



Date: 2020-11-16

File / dossier : 6.02.04

Edocs pdf : 6405052

**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: 2019**

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**Rapport de surveillance  
réglementaire des sites des  
Laboratoires Nucléaires  
Canadiens : 2019**

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Commission Meeting

Réunion de la Commission

**December 10, 2020**

**Le 10 décembre 2020**

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**SUBMISSION BY THE CANADIAN ENVIRONMENTAL LAW ASSOCIATION  
TO THE CANADIAN NUCLEAR SAFETY COMMISSION REGARDING THE  
REGULATORY OVERSIGHT REPORT FOR CANADIAN NUCLEAR  
LABORATORIES: 2019**

**November 16, 2020**

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**I. INTRODUCTION**

These submissions are filed in response to the Canadian Nuclear Safety Commission’s (“CNSC”) revised notice of Participation at a Commission Meeting and Participant Funding dated June 30, 2019, concerning the presentation of the *Regulatory Oversight Report for Canadian Nuclear Laboratories: 2019* (herein “2019 ROR”) released on October 5, 2020.<sup>1</sup> A virtual meeting with respect to this and other matters is scheduled for December 8-10, 2020.

CELA is a non-profit, public interest law organization. For 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.<sup>2</sup> 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).

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<sup>1</sup> Canadian Nuclear Safety Commission, “Canadian Nuclear Laboratories – Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2019” (5 October 2020) [2019 ROR]; Notice: <http://nuclearsafety.gc.ca/eng/the-commission/pdf/NoticeMeetingPFP-ROR-CNL-2019-Rev1-e.pdf>.

<sup>2</sup> Canadian Environmental Law Association, online: [www.cela.ca](http://www.cela.ca).

## **II. FINDINGS**

In response to the 2019 ROR, CELA raises a number of issues relating to the ROR's scope and content and provides 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 CELA is to recommend improvements in the 2019 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 2020 and during the drafting and review of the upcoming ROR Discussion Paper which according to the CNSC Staff's presentation for a prior ROR this Fall, is anticipated by end of year 2020.<sup>3</sup> CELA additionally submits that the upcoming Discussion Paper consultation is not a stand in for a response on the matters discussed below, specific to this ROR.

CELA would also like to note that, while COVID is not strictly speaking a 2019-related issue, CELA finds that the ROR meeting presents an important opportunity to discuss the impact of COVID on the activities covered by this ROR. As such, CELA believes the Commission should seize this opportunity to discuss emergency planning and the efficacy of existing emergency plans when emergency response and medical personnel may be at or beyond capacity, and should ensure a review of offsite emergency plans, including plans for evacuees and evacuation centres, to make sure that they have been reviewed and possibly revised with due consideration of public health guidelines.

### **A. Scope and Process for Regulatory Oversight Reports**

Generally, CELA remains supportive of the CNSC's ROR for CNL sites, although the 2019 ROR has been significantly shortened – as further discussed below. 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:

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<sup>3</sup> Online: <https://www.nuclearsafety.gc.ca/eng/the-commission/meetings/cmd/pdf/CMD20/CMD20-M23-A.pdf>

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.<sup>4</sup>

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. 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*, we submit 30 days remains an insufficient amount of time for members of the public and civil society to review the material of the ROR and provide value-added comments to the Commission. The public's ability to weigh-in during the ROR process can be further constrained due to the time lag in requesting and receiving references or supporting material, or, as in this case, other competing CNSC review deadlines. While CELA is not opposed to this ROR being reviewed by the Commission in tandem with other RORs (as will occur during the scheduled December 2020 meeting), the length of time granted for review should be extended in light of the other matters also open for public comment. Should the Commission choose to have multiple comment opportunities with the same closing date, at least 60 days should be provided as recognition of the importance and value of public comments, and to further fairness and respect for adequate procedural rights.

*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? CELA 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 hearings<sup>5</sup> and the CNSC must remedy the discrepancy in participation rights among public intervenors and licensees by providing oral presentation opportunities.

