROR].

² Canadian Environmental Law Association, online: <u>www.cela.ca</u>.

Laboratories ("CRL") and other nuclear facilities in the Ottawa Valley.³ For more than 20 years, CCRCA has intervened at all licensing hearings on Chalk River Laboratories held by the Canadian Nuclear Safety Commission (and prior to the year 2000, by the Atomic Energy Control Board).

II. FINDINGS

In response to the 2020 ROR, the intervenor raises a number of issues relating to the ROR's scope and content and provide the following comments relating to CNL's 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 the intervenor is to recommend improvements in the 2020 ROR and make requests to ensure that CNSC Staff provides relevant, additional information when the ROR is before the Commission. The intervenor furthermore intends these comments to be considered when drafting the upcoming ROR for 2021.

A. Scope and Process for Regulatory Oversight Reports

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.

However, as further enumerated below, there are deficiencies in the report which detract from the potential of the ROR. 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 and CCRCA submit that intervenors who provide comments on an ROR should have an opportunity to present orally before the Commission. Currently, intervenors are precluded from presenting and thus the opportunity to engage in dialogue with Commissioners and CNSC Staff does not exist. This maintains the high-level nature of RORs and does not facilitate critical review.

Second, the 2020 ROR states that outreach related to the ROR focused on Indigenous groups from communities near CNL sites and "webinars that targeted the public were discontinued". While the intervenor supports increased consultation and engagement with Indigenous communities

³ Concerned Citizens of Renfrew County and Area, online: https://concernedcitizens.net/

⁴ 2020 ROR, p. 30.

⁵ 2020 ROR, p.30.

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.

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 submits the ROR is in an ideal format for review such as this but as currently drafted, it makes only limited use of this critical review opportunity.

Recommendations

- 1. CELA remains of the view that ROR meetings are not a replacement for relicensing hearings⁶ 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 related 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 licensees' undertakings and sites.

B. Projects Undergoing Federal Environmental Assessment

In order to fully capture the extent of changes at CNL sites, the intervenor <u>recommends</u> that the table in Appendix C, which contains a list of changes to CNL Licences and Licence Conditions Handbooks ("LCH") in 2020, be amended to include updates reflective of ongoing federal environmental assessments ("EAs"). In a number of instances, CNL sites are undergoing federal environmental assessments per the *Canadian Environmental Assessment Act* ("CEAA 2012") and yet there are few comments in the 2020 ROR which mention the EAs, and no comments describing the effect of these EA decisions on existing licences and LCHs.

CELA raised this recommendation in regard to last year's ROR, however, our comments were not addressed during the 2019 Commission Meeting and our recommendation has not been taken up in this year's ROR. The intervenor <u>requests</u> that the Commission, as a lifetime regulator, address the basis on which it has determined that ongoing federal EAs are not relevant to the ROR.

Recommendation

4. In addition to summarizing changes to CNL Licences and Licence Conditions Handbooks, the 2020 ROR should present updates, where applicable, regarding ongoing federal environmental assessments.

⁶ See CNSC "Bruce Power Hearing Transcript – May 29, 2018," p. 188.

C. Chalk River Laboratories

In regard to major activities at Chalk River Laboratories ("CRL"), the 2020 ROR provides that "CNL continues work on the proposal to construct and operate a Near Surface Disposal Facility ("NSDF") at the CRL site." The 2020 ROR also states "Additionally, Global First Power is proposing a small modular reactor ("SMR") at the CRL site." The CNSC states that because these projects will be the subject of separate Commission decisions, they are not specifically discussed in further detail in this ROR.

As these proposed undertakings are fundamentally different from the existing CNL licences at Chalk River, the intervenor <u>recommends</u> including a description of the current plans for the NSDF and SMR in order to provide some context for the proposals and early engagement with the public. The intervenor further <u>recommends</u> that the ROR function as comprehensive and evergreen documents to ensure updates are made to the text when available, such as when these separate Commission decisions are made.

