

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

September 15, 2022

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I. INTRODUCTION

This submission is filed in response to the Canadian Nuclear Safety Commission’s (“CNSC”) Notice of Participation at a Commission Meeting and Participant Funding dated April 25, 2022 in respect of the *Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2021* (herein “ROR”).¹ A virtual meeting with respect to this matter is scheduled for November 2-3, 2022. Our recommendations to the Commission to assist in their review are summarized in **Appendix A**.

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 engaged in detailed research and advocacy related to public safety and environmental protection by seeking improvements to nuclear emergency preparedness. We have also appeared before the CNSC on a number of licensing matters, as well as the federal environmental assessment proceedings for multiple nuclear power generating sites (“NPGS”) and proposed projects. CELA also has an extensive library of materials related to Canada’s nuclear sector which is publicly available on our website.²

¹ CNSC, Notice of Participation at a Commission Meeting and Participant Funding, online: <https://www.nuclearsafety.gc.ca/eng/the-commission/pdf/NoticeMeeting-ROR-NPGS-2021-e.pdf>

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

II. FINDINGS

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

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

A. Reforming the Scope and Process for Regulatory Oversight Reports

CELA has reviewed the ROR in detail and finds it necessary to reiterate our ongoing concerns with the ROR process, its utility and use. We are aware that CNSC Staff are in the process of reviewing the Regulatory Oversight Review process, and sought public feedback via the discussion paper published in April 2021.⁴ During the public consultation period from April to June 2021, CELA wrote to the CNSC requesting that our years of ROR interventions, and procedural comments therein, be accounted for in the review process.

According to a presentation on this topic during a CNSC Meeting on January 27, 2022, a number of changes have been implemented, such as:

- Plain Language Executive Summaries;
- Greater use of hyperlinks for readily available online content;
- Data to include error bars on graphs, explanation on sampling and analytical techniques, and sources of equations;
- Clarification of rating definitions and removal of 'Fully Satisfactory'; and
- Acknowledgement of Indigenous Nations and communities.⁵

CELA is disappointed that RORs are not undergoing a more robust overhaul following this review process. As CELA recently summarized to the Commission during a 2022 licensing hearing before the CNSC:

³ See for instance, CELA's Comments on the CNSC's Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2017; Submission by CELA to the CNSC Regarding the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2018; Submission by CELA to the CNSC Regarding the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2019; Submission by CELA to the CNSC Regarding the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2020.

⁴ CNSC, "The Canadian Nuclear Safety Commission: Oversight Report Review" Discussion Paper 21-01 (April 2021), online: https://www.nuclearsafety.gc.ca/eng/pdfs/Discussion-Papers/21-01/Discussion_Paper_DIS-21-01_The_Canadian_Nuclear_Safety_Commission_Regulatory_Oversight_Report_Review.pdf

⁵ CNSC, "Update on the CNSC Staff Review of the Regulatory Oversight Report Process", Staff Presentation to the Commission, CMD-22-M5 (January 27, 2022), online: <https://www.nuclearsafety.gc.ca/eng/the-commission/meetings/cmd/pdf/CMD22/CMD22-M5.pdf>, p. 16.

It has been CELA's experience that the intent of RORs is not to change or amend licences or licence conditions, but rather to receive updates on licensee activity. Further, the public is excluded from oral interventions which provide an opportunity for interrogations and dialogue with the proponent and Commission members. As such, the ROR is ill suited to resolving the concerns being made by the intervenors in the context of this licence renewal.⁶

Therefore, CELA continues to provide the following recommendations to ensure that the ROR is being effectively utilized.