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<sup>4</sup> 2019 ROR, p. 18.

<sup>5</sup> See CNSC "Bruce Power Hearing Transcript – May 29, 2018," p. 188.

2. The CNSC should extend the amount of time provided to the public for the review of RORs and ensure a minimum 60-day timeframe is provided.
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. Level of Detail in 2019 ROR Significantly Reduced Compared to 2018 ROR<sup>6</sup>**

Compared to the 2018 ROR, CELA notes a significant reduction in how much information is provided in the 2019 ROR. While the 2018 ROR spanned 104 pages, including 47 pages of appendices, the 2019 ROR spans 66 pages, including 44 pages of appendices. A large amount of information has thus been removed from the 2019 ROR. The specifics of this concern are outlined further later in this submission, as well as CELA's analysis of the significance and implications arising from these reductions and omissions in the 2019 ROR.

CELA presumes that the additional information was included in the 2018 ROR because it was deemed relevant and necessary to the deliberations of the Commission and to allow the public a reasonable opportunity to review the oversight of CNL. Yet, it would seem that the CNSC has since changed its view on what information should be included in the ROR. CELA therefore **requests** an explanation as to why the CNSC has decided to significantly reduce the amount of information included in the ROR. In doing so, the CNSC should explain how they made the choice to remove the specific information that has been taken out of the 2019 ROR, compared to the 2018 ROR. The CNSC should also explain what documents, if any, might provide this information to the Commission and the public in a similarly accessible and cohesive way, now that it has been removed from the 2019 ROR.

CELA notes that, the less supporting information is provided, the less likely it will be that the public can fully assess the foundation of the CNSC's conclusions in the ROR. And in turn, the less is achieved by making these reports available for consideration by the public. If the report barely discusses the basis for the ratings, this begs the question whether the 2019 ROR is fully able to serve its stated purpose?

CELA furthermore notes that the CNSC's PowerPoint presentation<sup>7</sup> for the upcoming December 10 Commission Meeting contains some information that is not included or discussed in the 2019 ROR itself. The CNSC does note that the information provided in the ROR is complementary to the information provided in the PowerPoint presentation.<sup>8</sup> CELA submits this approach is

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<sup>6</sup> Canadian Nuclear Safety Commission, "Canadian Nuclear Laboratories – Regulatory Oversight Report for Canadian Nuclear Laboratories Sites: 2018" (16 August, 2019) [**2018 ROR**].

<sup>7</sup> CMD 20-M22.A.

<sup>8</sup> 2019 ROR, p. 4.

counter to the stated purpose of these Regulatory Oversight Reports. CELA therefore **recommends** including this information in the 2019 ROR, and to provide relevant discussions of said information within the ROR. Important information for each site such as the CNSC's regulatory focus, the amount of hours spent on compliance and licencing work, and the number of reported events is included in the CNSC's presentation, but not in the 2019 ROR itself. Including details in the presentation, but not in the Report that forms the basis of said presentation, appears somewhat illogical.

### **Recommendation**

4. Given the above mentioned issues, as well as the specific comments provided below, CELA **recommends** issuing a revised ROR containing more complete and detailed information with regards to all of the licensed activities covered by the ROR.

### **C. Projects Undergoing Federal Environmental Assessment**

In order to fully capture the extent of changes at CNL sites, CELA **recommends** that the table on p. 9, which contains a list of changes to CNL Licences and Licence Conditions Handbooks (LCH) in 2019, be amended to include updates reflective of ongoing federal environmental assessments. In a number of instances, CNL sites are undergoing federal environmental assessments per the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) and yet, there are few comments in the 2019 ROR, which mention the EAs, and no comments describing the effect of these EA decisions on existing licences and LCHs.

### **Recommendation**

5. The 2019 ROR should present updates, where applicable, regarding ongoing federal environmental assessments.

### **D. Decommissioning**

#### **i. In Situ Decommissioning Projects**

Two CNL *in situ* decommissioning projects are currently undergoing federal EA's. CELA makes the following comments specific to the Whiteshell Laboratories Reactor (WR-1) and the Nuclear Power Demonstration (NPD) projects.