The intervenor notes that the 2020 ROR makes no mention of CNL's Integrated Waste Strategy⁹, which lays out a plan to dispose of CNL managed Low Level Waste at CRL and to transfer CNL managed Intermediate Level Waste and High Level Waste from other sites to CRL for storage until final disposal is available. Since this strategy represents a radical departure from radioactive waste practices and strategies previously espoused by Atomic Energy of Canada, the intervenor **recommends** 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 2020 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. At the "Environmental Stewardship Council" virtual meeting on October 21, 2021, CNL said that it plans to start the Whiteshell High Level Waste shipments next summer. Since there are increased risks associated with the transportation of radioactive waste—specifically increased radiation exposures and increased risks of transport accidents—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.

The transfer of wastes is critical to the CNSC's oversight as Canada's nuclear safety regulator. 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.

During the period from November 2020 to March 2021, numerous waste-related projects were posted on the federal Impact Assessment Registry under section 82 of the *Impact Assessment Act*¹¹, with very little information other than the following headings:

⁷ 2020 ROR, p. 7.

⁸ 2020 ROR, p. 7.

⁹ CNL Integrated Waste Strategy, p. 1-2.

¹⁰ K. Schruder, Chalk River Laboratories Environmental Stewardship Council virtual meeting, October 21, 2021.

¹¹ Impact Assessment Act, SC 2019, c 28.

- 81139 Canadian Nuclear Laboratories Cask Facility Project
- 81177 Canadian Nuclear Laboratories Intermediate Level Waste Storage Area
- 81178 Canadian Nuclear Laboratories Bulk Storage Laydown Area
- 81209 Canadian Nuclear Laboratories Material Pit Expansion Project
- 81375 Canadian Nuclear Laboratories Building Demolition Project
- 81389 Canadian Nuclear Laboratories Waste Management Area Modification Project
- 81403 Canadian Nuclear Laboratories Heel Storage Removal Project
- 81424 Canadian Nuclear Laboratories Effluent Monitoring Stations Upgrade Project
- 81443 Canadian Nuclear Laboratories Multi-Purpose Waste Handling Facility

For each of these projects, a "Notice of Determination" has now been issued by CNL. 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. The intervenor questions the acceptability of a process by which CNL, a privately-owned company, makes its own determinations that its projects, carried out on federal lands, are not likely to cause significant adverse environmental effects. The intervenor further notes that none of these projects are mentioned in the 2020 ROR, which lends to a lack of transparency and a lack of opportunities for public engagement. We **recommend** including a description of the current plans for these projects and an overview of CNL's analysis for determining that they are not likely to cause significant adverse environmental effects.

The intervenor 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." We **recommend** that CNL's role in the implementation of this Plan be addressed at the upcoming Commission meeting.

Recommendations

- 5. The ROR should include a description of the current plans for the NSDF and SMR in order to provide some context for proposals.
- 6. The ROR should function as a comprehensive and evergreen document to ensure updates are made to the text when available.
- 7. The ROR should include a discussion of the Integrated Waste Strategy and the consolidation of high, intermediate, and low-level waste at CRL.
- 8. The ROR should include a description of the nine waste-related projects posted to the federal Impact Assessment Registry between November 2020 and March 2021, and an

¹² https://www.aecl.ca/science-technology/federal-science-and-technology-work-plan/

overview of CNL's analysis for determining that they are not likely to cause significant adverse environmental effects.

- 9. 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.
- 10. CNL's role in the implementation of the Federal Nuclear Science and Technology Work Plan should be addressed at the upcoming ROR meeting.

D. Decommissioning

i. <u>In Situ Decommissioning Projects</u>

Two CNL in situ decommissioning projects are currently undergoing federal EA's. The intervenor provided a number of recommendations during last year's ROR process, however, our comments were not addressed during the 2019 Commission Meeting and our recommendations have not been taken up in this year's ROR. We therefore make the following comments specific to the Whiteshell Laboratories Reactor ("WR-1") and the Nuclear Power Demonstration ("NPD") projects.