First, CELA submits that intervenors who provide comments on an ROR should have an opportunity to present orally before the Commission. This remains an outstanding recommendation and one which requires remedying to advance the public value of this process. Currently, only Indigenous intervenors may present before the Commission, thus preventing many public interest intervenors the opportunity to engage in dialogue with Commissioners and CNSC Staff. This reduction in participatory rights enables the high-level nature of RORs and does not facilitate a public awareness of the interests and considerations weighed by CNSC Staff in reaching the conclusions set out in the report. Should the CNSC retain the existing ROR procedure and not provide oral intervention opportunities to intervenors, CELA again **recommends** the CNSC reframe its ROR as a "Discussion Paper," whereby the Paper provides information but also poses questions and actively seeks public feedback.⁷ This reframing would more closely align with the public opportunity for comment this process provides.

Second, CELA again submits that it is an outstanding issue that there is no pre-ROR meeting opportunity to define the issues which guide the content of the ROR. To clarify the scope of RORs, CELA **recommends** the CNSC conduct a pre-meeting conference or discussion, which seeks input on issues to be discussed. Preliminary meetings are a widely used practice in anticipation of tribunal proceedings.⁸ Not only would the CNSC, as a quasi-judicial tribunal, benefit from a pre-meeting conference, whereby the scope of the proceeding could be narrowed. Or expanded, upon input from the regulator, proponent, and intervenors, it would provide demonstrably clearer guidance to intervening parties regarding the acceptability of their submissions.

Issue identification is critically important, not only to ensure the efficient and best use of intervening parties' time, but to ensure matters of critical importance are not deemed out of scope and thus dismissed. While issue identification can require a significant amount of time, a clearer sense of the issues and providing the public an opportunity to comment advances procedural fairness. Therefore, as there has not been a public scoping of issues, whereby the CNSC staff,

⁶ Canadian Environmental Law Association & Coalition for Responsible Energy Development in New Brunswick, "Joint Submission by the Coalition for Responsible Energy Development and the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Renewal of the Point Lepreau Nuclear Generating Station Power Reactor Operating Licence." Hearing Reference: 2022-H-02 (March 28, 2022), online: <https://cela.ca/wp-content/uploads/2022/03/Submission-Point-Lepreau-Nuclear-Generating-Station.pdf>, p. 17.

⁷ See for instance, Canada, "Environmental and Regulatory Reviews Discussion Paper" (June 2017), online: <https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/share-your-views/proposed-approach/discussion-paper.html>

⁸ Jerry DeMarco and Paul Muldoon, "Environmental Boards and Tribunals – A Practical Guide, 2nd Ed" (LexisNexis: 2016), p. 78.

licensees and intervenors can weigh in on the issues which should frame the report, we submit CELA's comments provided herein are not out of scope.

Third, as stated in the introduction of the ROR, “there are no actions requested of the Commission. This CMD [ROR] is for information only.”⁹ CELA continues to object to this framing and **requests** that rather than serving an informational purpose, the aim of the ROR should be to identify gaps and propose action items (even if voluntary or for guidance) which improve licensee compliance within all Safety and Control Areas (“SCAs”). This is particularly necessary given the CNSC's trend to issuing longer, ten-year licences. Without public hearing or intervention opportunities, there is a significant gap between the number of frequency of opportunities for the CNSC to engage with the public as compared to licensees, who enjoy a higher-level interaction.

Fourth, CELA submits that, as federal government agency, the CNSC has a responsibility to ensure that the public has access to the information contained in the ROR in both official languages for the entirety of the public consultation period. Section 3.8 of the 2021 ROR pertaining to Gentilly-2 was only made available to the public in French. CELA requested an English version of this section from CNSC staff and a English version was made available on the same day that the request was made. CELA was also informed that the translation would also be made available on the CNSC website the day after we received our copy. Although the translation request turnaround time has substantially improved compared to previous years,¹⁰ CELA **submits** that this is still an accessibility issue and does not allow the public to meaningfully engage with the content of the ROR or engage in substantial review. Fully English or French translations should not have to be requested, rather they should both be available at the same time. CELA **recommends** that both French and English versions be made available at least 60-days in advance of the due date for an intervention.