Regarding WR-1, the ROR notes, "In 2016, the CNSC received an application by CNL to change the decommissioning approach for WR-1 from full dismantlement to in-situ

decommissioning.”<sup>9</sup> 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.<sup>10</sup> This explanation, however, is not apparent from the text of the ROR and CELA **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). CELA also **recommends** the ROR explain how CNL and the Commission, respectively, weighed economic, environmental, human health, risk and safety considerations.

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*, CELA 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.

The 2019 ROR references the “accelerated” decommissioning proposals for WL and NPD on a number of occasions.<sup>11</sup> The 2019 ROR, however, also notes that the proposals are for in-situ decommissioning<sup>12</sup>, while the original plan for NPD and WR-1 were to carry out a full dismantling.<sup>13</sup> In this regard, CELA **recommends** making it clear throughout the 2019 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 this project, for which reason this project is not specifically discussed further in this ROR.<sup>14</sup> CELA **recommends** including a description of the current decommissioning plans of full dismantling to provide some context for the proposed changes to in-situ decommissioning.

Furthermore, we **recommend** the RORs functioning as comprehensive and evergreen documents, to ensure updates are made to the text when available. For instance, the 2018 ROR stated, “For this reporting year, CNSC staff rated all SCAs as “satisfactory” with the exception of the security SCA at Whiteshell Laboratories which was rated as ‘below expectations’. This will be elaborated upon during the October 2/3, 2019 Whiteshell relicensing hearings.” In response, CELA **recommends** the 2019 ROR be updated accordingly, with the information from the Whiteshell hearing.

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<sup>9</sup> 2019 ROR, p. 6.

<sup>10</sup> 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>.

<sup>11</sup> 2019 ROR, pp. 1, 4, 7, 14, 15 and 20.

<sup>12</sup> 2019 ROR, pp. 6, 7, 15 and 18.

<sup>13</sup> 2019 ROR, p. 6 (regarding WR-1) and p. 7 (regarding NPD).

<sup>14</sup> 2019 ROR, p. 6.

The 2019 ROR also mentions “large scale hazard reduction activities (asbestos abatement)”. Given Canada’s prohibition on asbestos and products containing asbestos (which went into effect on December 30, 2018), CELA is of the view that it would have been relevant for the 2019 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.<sup>15</sup> CELA therefore **recommends** a discussion of this issue be included at the upcoming ROR meeting and subsequent RORs.

## Recommendations

6. 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 secondly, provide evidence of how CNL and the CNSC, respectively, weighed economic, environmental, human health, risk and safety considerations.
7. The ROR meeting 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.
8. 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 addition to the above specific comments, CELA **recommends** 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.<sup>16</sup>

Like all nuclear facilities, decommissioning is the inevitable end for an accelerator lifecycle. However, as the International Atomic Energy Association (IAEA) cautions, it has only been more recently that attention has been focused on the generation of radioactive waste and the

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<sup>15</sup> Prohibition of Asbestos and Products Containing Asbestos Regulations: SOR/2018-196

<sup>16</sup> *Nuclear Safety and Control Act*, s 9(a)(i) and (iii)

radiological hazards associated with decommissioning. This realization also occurred at a time when “thousands of accelerators around the world were already in operation.”<sup>17</sup>

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,<sup>18</sup> this recommendation would further advance CELA’s recommendations specific to environmental protection considerations in the ROR.

Furthermore, CELA **recommends** 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.

### **Recommendation**

9. To remedy historical oversights, the review of licensees’ decommissioning plans should be a required component of RORs. As the 2019 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 2019 ROR’s statement that “For 2019, CNSC staff rated the radiation protection SCA at all CNL licensed sites as “satisfactory” based on regulatory oversight activities.”<sup>19</sup> Accordingly, these ratings were based on the As Low As Reasonable Achievable (ALARA) principle. Not captured in the 2019 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, does the CNSC consider 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)? 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.