Regarding WR-1, the ROR notes, "CNL continues to work on the proposal to change the decommissioning approach for WR-1 from full dismantlement to in situ decommissioning." In 2016, the CNSC received an application by CNL to change the decommissioning approach for WR-1 from full dismantlement to in situ decommissioning. As was discussed at the decommissioning relicensing hearing for the Whiteshell site, the basis for this change in decommissioning planning was, in part, one of economic advantage. This explanation, however, is not apparent from the text of the ROR and the intervenor **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). CNSC staff now claim that "exceptional circumstances" warrant in situ decommissioning of the Whiteshell site. The intervenor **submits** that CNSC staff should explain what "exceptional circumstances" have emerged since the original decision was made to fully dismantle the reactor.

The intervenor also <u>recommends</u> the ROR explain how CNL and the Commission, respectively, weighed economic, environmental, human health, risk and safety considerations. This recommendation remains outstanding from CELA's submissions during last year's ROR process and 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

¹³ 2020 ROR, p. 8.

¹⁴ 2020 ROR, p. 8.

¹⁵ 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.

¹⁶ S. Thompson, NSDF/ISD Fall Series #2:Long-term Safety of Disposal Facilities and In Situ Decommissioning Regulatory Framework, webinar, October 20, 2021.

in the public domain and this ROR presents the perfect opportunity to enhance the transparency of CNSC decision-making and analysis.

Further, given the 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*, the intervenor submits it is appropriate for this range of factors to be requirements in reviewing requests to amend decommissioning or other licenced activities. If there is a REGDOC which guides this weighing of considerations within CNSC deliberations, we **request** it be referenced in the ROR.

On page 18, the 2020 ROR references the "accelerated" decommissioning proposal for the Whiteshell site. ¹⁷ The 2020 ROR also notes that the proposal is for in situ decommissioning ¹⁸, while the original plan for WR-1 was to carry out a full dismantling. ¹⁹ In this regard, the intervenor **recommends** making it clear throughout the 2020 ROR that the plan is to alter the decommissioning approach. It is not merely an accelerated decommissioning, but more importantly a different decommissioning method.

The CNSC states that there will be separate Commission decisions on the proposals for WR-1 and NDP, for which reason the proposals are not specifically discussed further in this ROR.²⁰ This approach, however, 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*. The intervenor <u>recommends</u> including a description of the current decommissioning plans of full dismantling to provide some context for the proposed changes to in situ decommissioning.

Recommendations

- 11. 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.
- 12. CNSC staff should explain what "exceptional circumstances" have emerged since the original decision was made to fully dismantle the reactor.
- 13. The ROR should make it clear throughout that the plan is to alter the decommissioning approach for the WR-1 and NDP projects.
- 14. 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*.

¹⁷ 2020 ROR, p. 18.

¹⁸ 2020 ROR, p. 8.

¹⁹ 2020 ROR, p. 8.

²⁰ 2020 ROR, p. 8.

15. 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. <u>Decommissioning Planning</u>

In addition to the above specific comments, the intervenor <u>recommends</u> that decommissioning planning become a general component of all future ROR reporting. 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.²¹

The intervenor <u>recommends</u> 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,²² this recommendation would further advance the intervenor's recommendations specific to environmental protection considerations in the ROR.

Furthermore, the intervenor <u>recommends</u> 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.

The 2020 ROR mentions that CNL's land use program was launched in 2020 to "establish and achieve appropriate next land uses and end states for sites being decommissioned and remediated." The intervenor <u>recommends</u> that the ROR include more information about the land use program, how it will be applied at each of the CNL sites, and any accompanying public opportunities.

Recommendation

16. To remedy historical oversights, the review of licensees' decommissioning plans should be a required component of RORs. As the 2020 ROR covers all CNL sites, this should include a discussion of the technically complex and challenging decommissioning actions specific to their sites.

E. 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

²¹ Nuclear Safety and Control Act, s 9(a)(i) and (iii).

²² IAEA, Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities (SSG-47), s 2.6.