Recommendations

1. CELA remains of the view that ROR meetings are not a replacement for relicensing hearings and the CNSC must remedy the discrepancy in participation rights among public intervenors and licensees by providing oral presentation opportunities.
2. The ROR would be more effective if the CNSC canvassed a list of issues and topics to inform the scope of the ROR. Given the trend to longer, ten-year licences, soliciting public comment on the scope of issues addressed in ROR would provide a starting point for public engagement.
3. The aim of the ROR should be to identify gaps and propose action items which improve licensee compliance within all Safety and Control Areas.
4. Both French and English versions of the ROR should be made available at least 60-days in advance of the due date for an intervention.

⁹ 2021 ROR, p 3.

¹⁰ See for instance, Canadian Environmental Law Association, “Submission by the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Nuclear Generating Sites: 2020” (1 November 2021).

B. Release of the Provincial Emergency Planning Technical Study

CELA has an extensive history of participating in legal proceedings involving the interpretation, implementation, and enforcement of statutes relating to environmental protection and often intervenes in its own right in proceedings involving issues of public importance and environmental significance. This specifically includes lengthy and detailed review of the sufficiency of emergency preparedness in the context of nuclear power plants.¹¹ This remains a focus of CELA in this submission to the Commission.

After years of repeated requests that the Provincial Nuclear Emergency Response Plan (“PNERP”) Technical Study from Ontario’s Office of the Fire Marshall and Emergency Management (“OFMEM”) (the “Study”) be made publicly available, the Study was made public upon request on June 30, 2021. At the ROR meeting on December 15, 2021, it was mentioned that there are two options for members of the public to obtain a copy of the technical study: “...number one, through the OFMEM website, and number two, upon request at the -- of the CNSC.”¹² Because the CNSC has been given permission by the OFMEM to share the Technical Study with anyone who requests it,¹³ the CNSC should make this report publicly available on the CNSC website. This in turn would allow RORs to provide direct links to the Technical Study when it is referenced.

We are dismayed that the PNERP Technical Study has not been made more easily accessible to the public despite its significant value to public health and safety. As CELA has previously stated, despite the PNERP figuring prominently in the 2019 Pickering relicensing hearings and being of high interest to numerous intervenors, its delay in being released and a lack of public hearing to accompany its review, has lessened its impact and value for increasing public awareness about nuclear preparedness. The Technical Study has been an important matter of public discussion since it was first commissioned in 2018 and remains highly relevant to this ROR. As such, CELA **recommends** that the Study be made available and easily accessible to the public on the CNSC’s website and should not require a request to the OFMEM.

CELA is very dismayed that the 2021 ROR highly glosses over the results of the Study, and fails to discuss its implications for emergency planning for all NPGS, or how it will inform the next PNERP Master Plan update. The extent of the discussion of the results from the PNERP Technical Study within the ROR are as follows:

During the 2017 PNERP review, an independent Advisory Group recommended that a technical study should be conducted. The Ontario Ministry of the Solicitor General (SOLGEN) hired ENERCON, a consulting firm located in the United States to perform this technical study.

The study has been completed and the Technical Study Report on the PNERP is available by contacting the Emergency Management Ontario (EMO) website (<https://www.ontario.ca/page/nuclear-incident>). The OFMEM participates in the

¹¹ <https://cela.ca/casework-point-lepreau-nuclear-plant-emergency-preparedness/>; <https://cela.ca/casework-pickering-nuclear-generating-station-life-extension/> and <https://cela.ca/casework-darlington-nuclear-generating-station-refurbishment/>

¹² CNSC, Transcript of December 15, 2021 Commission Meeting, p. 135-136.

¹³ CNSC, Transcript of December 15, 2021 Commission Meeting, p. 135.

Federal Radioactive Waste Working Group (RWWG), the Potassium Iodide (KI) Working Group and as an associate member on the Technical Committee on the rewrite of the CSA N1600, *General requirements for nuclear emergency management programs*.¹⁴

This high-level overview of the Technical Study diminishes and undermines its importance in emergency planning for nuclear facilities in Ontario. As the findings of the Technical Study have implications for the adequacy of the planning basis for severe accidents at Ontario's NPGS, there is an urgent and pressing need for the Commission to review it in full and provide a public account of its findings.