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<sup>17</sup> IAEA, Decommissioning of Particle Accelerators (No. NW-T-2.9), p 2

<sup>18</sup> IAEA, Decommissioning of Nuclear Power Plants, Research Reactors and Other Nuclear Fuel Cycle Facilities (SSG-47), s 2.6

<sup>19</sup> 2018 ROR, p. 12.

Secondly, while the 2018 ROR stated “CNSC staff have come to these conclusions on the basis of inspections performed at CNL sites, along with desktop reviews”,<sup>20</sup> a similar statement is not included in the 2019 ROR. Regardless, CELA reiterates its **request** that the Commission confirm whether any of the facilities covered by the 2019 ROR were rated solely or primarily on the basis of desktop reviews.

## **Recommendations**

10. 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).
11. The Commission should confirm whether any of the facilities covered by the 2019 ROR were rated solely or primarily on the basis of desktop reviews.

## **F. Climate Change Resiliency**

CELA is critical of the 2019 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 2019 ROR in relation to the Port Hope Project:

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.<sup>21</sup>

The CNSC also mentions a release of untreated water from PGP to Lake Ontario and the Port Granby Creek following heavy rain in July 2019.<sup>22</sup> CELA **requests** information on the size of the rainfall, including how frequently rainfall of this size is projected to occur. CELA also **requests** 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, CELA again 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. 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 CELA recommends the CNSC review the climate resiliency of licensees as

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<sup>20</sup> 2018 ROR, p. 12.

<sup>21</sup> 2019 ROR, p. 41.

<sup>22</sup> 2019 ROR, p. 12.

part of their regulatory oversight reporting. More specifically, we again **recommend** that a review of licenced activities' climate resiliency be included in the regulatory oversight reporting,<sup>23</sup> and ask that the Commission direct CNSC Staff to include this in future RORs.

Further, in response to these specific incidents, CELA **recommends** that more information be included on the results of the toxicity testing that was mentioned in the 2018 ROR,<sup>24</sup> 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 and 2019 RORs leaves doubt as to the severity/concentration of these releases.

### **Recommendation**

12. Information should be included on why the heavy rain at PGP led to the release of untreated water at PGP, and what has been done to avoid a repeat release of untreated water.
13. 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.
14. 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,<sup>25</sup> CELA has discussed the need for consistent, comprehensive data on the releases of radionuclides from CNSC regulated facilities. Radionuclides are not reported to Canada's National Pollutant Release Inventory (NPRI), an online data portal and a key resource for identifying pollution prevention priorities, supporting the assessment and risk management of chemicals, and encouraging 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

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<sup>23</sup> CELA has previously made this submission to the Commission, including in our 2017 comments on the ROR for Nuclear Substances: 2017.

<sup>24</sup> 2018 ROR, p. 94.

<sup>25</sup> 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); and our 2019 comments on the 2018 ROR for CNL.

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.

CELA again 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 2019 ROR no longer speaks to whether the CNSC and NPRI are still working together to establish active links between the CNSC and NPRI websites. This is, however, confirmed on the CNSC website, which notes that "In 2020–21 there will be further expansion of digital data sources for radionuclide release transfers and disposal, and improvements to the interoperability of the CNSC and NPRI datasets."<sup>26</sup> CELA reaffirms its comments that this is an improper substitute for inclusion on the NPRI.<sup>27</sup> We **request** the Commission seek further direction 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.

In addition to this submission, CELA has been active in advocating for radionuclide data to be accessible on the NPRI.<sup>28</sup> CELA will continue to closely monitor how this data is released.

## **Recommendations**

15. Radionuclides should be reportable to Canada's National Pollutant Release Inventory (NPRI), supporting the assessment and risk management of chemicals, and encouraging actions aimed at reducing pollutant releases.