²³ 2020 ROR, p. 25.

regulatory oversight activities.²⁴ These ratings were based on the As Low As Reasonable Achievable ("ALARA") principle. Not captured in the 2020 ROR however, is any differential between CNL sites. For instance, the ALARA for a contaminated site might be different than that of a decommissioned reactor. Further, in making this decision, the intervenor <u>requests</u> the CNSC to clarify whether it considers the radiation levels of all components or areas of a given a site (i.e. often there is more than one licenced activity occurring at a licenced facility)?

In the transcripts from the 2019 CNL ROR hearing, 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 process would still be used, it may not be as extensive." Despite this recognition, this level of detail and explanation setting out how the decision was reached is not captured in the ROR and we **recommend** it be updated accordingly.

The 2020 ROR also notes 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." The ROR goes 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." 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." The intervenor **recommends** 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.

Recommendations

- 17. The 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).
- 18. 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.

F. Climate Change Resiliency

The intervenor is critical of the 2020 ROR's failure to consider climate change, despite its inclusion of extreme weather events, which may lead to unintended emissions to the environment. In this context, the following was noted in the 2020 ROR in relation to the Port Hope Project:

²⁴ 2020 ROR, Appendix H, pp. 60-66.

²⁵ Transcript from December 10th, 2020 Public Commission Meeting, p. 127.

²⁶ 2020 ROR, p. 18.

²⁷ 2020 ROR, p. 18.

²⁸ 2019 ROR, p. 15.

During heavy rainfall events in 2017, 2018, and 2019, CNL restarted the old Water Treatment Building to treat excess contaminated water, in accordance with their water contingency plan, in order to avoid a release of untreated water to the environment. The Old Water Treatment Building was not used in 2020.²⁹

The intervenor <u>requests</u> information on the size of the rainfall, including how frequently rainfall of this size is projected to occur. The intervenor also <u>requests</u> information on why this rain fall 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.

As climate impacts become more frequent and pronounced, the intervenor urges the CNSC to discuss climate change in the context of licensee oversight because of the major safety and environmental issues that they pose to operations. The intervenor 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. More specifically, we **recommend** that a review of licenseed activities' climate resiliency be included in the regulatory oversight reporting, ³⁰ and ask that the Commission direct CNSC Staff to include this in future RORs.

In the transcripts for the 2019 CNL ROR hearing, it was noted that climate change resiliency is considered through both the updates to environmental risk assessment and updates to safety analyses which have a five-year frequency. As such, it was concluded that annual reporting on climate resiliency would be challenging. The intervenor **recommends** that the most recent updates to the environmental risk assessment and updates to safety analyses which speak to climate change resiliency are reviewed and reflected in the ROR.

Further, in response to these specific incidents, the intervenor <u>recommends</u> that more information be included on the results of the toxicity testing that was mentioned in the 2018 ROR,³¹ 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 and 2020 RORs leaves doubt as to the severity/concentration of these releases.

Recommendations

- 19. Information should be included on why the heavy rain at PHP led to the release of untreated water and what has been done to avoid a repeat release of untreated water.
- 20. 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.

²⁹ 2020 ROR, p. 84.

³⁰ CELA has previously made this submission to the Commission, including in our 2017 comments on the ROR for Nuclear Substances: 2017 and 2020 comments on the ROR for Canadian Nuclear Laboratories Sites: 2019.

³¹ 2018 ROR, p. 94.

- 21. 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.
- 22. Information should be included on the results of the toxicity testing mentioned in the 2018 ROR.

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

In previous ROR submissions,³² CELA has discussed the need for consistent, comprehensive data on the releases of radionuclides from CNSC regulated facilities. Unfortunately, despite our prior recommendations on this topic, the need for accessible radionuclide emission data has gone unheeded again 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.

The intervenor 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.