This matter is critical to the licensing basis for all of Ontario's NPGS and tantamount to ensuring the protection of the millions of people's living in and around Ontario nuclear power plants. CELA **recommends** that this be addressed at the upcoming ROR meeting. Further, CELA **recommends** that the ROR be updated to include a full review of the PNERP Technical Study and its implications for Ontario's NPGS by asking questions such as:

- How have NPGS licencees reviewed their off-site emergency response plans in keeping with the recommendations made in the Study, particularly at the Bruce and Fermi 2 NGSs, which were both recommended to update their emergency planning zone distances?¹⁵
- How have Designated Municipalities (municipalities in close proximity to, or with nuclear establishments within their boundaries)¹⁶ reviewed their Emergency Response Plans in response to the Study?
- How will the CNSC verify Ontario-based NPGS licensees have revised their training programs, emergency response staff and off-site emergency response plans?

The Study includes a discussion of drinking water impacts in the event of a nuclear accident. In the past, CELA has sought clarification from the Commission regarding plans and arrangements made to "protect drinking water supplies" as required in the Provincial Nuclear Emergency Response Master Plan.¹⁷ All of Ontario's nuclear reactors are located on the Great Lakes—which supply drinking water to 40 million Canadians and Americans. Therefore, it is necessary to not only "protect drinking water supplies" but require contingency planning in the event of an accident. CELA **recommends** that the ROR be updated to include a review of how the Study's findings will impact the protection of drinking water supplies near NPGS, particularly as it relates to emergency planning, and that this be discussed at the upcoming Commission Meeting.

¹⁴ 2021 ROR, p. 35.

¹⁵ ENERCON, "2019 Technical Study Report of the Provincial Nuclear Emergency Response Plan (PNERP)" (March 7, 2019), p. 5.

¹⁶ A "Designated Municipality" or a "Designated Host Municipality" is a municipality in close proximity to, or with nuclear establishments within their boundaries. See PNERP Master Plan 2017, s. 1.7.2 (b)(ii). See also "Annex A" for list of Designated Municipalities and Designated Host Municipalities.

¹⁷ See for instance, Canadian Environmental Law Association, "Submission by the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Canadian Nuclear Generating Stations: 2018" (9 October 2019).

The PNERP requires a review at least every five years.¹⁸ The review requires revisions as necessary to ensure that plans and procedures are still suitable, adequate and effective.¹⁹ According to the Ministry of the Solicitor General, “in order to meet the PNERP’s 5-year review cycle, the end of 2022 is being targeted for Cabinet approval of the updated PNERP Master Plan.”²⁰ In the event that the updated PNERP Master Plan is approved before the November 2022, CELA **recommends** that the updated PNERP Master Plan be addressed at the upcoming Commission Meeting, and should be addressed in the 2022 ROR. The Commission should also assess whether the updated PNERP Master Plan adequately reflects the results of the PNERP Technical Study. CELA also **asks** that the Commission amplify any call for public comments on the five-year review and provide insights as to discussions thus far.

Recommendations

5. The PNERP Technical Study should be made available to the public without the requirement for a request to the OFMEM.
6. The ROR should be updated to include a full review of the PNERP Technical Study and its implications for Ontario’s NPGS. This should be addressed at the upcoming Commission Meeting.
7. The ROR should be updated to include a review of how the PNERP Technical Study will impact the protection of drinking water supplies near NPGS, particularly as it relates to emergency planning. This should also be discussed at the upcoming Commission Meeting.
8. The updated PNERP Master Plan should be addressed at the upcoming Commission Meeting, and should be addressed in the 2022 ROR. The Commission should also assess whether the updated PNERP Master Plan adequately reflects the results of the PNERP Technical Study.
9. The CNSC should amplify any call for public comments on the five-year review of the PNERP Master Plan and provide insights as to discussions thus far.