## **H. Specific Comments**

### **i. Section 3.1 Regulatory Activities**

A number of new Licence Condition Handbooks are mentioned. CELA **recommends** including information on key changes to these handbooks in the 2019 ROR, as well as what has prompted these changes.<sup>29</sup>

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<sup>26</sup> <http://nuclearsafety.gc.ca/eng/resources/publications/reports/rpp/dp-2020-2021/index.cfm>.

<sup>27</sup> 2018 ROR, p. 90.

<sup>28</sup> 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>

<sup>29</sup> 2019 ROR, p. 9.

The CNSC mentions IAEA activities at CRL, WL, PHP, DP and G-1 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”.<sup>30</sup> CELA **recommends** including examples of what types of issues were identified to make it clear what is meant by insignificant issues.

ii. Section 3.2 Performance Ratings 2019

The CNSC comments on the security issues at Whiteshell, which received a Below Expectations rating in 2018 and 2019, and mentions that an order was issued to implement changes to CNL’s so-called ‘security posture’ at Whiteshell. CELA **recommends** explaining what type of changes this would entail.<sup>31</sup>

CELA also reiterates its comments from last year that the ROR could be a helpful tool to detail areas which are below expectations and a forum to discuss plans for improvement. As it is still unclear from the 2019 ROR what component of Security is lacking, and as surveillance is a component of security, CELA again **recommends** the Commission require CNL to review and implement the most recent decommissioning REGDOC, REGDOC-2.11.2, immediately following its final publication.

Unlike existing guidance, section 6.1 of REGDOC-2.11.2 contains greater detail pertinent to surveillance and requires that licensees detail their surveillance strategy. Accordingly, the details which are to be provided within a surveillance plan include:

- responsibilities
- functional services and systems
- maintenance, inspection and surveillance
- building hazard identification
- hazard control measures
- activities envisioned or planned to reduce the risks
- access control and zoning
- environmental protection control measures
- emergency plan and procedures
- usage boundaries during storage with surveillance
- facility change or modification process
- waste management
- quality assurance
- qualification and training program

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<sup>30</sup> 2019 ROR, p. 9.

<sup>31</sup> 2019 ROR, p. 11.

- records

In relation to the BE rating given to Whiteshell for the Security SCA, the CSNC also states that “CNL has made significant progress, and CNSC staff expect that CNL will complete all actions identified in the corrective action plan, as well as additional response force training and procurement, by the end of September 2020” (emphasis added).<sup>32</sup> CELA notes that the 2019 ROR is dated October 5 2020, and **asks** the CNSC to provide an update on whether CNL has completed all identified actions in the corrective action plan, and to briefly describe what these actions consist of.

Finally, CELA acknowledges that, as the above recommendations and questions relate to security, there are likely to be security concerns related to release of detailed or specific information. To the extent that this concern precludes the inclusion of the information in question, CELA **recommends** providing more generalized information, which does not provide a level of detail that would raise additional security concerns.

iii. Section 4.1 Environmental Protection

The CNSC describes a reported exceedance of action levels for arsenic, uranium, molybdenum and radium-226 in effluent at PGP.<sup>33</sup> CELA **recommends** including a clearer explanation of the cause of these exceedances.

iv. Section 4.2 Radiation Protection

Revisions to the PHAI RP Plan for the PHP and PGP in February 2019 included updates to the action levels for radiological exposures to be more aligned with current work activities, and CNL revised the action levels at DP and G-1 based on reviews of historical dosimetry results and planned activities.<sup>34</sup> CELA **asks** whether the action levels were revised up or down.

In April 2019 4 skin contamination events occurred within 1 week while removing contaminated piping at WL. CNL determined that improvements in protective clothing were necessary.<sup>35</sup> CELA **requests** an explanation as to why this was only determined after workers had actually been exposed? CELA also **asks** why the CNSC had not already imposed licence conditions requiring sufficient protective clothing? CELA presumes that the CNSC would have been aware of the work involving the removal of contaminated piping, and would thus have been in a position to impose relevant protection requirements as basic as wearing protective clothing? If

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<sup>32</sup> 2019 ROR, p. 11.