Unlike the 2018 ROR, the 2020 ROR no longer speaks to whether the CNSC and NPRI are still working together to establish active links between the CNSC and NPRI websites. Instead, the 2020 ROR states that CNSC staff have commenced publishing annual releases of radionuclides to the environment from facilities on the CNSC Open Government Portal. CELA reaffirms its comments that this is an improper substitute for the more detailed and publicly accessible data that would be provided on the NPRI. We **request** the Commission seek further direction on this matter and provide a report back on what means are being proposed to ensure those who actively use and access the NPRI will be made aware of a parallel CNSC-based site.

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

In addition to this submission, CELA has been active in advocating for radionuclide data to be accessible on the NPRI.³³ CELA will continue to closely monitor how this data is released.

Recommendation

23. Radionuclides data should be reportable and accessible on Canada's National Pollutant Release Inventory ("NPRI") in a similar manner as pollutants currently reported.

H. Waste Management

The 2020 ROR provides one-sentence descriptions of site-specific waste management activities completed at CRL, WL, PHP, PGP, DP, G-1 and NDP.³⁴ 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 is insufficient. The intervenor **recommends** that a detailed overview of waste management activities being undertaken at each CNL site be included in the ROR.

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

Radioactive wastes stored on the sites covered by this report consist of high-, intermediateand low-level radioactive wastes. The inventory of wastes stored at CNL sites 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)* ["Canada's 7th Report"].³⁵

The intervenor notes 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 as Low Level Waste. The intervenor **recommends** that 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 ROR meeting.

Recommendations

- 24. The ROR should include more information about the CNL's land use program and how it will be applied at each of the CNL sites.
- 25. The ROR should include a detailed overview of waste management activities being undertaken at each CNL site.

³³ See for instance, online: https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/public-consultations/proposal-radionuclides-national-pollutant-release-inventory.html

³⁴ 2020 ROR, p. 25.

³⁵ 2020 ROR, p. 25.

26. 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 ROR meeting.

I. Specific Comments

i. <u>Changes to 2020 Regulatory Oversight Report</u>

The 2020 ROR provides 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 CNSC. The intervenor **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.³⁶ 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

27. The section titled "Changes to 2020 Regulatory Oversight Report" should identify which recommendations and feedback prompted specific changes to the ROR.

ii. <u>Section 3.1 Regulatory Activities</u>

The 2020 ROR notes "an increase in the licensing work offset by a reduction in compliance work" compared to previous years.³⁷ Yet Appendix C (Licences and Licensing Activities) shows no licensing changes in 2020 (other than a new licence for Whiteshell Laboratories issued in January 2020 for which substantive work was done in 2019).

The ROR attributes the increased licensing activity in part to "an increased focus on the review of updated and new CNL programmatic documents." No information is provided on these new CNL programmatic documents. The intervenor **recommends** that the CNSC provide information regarding these programmatic documents at the upcoming ROR meeting. For instance, do they pertain to new CNL waste disposal projects, such as entombment of the WR-1 and NPD reactors, and construction of the NSDF at the Chalk River site? Did this consist mostly of desktop reviews?

³⁶ Personal correspondence from K Blaise to cns.consultation.ccsn@canada.ca dated July 7, 2021.

³⁷ 2020 ROR, p. 14.

³⁸ 2020 ROR, p. 14.

Recommendation

28. The CNSC should provide information regarding the programmatic documents that were the focus of its increased licencing work at the upcoming ROR meeting.

iii. <u>Section 3.2 Performance Ratings</u>

The 2020 ROR provides qualitative performance ratings for the 14 CNSC safety and control areas ("SCAs") for all CNL sites. For 2020, a binary rating system consisting of either "satisfactory" (SA) or "below expectations" (BE) has been used to assign licensee performance. This was based on the Commission Meeting Minutes, *Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held on December 8, 9 and 10, 2020*, in which the Commission agreed with the use of a binary approach for RORs, using only SA or BE ratings.³⁹

CNSC staff conclude that CNL has met regulatory requirements and for 2020 have rated all SCAs at all CNL licensed sites as "satisfactory". No further information is provided regarding how the "satisfactory" rating was achieved. In the transcripts for the 2019 CNL ROR hearing, it was noted that "Safety and control area performance is rated using 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."