C. Other Emergency Plans

The 2020 ROR noted that the Province of Ontario released and approved the Environmental Radiation and Assurance Monitoring (“ERAMG”) Plan in September 2020.²¹ CELA is dismayed that there is no mention of the ERAMG Plan in the 2021 ROR, as CELA had previously recommended that RORs should include a more detailed discussion surrounding the ERAMG Plan.²² CELA continues to **recommend** that the ROR include a more detailed discussion of how

¹⁸ PNERP Master Plan 2017, s. 1.3.3.

¹⁹ PNERP Master Plan 2017, s. 3.2.6 (b).

²⁰ Ministry of the Solicitor General of Ontario, “Update on Nuclear Emergency Management in Ontario, Presented to Durham Health Committee”, Presentation slides (January 21, 2022), online: <https://www.durham.ca/en/health-and-wellness/resources/Documents/EnvironmentandYourHealth/DNHC/Presentations/January2022/2022-Jan-21-EMO-EXCEPT.pdf>, p. 9

²¹ 2020 ROR, p. 51.

²² See for instance, Canadian Environmental Law Association, “Submission by the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Nuclear Generating Sites: 2020” (1 November 2021).

the ERAMG Plan will impact environmental monitoring at NPGS and support protective action decision making after a nuclear or radiological emergency.

The 2020 ROR discussed the Nuclear Incident Group (NIG), which reports to the Nuclear Emergency Management Coordinating Committee (NEMCC), noting that that “the purpose of the committee is to coordinate preparedness work to support the activities of the NIG during any response to a nuclear emergency.”²³ With the NIG being a relatively new group, having updates on the development of plans and procedures to reflect current operations would be of great value to RORs. CELA is disappointed to see that there is no mention of the NIG in the 2021 ROR. CELA **recommends** that the ROR be updated to include a detailed discussion of the existing processes and updates to plans/procedures impacting the preparedness work of the NIG and the NEMCC.

Similar to the 2020 ROR, the 2021 ROR provides that the “PLNGS Technical Planning Basis was finalized in April 2021, which allowed the review and issuance of the Point Lepreau Nuclear Off-site Emergency Plan in June of 2021.”²⁴ Beyond stating that “updates to the FNEPNB Annex were provided to Health Canada based on the updated PLNGS Technical Planning Basis,”²⁵ there are no further discussion or details provided in the ROR regarding the PLNGS Technical Planning Basis. Considering that the Commission approved a 10-year renewal of the Point Lepreau licence, effective July 1, 2022, there should be an in-depth discussion of the PLNGS Technical Planning Basis. Therefore, CELA continues to **recommend** that the ROR be updated to include a detailed discussion of both plans and their impact on emergency planning at Point Lepreau, and that this also be addressed to the upcoming Committee Meeting.

Recommendations

10. The ROR should include a detailed discussion of how the ERAMG Plan will impact environmental monitoring at NPGS and support protective action decision making after a nuclear or radiological emergency.
11. The ROR should be updated to include a detailed discussion of the existing processes and updates to plans/procedures impacting the preparedness work of the NIG and the NEMCC.
12. The ROR should be updated to include a detailed discussion of the PLNGS Technical Planning Basis and the Point Lepreau Nuclear Off-site Emergency Plan, and their impact on emergency planning at Point Lepreau. This should also be addressed at the upcoming Committee Meeting.

²³ 2020 ROR, p. 52.

²⁴ 2021 ROR, p. 36.

²⁵ Ibid.

D. Radionuclides and the National Pollutant Release Inventory (NPRI)

The need for consistent, comprehensive data on the releases of radionuclides from CNSC regulated facilities has been a common recommendation in previous CELA submissions.²⁶ Unfortunately, despite these submissions, radionuclides remain exempt from Canada’s National Pollutant Release Inventory (“NPRI”) and are not reported. The NPRI is 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 Canada, and is used to promote actions aimed at reducing pollutant releases.