<sup>33</sup> 2019 ROR, p. 12.

<sup>34</sup> 2019 ROR, p. 15.

<sup>35</sup> 2019 ROR, p. 16.

that is not the case, CELA **asks** what can be done to ensure that the CNSC is aware of these types of exposure risks?

v. Section 4.3 Conventional Health and Safety

CNL conducted a company-wide safety stand down on May 30, dedicating the day to safety awareness and strengthening work practices.<sup>36</sup> CELA commends this type of event and hopes that it will be replicated in future years and by other licensees.

In 2019 there were a number of recordable loss time injuries.<sup>37</sup> However, the 2019 ROR only describes one of these. CELA **suggests** describing each of the accidents/incidents that led to these RLTIs.

vi. Section 5.1 Reportable Events

A power outage occurred at CRL, as a result of an electrical malfunction of a 2400V distribution cable. CNL took corrective and remedial actions, which the CNSC found would reduce the risk of a similar event in the future, and the consequences of such an event should one occur. CELA **recommends** briefly mentioning the corrective and remedial actions taken.

vii. Section 5.4 Waste and Decommissioning

This section comments on various aspects of the ongoing decommissioning, and mentions CNL pursuing accelerated decommissioning strategies at many of its sites. One of the potential consequences of such accelerated decommissioning is increases in worker radiation doses, as radioactive materials to be decommissioned will have had less time to naturally decay. CELA **recommends** that this fact be mentioned in section 5.4, including information on whether efforts will be made to counter this risk, such as increased use of robotics or improvements in worker protections.

viii. Appendix A. List of Inspections at CNL Sites in 2019

In Appendix A, Table A-4, Remediation Verification at PHAI is mentioned. CELA **requests** information on the conclusions/findings of this inspection. CELA furthermore **recommends** including info on this in Section 2.3 in an updated version of the ROR.

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<sup>36</sup> 2019 ROR, p. 16.

<sup>37</sup> 2019 ROR, p. 16.

CELA also **recommends** including information in the 2019 ROR outlining how the CNSC chooses which inspections should be carried out, including what weight is given to following up on previously identified issues.

ix. Appendix B. REGDOC Implementation

In appendix B, tables B-1 to B-5, make it clear that Gap Analyses are still outstanding for each of the sites covered by the 2019 ROR for REGDOC-2.9.1 Environmental Principles, Assessments and Protection Measures, version 1.1. This version was released back in 2017, and has since been superseded by a newer version 1.2 issued in October 2020. CELA **asks** if version 1.1 has yet to be implemented, despite the issuance of version 1.2? If this is the case, then CELA **requests** information on why this is the case across all CNL facilities, and **recommends** speeding up the implementation of version 1.2 to ensure that it is implemented before yet another version is released.

x. Appendix D. 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”.<sup>38</sup> With an eye to future impacts due to climate change, CELA **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.

xi. Appendix F. Doses to Nuclear Energy Workers and Nonnuclear Energy Workers at CNL Sites

Figure F-2 shows a continual increase in both average and maximum effective doses from 2016 to 2019, yet the CNSC states that “The dose fluctuations from year to year are attributed to the scope and duration of the radiological work conducted, along with the dose rates associated with the work. No adverse trends were identified in 2019” (emphasis added).<sup>39</sup> It, however, does appear that an adverse trend (increase in doses) was observed from 2016 to 2019. CELA **recommends** including specific information on the cause of the continual increase over the past 4 years, and what efforts have been made to avoid a continuation of this trend. While the numbers are low, the trend is upwards, and such increases should be avoided when possible.

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<sup>38</sup> 2019 ROR, p. 41.

<sup>39</sup> 2019 ROR, p. 48.