The intervenor <u>recommends</u> that the CNSC consider developing a performance rating system based on measurable indicators, as has been used in previous years. In the alternative, the intervenor <u>recommends</u> that performance ratings for each CNL site in the ROR include an evaluation of the set criteria outlined in the above paragraph.

Recommendation

29. 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.

iv. Section 4.8.1 Performance

In 2020, there were five recordable lost-time injuries ("RLTI") for all CNL sites.⁴⁰ However, the 2020 ROR only describes one of these incidents. The intervenor **suggests** describing each of the accidents/incidents that led to RLTIs.

³⁹ 2020 ROR, p. 15.

⁴⁰ 2020 ROR, p. 20.

Recommendation

30. All the accidents/incidents that led to RLTIs should be described – not just one of them.

v. Section 4.9.3 Assessment and Monitoring

The 2020 ROR states that:

The monitoring results for 2020 at the PHP indicate that there were no exceedances of the Ambient Air Quality Criteria; however, levels of arsenic, uranium, fluoride, and cobalt in surface water exceeded the Provincial Water Quality Objectives or Canadian Water Quality Guidelines for the Protection of Aquatic Life in certain locations along Brand Creek, Highland Drive South Creek and Alexander Creek due to historical releases of untreated contaminated water from sites or contaminated sediment. These releases predate the Port Hope Area Initiative and are expected to be remediated as part of the project.

The intervenor <u>requests</u> further information on the surface water exceedances described above and specific details of the remediation activities planned as part of the Port Hope Area Initiative.

Recommendation

31. Information on the surface water exceedances at PHP and specific details of the remediation activities planned as part of this project should be provided.

vi. <u>Section 4.9.4 Independent Environmental Monitoring Program</u>

In 2020, CNSC staff did not conduct independent environmental monitoring around CNL sites as no activities were scheduled in 2020 as part of the IEMP plan. The intervenor <u>requests</u> information as it pertains to upcoming independent environmental monitoring around CNL sites.

The intervenor also **recommends** reverting to the previous approach used in the 2018 ROR, which provided more information regarding the IEMP and what it involves.

Recommendations

- 32. Information as it pertains to upcoming independent environmental monitoring around CNL sites should be provided.
- 33. The ROR should revert to the previous approach used in the 2018 ROR, which provided more information regarding the IEMP and what it involves.

vii. Section 4.13 Safeguards and Non-Proliferation

The CNSC mentions IAEA activities at CRL, WL, PHP, DP, G-1 and NDP 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".⁴¹ The intervenor <u>recommends</u> including examples of what types of issues were identified to make it clear what is meant by "no <u>significant</u> issues".

Recommendation

34. Examples of issues identified during IAEA visits at CRL, WL, PHP, DP and G-1 should be given to make it clear what is meant by "no significant issues".

viii. <u>Section 5.1 Reportable Events</u>

A total of 37 events were reported to and assessed by CNSC staff in 2020. Appendix F provides a list and a brief description of these reportable events. For these events, the 2020 ROR simply states that "CNSC staff are satisfied with CNL's corrective actions." The intervenor <u>recommends</u> briefly mentioning the corrective and remedial actions taken.

Recommendation

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

ix. Section 5.2 Public Engagement

The 2020 ROR states that outreach related to the ROR focused on Indigenous groups from communities near CNL sites and "webinars that targeted the public were discontinued". While the intervenor supports increased consultation and engagement with Indigenous communities related to the ROR, we <u>recommend</u> that webinars targeted to the public should not be discontinued. The intervenor further <u>recommends</u> that the CNSC should reintroduce public webinars to provide information on this ROR and the CNSC.