Sections 46-53 of the *Canadian Environmental Protection Act, 1999* set out the functions of the NPRI. 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,²⁷ CELA has continued to advocate for inclusion of the radionuclides on the NPRI substance list.

Once again, CELA submits that given the threat radionuclides pose to human health and the environment,²⁸ 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.

Similar to previous RORs, this year’s ROR does not provide any review of this matter nor an update. Like the 2020 ROR, the 2021 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 previous comments that the CNSC Open Government Portal is an improper substitute for the more detailed and publicly accessible data that would be provided on the NPRI. The data is still not provided in accessible formats. **Figure 1** below was provided in CELA’s submission for last year’s ROR. The data available on the CNSC Open Government Portal is still published in this style, which is not accessible. This figure provides an example of Pickering NGS’s NPRI profile vs. the data as displayed by the Open Government Portal.

²⁶ See for instance, Canadian Environmental Law Association, “Submission by the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Canadian Nuclear Generating Stations: 2018” (9 October 2019); Canadian Environmental Law Association, “Submission by the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Nuclear Power Generating Sites in Canada: 2019” (16 November 2020); Canadian Environmental Law Association, “Submission by the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Regulatory Oversight Report for Nuclear Generating Sites: 2020” (1 November 2021).

²⁷ A proposal to add radionuclides to the NPRI was made in 2018, and the request was rejected: <https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/public-consultations/proposal-radionuclides-national-pollutant-release-inventory.html>

²⁸ See for instance, John Jackson, Prepared for Canadian Environmental Law Association and Toxics-Free Great Lakes, “Renomination of Radionuclides as Chemicals of Mutual Concern Under the Great Lakes Water Quality Agreement” (16 May 2022), online: <https://cela.ca/renomination-of-radionuclides-as-chemicals-of-mutual-concern/>

Figure 1. Comparison of NPRI data versus CNSC Open Government Portal for Pickering NGS

List of Substances (excluding CAC)												
Substance	CAS Number	On-Site Releases				Disposal ⁽¹⁾		Off-Site Recycling	Units	Substance Information		
		Air	Water	Land	Total	On-Site	Off-Site ⁽²⁾					
Hydrazine (and its salts)	302-01-2	5.5	262	-	267	-	370	-	kg	Substance Information		
Sulphuric acid	7664-93-9	-	-	-	-	-	0.125	-	tonnes			

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2020	3161	Ontario Power Generation Inc.	Pickering Nuclear - A & B	Pickering	Pickering	Toronto	Toronto	ON	43.8104	-79.0676	Tritium (HTO)	Tritium (Eau tritiée)	Bq	6.50E+14	4.30E+14
2020	3161	Ontario Power Generation Inc.	Pickering Nuclear - A & B	Pickering	Pickering	Toronto	Toronto	ON	43.8104	-79.0676	Carbon-14	Carbone-14	Bq	2.30E+12	1.80E+09
2020	3161	Ontario Power Generation Inc.	Pickering Nuclear - A & B	Pickering	Pickering	Toronto	Toronto	ON	43.8104	-79.0676	Total noble gases	Total des gaz nobles	Bq-MeV	4.50E+13	NRM NRS
2020	3161	Ontario Power Generation Inc.	Pickering Nuclear - A & B	Pickering	Pickering	Toronto	Toronto	ON	43.8104	-79.0676	Iodine-131	Iode-131	Bq	1.00E+07	NRM NRS

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Further, we again request that for nuclear facilities which also report to the NPRI, there be a clear message directing visitors to review the Open Government portal for radionuclide data. Currently, there is no such indication that the data is available when reviewing emissions data on the NPRI.

As CELA has been active in advocating for radionuclide data to be accessible on the NPRI and we continue to participate in a working group for this purpose, we will continue to closely monitor how this data is released and advocate for its public accessibility.