## Recommendations

16. Information should be included on key changes to the Licence Condition Handbooks, as well as what has prompted these changes.
17. 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 “insignificant issues”.
18. The changes ordered after the BE rating for Security at Whiteshell should be explained.
19. The Commission should require CNL to review and implement the decommissioning REGDOC-2.11.2, immediately following its final publication.
20. Regarding the BE rating for Security at Whiteshell, the CNSC should provide an update on whether CNL has completed all actions in the corrective action plan. The information could be provided in a sufficiently generalized form, to avoid any security issues.
21. A clearer explanation should be given of the causes of the exceedances of action levels for arsenic, uranium, molybdenum and radium-226 in effluent at PGP.
22. A better explanation should be given of how the 4 skin contamination events at WL were allowed to happen.
23. All the accidents/incidents that led to RLTIs should be described – not just one of them.
24. The corrective and remedial actions taken after the CRL power outage should be mentioned.
25. It should be mentioned that the accelerated decommissioning may lead to increases in worker radiation doses, as radioactive materials will have had less time to naturally decay. Any efforts intended to counter this risk should also be mentioned.
26. Information on the findings of the Remediation Verification at PHAI should be provided.
27. It should be outlined how the CNSC chooses which inspections should be carried out, including what weight is given to following up on previously identified issues.
28. More information should be provided on why a number of Gap Analyses are still outstanding for the implementation of REGDOC-2.9.1, version 1.1, which was released in 2017.

29. Information should be provided on the amount of excess water during heavy rain fall and the capacity of the new Waste Water Treatment Plant and the old Water Treatment Building at PHP.
30. Specific information should be provided on the cause of the continual increase in worker doses over the past 4 years seen in Figure F-2, and what has been done to reverse this trend.

## **I. Specific Comments Related to Changes from the 2018 ROR**

### **i. Section 2. CANADIAN NUCLEAR LABORATORIES**

This section provides specific information for each of CNL’s sites. Unfortunately, a significant portion of the information found in the 2018 ROR, is no longer included in the 2019 ROR. While the 2018 ROR included a subsection for each CNL site describing ‘major activities’ at the sites, these subsections have been removed in the 2019 ROR. As such, while the description of CNL and its current activities in Section 2 of the 2018 ROR spanned 13 pages, this section has been reduced to a mere 3 pages in the 2019 ROR.

CELA strongly **recommends** re-introducing these separate subsections in Section 2 as they provided much more information on activities at the various CNL sites than the 2019 ROR now does, and also made it easy to find information on current activities in the ROR. Given what is arguably the main purpose of an ROR – i.e. giving an annual update to the public and the Commission – these subsections are rather essential to the purpose of even producing RORs. Their removal is thus quite disappointing, yet provides a key example of what is wrong with the direction the CNSC has taken with the 2019 ROR.

### **ii. Section 3. THE CNSC’S REGULATORY OVERSIGHT OF CNL**

CELA regrettably notes that, compared to the 2018 ROR, Section 3 no longer contains separate subsections for each of the facilities covered by the ROR. Instead, the information is provided in one more generalized section, which covers oversight of all CNL’s facilities. Furthermore, Section 3 now spans a mere 3.5 pages, compared to 7.5 pages in the 2018 ROR.

Given the number of different facilities, and the differences between the activities taking place at each of these facilities, it seems near impossible to provide a meaningful description of the CNSC’s oversight, without including specific sections with comments describing the CNSC’s oversight activities at each facility. Yet, this is the approach taken in the 2019 ROR. CELA

**recommends** reverting to the approach found in the 2018 ROR, which may not have been overly detailed either, but at least provided a greater level of detail for each CNL site.

iii. Section 4. THE CNSC'S ASSESSMENT OF SAFETY AT CNL SITES

In Section 4, subsection '4.1.1 Independent Environmental Monitoring Program (IEMP)' has been removed and replaced by a far shorter substitute, now located in subsection 5.5. CELA **recommends** reverting to the previous approach in the 2018 ROR, which provided a bit more information regarding the IEMP.

iv. Section 5. EVENTS AND OTHER MATTERS OF REGULATORY INTEREST

Section 5 has been reduced from over 13.5 pages to a mere 4 pages, despite now including subsection 5.5, which was moved from subsection 4.1.1. CELA **recommends** reverting to the previous, more detailed version found in the 2018 ROR.