The intervenor also notes that the CNSC's PowerPoint presentation⁴³ for the upcoming December 10 Commission Meeting contains some information that is not included or discussed in the 2020 ROR itself. The CNSC does note that the information provided in the ROR is complementary to the information provided in the PowerPoint presentation.⁴⁴ The intervenor submits this approach is counter to the stated purpose of these Regulatory Oversight Reports, which is to provide objective scientific, technical and regulatory information to the public. Intervenors must have full and fair opportunity to review all meeting materials in advance of the Commission meeting for the ROR. Without this, their ability to meaningfully engage in the public participation process is minimized. The intervenor therefore <u>recommends</u> including this information in the 2020 ROR, and to provide relevant discussions of said information within the ROR.

⁴¹ 2020 ROR, p. 25.

⁴² 2020 ROR, p.30.

⁴³ CMD 20-M22.A.

⁴⁴ 2019 ROR, p. 4.

Recommendation

36. Information from the CNSC's PowerPoint presentation for the upcoming December 10 Commission Meeting should be included in the 2020 ROR.

x. Appendix E. List of Inspections at CNL Sites in 2020

The tables in Appendix E include a column for the "Number of Enforcement Actions 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. The intervenor <u>recommends</u> reintroducing this column in the tables in Appendix E. The intervenor also <u>recommends</u> including more information about the nature of the recommendations made following an inspection.

The intervenor 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. In response, CNCS staff indicated at the ROR meeting that their tracking data does not "distinguish whether the findings came from an announced or unannounced inspection." 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, the intervenor <u>recommends</u> making the individual inspection reports publicly available online in whole or in part, 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.

The intervenor also <u>recommends</u> including information in the 2020 ROR outlining how the CNSC chooses which inspections should be carried out, and what weight is given to following up on previously identified issues.

⁴⁵ See for instance, CELA's Submission on the 2018 ROR on the Use of Nuclear Substances in Canada.

⁴⁶ CNSC, Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held on November 6–7, 2019, para 101.

Recommendations

- 37. The "Safety Significance of Enforcement Actions" column should be reintroduced in the tables in Appendix E.
- 38. The ROR should include more information about the nature of the recommendations made following an inspection.
- 39. 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.
- 40. 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.
- xi. 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 is included in the 2020 ROR. The 2020 ROR simply mentions that, in 2019 and 2020, "hazard reduction work continued, including asbestos abatement."

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 asbestosfree alternatives.⁴⁷ The intervenor therefore **recommends** a discussion of this issue be included at the upcoming ROR meeting and subsequent RORs.

Recommendation

41. 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.

⁴⁷ Prohibition of Asbestos and Products Containing Asbestos Regulations: SOR/2018-196

xii. Appendix K. Total Annual Release of Radionuclides

Commenting on the Port Hope Project, the following is said: "During heavy rainfall events in 2017, 2018, and 2019, CNL restarted the old Water Treatment Building to treat excess contaminated water". With an eye to future impacts due to climate change, the intervenor **requests** information on the amount of excess water and the capacity of the new Waste Water Treatment Plant and the old Water Treatment Building. The aim of this request is to assess to which extent the facility is able to handle the increasing size and frequency of severe weather events.

Recommendation

42. Information on the amount of excess water and the capacity of the new Waste Water Treatment Plant and the old Water Treatment Building at PHP should be provided.

xiii. Appendix L. Estimated Dose to the Public

Appendix L contains information on the estimated dose to the public around CNL sites using Derived Release Limits ("DRLs") and makes the following conclusion:

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.⁴⁹

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.⁵⁰ The intervenor **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 recent IRRS report and if so, where and how, as they appear absent from the ROR.

Recommendation

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

⁴⁸ 2020 ROR, p. 84.

⁴⁹ 2020 ROR, p. 86.

⁵⁰ 2019 Report of the Integrated Regulatory Review Service (IRRS) Mission to Canada, p. 53.

III. CONCLUSION

We respectfully provide these comments to assist the CNSC in its review of Canadian Nuclear Laboratories.