Recommendations

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

E. Asbestos Phase Out

In previous years, CELA has recommended that the ROR should review 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 pursuant to the *Prohibition of Asbestos and Products Containing Asbestos Regulations*. At last year's ROR meeting, one CNSC staff member noted that "it seems as though there is a fairly superficial amount of attention being placed on asbestos phase-out, or perhaps it's just not included in the depth that I might have expected in the ROR."³¹ CELA agrees with the sentiment that the discussion of asbestos phase-out lacks depth, and we continue to find that the treatment and consideration of this topic to be inadequate.

²⁹ <https://pollution-waste.canada.ca/national-release-inventory/2021/3161>

³⁰ <https://open.canada.ca/data/en/dataset/6ed50cd9-0d8c-471b-a5f6-26088298870e>

³¹ CNSC, Transcript of December 15, 2021 Commission Meeting, p. 122.

This year's ROR provides a general conclusion related to the phase-out of asbestos:

In 2021, no NPP licensee used asbestos or asbestos containing products to service equipment; therefore, no licensee was required to submit an annual report to ECCC. Licensees continue to identify technically and economically feasible alternatives to asbestos and asbestos-containing products, and where they are unable to do so, will continue to use these products in accordance with the Regulations. There were no non-compliances with the Regulations in 2021.

Beginning January 1, 2023, NPP licensees will need to apply to ECCC for a permit to use asbestos and asbestos-containing products. As part of this permitting process, NPP licensees must demonstrate that there are no technically or economically feasible alternatives.³²

As the ROR meeting does not provide a forum for intervenors to respond to the Commission's and CNSC Staff's comments, we provide the following response at this time.

First, as CELA had noted last year, both OPG and NB Power commented that they had asbestos management plans in place and were on track to phase out asbestos by December 31st, 2022. This year's ROR provides no detailed of how OPG or NB Power are meeting that December 31, 2022 deadline, i.e., what measures have been taken to prevent future servicing of equipment without using asbestos or asbestos-containing products. The 2020 ROR noted that both PNGS and BNGS A and BNGS B had used products containing asbestos to service several different pieces of equipment.³³ This year's ROR makes no mention of how these products would avoided in servicing as of January 1, 2023. CELA continues to **recommend** that the ROR include a review of the specific measures being taken by nuclear facilities to phase out asbestos use in by this date.

Second, Environment and Climate Change Canada commented at the meeting on December 9, 2020 that "ultimately the removal of asbestos substances will be required, except in the cases where there is no technically or economically available alternatives for asbestos-free alternatives."³⁴ At last year's meeting, the Senior Program Officer with the Pickering Regulatory Program Division noted that the Regulation "...does not require a complete phase-out of all products containing asbestos, but what it does is require that nuclear facilities determine whether there are technically or economically feasible alternatives for those asbestos-containing products that are required for the facility."³⁵ Even if the Regulation does not presently require a complete phase-out, CELA submits that nuclear facilities should be looking into methods and options for removing asbestos, and striving for a complete phase-out of asbestos products should be a priority for all operations. CELA again **recommends** that the ROR include a discussion of what actions NPGS are taking to pursue technically and economically feasible asbestos-free alternatives.

³² 2021 ROR, p. 41-42.

³³ 2020 ROR, p. 64-65.

³⁴ CNSC, Transcript of December 9, 2020 Commission Meeting, p. 83.

³⁵ CNSC, Transcript of December 15, 2021 Commission Meeting, p. 123.

Recommendation:

14. As a standing item, the ROR should review 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 pursuant to the *Prohibition of Asbestos and Products Containing Asbestos Regulations*.

F. ‘New and Emerging Challenges’ and Climate Change

In reviewing the compliance verification program for nuclear power plants, the ROR notes that “Additional compliance verification activities for NPPs and WMFs may also be added as necessary during the year in response to new or emerging licensee challenges.”³⁶ As the ROR does not elaborate on what these ‘new or emerging challenges’ may be, CELA continues to **recommend** that the Commission should direct Staff to expressly consider climate change impacts and vulnerabilities within the scope of the ROR.