v. Appendix A

CELA notes that important information in the tables in Appendix A has been removed for no apparent reason. The tables in Appendix A in the 2018 ROR contained two extra columns with key information regarding the outcome of the inspections, namely 'Number of Enforcement Actions Issued', and 'Safety Significance of Enforcement Actions'. This information is no longer included, and the remaining information in the 2019 ROR is now limited to stating the date of the inspection, the general type of inspection carried out and the SCA or SCAs covered by the inspection.

The tables in Appendix A have thus become so generic that no information is provided on the results of the inspection and instead the tables resemble checklists, which merely keep track of the inspections that have been carried out in 2019, while ignoring the outcome of these inspections entirely. In essence, the tables are now so close to pointless in terms of informing the public about inspection activities, that they might as well be removed entirely. CELA **recommends** reintroducing the columns with information on 'Number of Enforcement Actions Issued' and 'Safety Significance of Enforcement Actions' in the tables in Appendix A. Without it, these tables offer no value to members of the public looking for insight into the results of the inspections.

CELA furthermore 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 furthermore, 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.

Indeed, in our submission for last year's nuclear substance ROR meeting, CELA 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."<sup>40</sup> 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, 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 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.

vi. Appendix C in the 2018 ROR

This appendix found in the 2018 ROR contained definitions of the SCA rating methodology. The appendix has been removed in the 2019 ROR. It is thus no longer clear from the 2019 ROR that there are higher and lower rating levels than SA and BE. As such, when reading the 2019 ROR one is left with the impression that all of CNL's activities are performing optimally with little need for improvement. This is, however, not the case and should be made clear in the 2019 ROR.

In this regard it is worth remembering that the SCA rating methodology was changed several years ago. Where it previously consisted of the more logical letter grades A, B, C, D, E, the current approach creates a risk of confusion, with SA, or Satisfactory, being a lesser grade which allows for low risk, minor deviations, so long as appropriate improvements are planned. With the removal of the definitions of the SCA rating levels, the muddying of the waters has only been made worse. CELA therefore **recommends** including the SCA rating levels explanation in the 2019 ROR, or at least providing a link to the part of the CNSC website where this information can be found.<sup>41</sup>

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<sup>40</sup> CNSC, Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held on November 6–7, 2019, para 101

<sup>41</sup> See <https://nuclearsafety.gc.ca/eng/resources/publications/reports/powerindustry/ratings-definitions.cfm>.

CELA furthermore **requests** information on the lack of FS ratings in the ROR for any of the past several years. Are none of CNL's operations able to live up to this higher standard? If they cannot, then this should be explained and discussed in the ROR. If this is not already the case, CELA furthermore **recommends** that CNL be required to work towards improving its performance with the aim of changing as many ratings as possible from SA to FS.

### **Recommendations**

31. The separate subsections found in Section 2 of the 2018 ROR should be reintroduced as they provided far more relevant information on activities at the various CNL sites than the 2019 ROR.
32. Section 3 should contain separate subsections for each of the facilities covered by the ROR.
33. In Section 4, subsection '4.1.1 Independent Environmental Monitoring Program (IEMP)' should be reintroduced.
34. Section 5 should be reverted to the previous, more detailed version found in the 2018 ROR.
35. In the tables found in Appendix A, the columns with information on 'Number of Enforcement Actions Issued' and 'Safety Significance of Enforcement Actions' should be included again.
36. Information on the findings of inspections should be provided, including what prompted the inspections, and what impact prior announcement of the inspections had on the findings of the inspections. Alternatively, the inspection reports should be made available to the public online.
37. The lack of FS ratings should be explained. If this rating level cannot be reached, then this should be explained and discussed in the ROR.

### **III. CONCLUSIONS**

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

Sincerely,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION



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Kerrie Blaise, Legal Counsel



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Morten Siersbaek, Legal Counsel