Sincerely,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION

Krystal-Anne Roussel, Legal Counsel

Appendix 1 Summary of Recommendations

- 1. CELA remains of the view that ROR meetings are not a replacement for relicensing hearings⁵¹ 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 related 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 licensees' undertakings and sites.
- 4. In addition to summarizing changes to CNL Licences and Licence Conditions Handbooks, the 2020 ROR should present updates, where applicable, regarding ongoing federal environmental assessments.
- 5. The ROR should include a description of the current plans for the NSDF and SMR in order to provide some context for proposals.
- 6. The ROR should function as a comprehensive and evergreen document to ensure updates are made to the text when available.
- 7. The ROR should include a discussion of the Integrated Waste Strategy and the consolidation of high, intermediate, and low-level waste at CRL.
- 8. The ROR should include a description of the nine waste-related projects posted to the federal Impact Assessment Registry between November 2020 and March 2021, and an overview of CNL's analysis for determining that they are not likely to cause significant adverse environmental effects.
- 9. The ROR should provide an update on the status of CNL's waste transfer activities, and specifically, state if the High Level Waste transfer from Whiteshell to CRL will begin in summer 2022.
- 10. CNL's role in the implementation of the Federal Nuclear Science and Technology Work Plan should be addressed at the upcoming ROR meeting.
- 11. 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

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⁵¹ See CNSC "Bruce Power Hearing Transcript – May 29, 2018," p. 188.

- revised risk assessments) and provide evidence of how CNL and the CNSC, respectively, weighed economic, environmental, human health, risk and safety considerations.
- 12. CNSC staff should explain what "exceptional circumstances" have emerged since the original decision was made to fully dismantle the reactor.
- 13. The ROR should make it clear throughout that the plan is to alter the decommissioning approach for the WR-1 and NDP projects.
- 14. 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.
- 15. 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.
- 16. To remedy historical oversights, the review of licensees' decommissioning plans should be a required component of RORs. As the 2020 ROR covers all CNL sites, this should include a discussion of the technically complex and challenging decommissioning actions specific to their sites.
- 17. The 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).
- 18. 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.
- 19. Information should be included on why the heavy rain at PHP led to the release of untreated water and what has been done to avoid a repeat release of untreated water.
- 20. 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.
- 21. 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.
- 22. Information should be included on the results of the toxicity testing mentioned in the 2018 ROR.

- 23. Radionuclides data should be reportable and accessible on Canada's National Pollutant Release Inventory ("NPRI") in a similar manner as pollutants currently reported.
- 24. The ROR should include more information about the CNL's land use program and how it will be applied at each of the CNL sites.
- 25. The ROR should include a detailed overview of waste management activities being undertaken at each CNL site.
- 26. 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 ROR meeting.
- 27. The section titled "Changes to 2020 Regulatory Oversight Report" should identify which recommendations and feedback prompted specific changes to the ROR.
- 28. The CNSC should provide information regarding the programmatic documents that were the focus of its increased licencing work at the upcoming ROR meeting.
- 29. 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.
- 30. All the accidents/incidents that led to RLTIs should be described not just one of them.
- 31. Information on the surface water exceedances at PHP and specific details of the remediation activities planned as part of this project should be provided.
- 32. Information as it pertains to upcoming independent environmental monitoring around CNL sites should be provided.
- 33. The ROR should revert to the previous approach used in the 2018 ROR, which provided more information regarding the IEMP and what it involves.
- 34. Examples of issues identified during IAEA visits at CRL, WL, PHP, DP and G-1 should be given to make it clear what is meant by "no significant issues".
- 35. The corrective and remedial actions taken after reportable events should be described.

- 36. Information from the CNSC's PowerPoint presentation for the upcoming December 10 Commission Meeting should be included in the 2020 ROR.
- 37. The "Safety Significance of Enforcement Actions" column should be reintroduced in the tables in Appendix E.
- 38. The ROR should include more information about the nature of the recommendations made following an inspection.
- 39. 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.
- 40. 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.
- 41. 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.
- 42. Information on the amount of excess water and the capacity of the new Waste Water Treatment Plant and the old Water Treatment Building at PHP should be provided.
- 43. The Commission should confirm whether the ROR took into account the findings from the recent IRRS report and if so, where and how, as they appear absent from the ROR.