Nuclear power is particularly vulnerable to climate change effects, including thermal disruptions (e.g. heatwaves and droughts) and extreme weather events. For example, a recent study showed that extreme weather events have become the leading cause of nuclear power plant outages in North America and South and East Asia.³⁷ The frequency of climate-related nuclear plant outages is almost eight times higher than it was in the 1990s.³⁸

In a recent report by the OCED Nuclear Agency, it is emphasized that:

Climate change will create specific risks and challenges for the electricity system as a whole, including nuclear power plants. The key factors that can influence nuclear power plants are: higher air and water temperatures, seawater rise that can impact the location of nuclear power plants on coastlines; greater variability and more extreme weather events (such as droughts, floods, storms, hurricanes, tornadoes, tsunamis and electric storms).³⁹

As climate impacts become more frequent and pronounced, it will be critical for the CNSC to conduct more comprehensive risk assessments of NPGS that cover the full spectrum of projected extreme weather conditions. Therefore, CELA once again **urges** the CNSC to specifically discuss climate change in the context of licensee oversight because of the major safety and environmental issues it poses to operations. CELA submits that 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. CELA has raised this issue before the Commission on multiple

³⁶ 2021 ROR, p. 10.

³⁷ Ali Ahmad, Increase in frequency of nuclear power outages due to changing climate, (2021) 6 Nature Energy 755.

³⁸ Ali Ahmad, Increase in frequency of nuclear power outages due to changing climate, (2021) 6 Nature Energy 755, p. 756.

³⁹ OECD Nuclear Energy Agency, “Climate Change: Assessment of the Vulnerability of Nuclear Power Plants and Approaches for their Adaptation” (2021), p. 15, online: https://www.oecd-nea.org/jcms/pl_61802/climate-change-assessment-of-the-vulnerability-of-nuclear-power-plants-and-approaches-for-their-adaptation?details=true#:~:text=Climate%20change%20will%20create%20specific,operation%20of%20nuclear%20power%20plants.

occasions, but catastrophic weather events are becoming more frequent and CELA **recommends** that the CNSC expressly consider climate impacts and vulnerabilities within the scope of the ROR.

CELA is dismayed by the discussion surrounding climate change during last year's ROR meeting, as the impacts and risks associated with climate change were greatly diminished. During the meeting, Dr. Alex Viktorov, the Director General of the Directorate of Power Reactor Regulation, stated that: "right now, I don't believe there is an urgent need to modify, change, or introduce any new requirements. Climate change is happening, no doubt, but not that has to require urgent updates."⁴⁰ CELA recently expressed concerns about the threats that climate change poses to nuclear facilities during the Nuclear Licensing Hearing for Point Lepreau Nuclear Power Plant, which took place May 11-12, 2022. In CELA's submissions for the hearing, it was emphasized that "particular consideration should be given to climate impacts and climate resiliency in the CNSC's evaluation of ongoing site suitability"⁴¹ This statement is applicable to not only Point Lepreau, but to all nuclear power generating sites within Canada.

During the 2020 ROR meeting, 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.⁴² As such, CNSC staff concluded that "when we acknowledge CELA's request on annual reporting on it, that makes that somewhat challenging, given the frequencies."⁴³ CELA continues to **recommend** that, at the very least, 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.

Recommendations

15. The Commission should direct Staff to expressly consider climate impacts and vulnerabilities within the scope of the ROR. As climate impacts become more frequent and pronounced, CELA urges the CNSC to discuss climate change in the context of licensee oversight because of the major safety and environmental issues it poses to operations, health and safety.
16. The most recent updates to environmental risk assessments and updates to safety analyses which speak to climate change resiliency should be reviewed and reflected in the ROR.

⁴⁰ CNSC, Transcript of December 15, 2021 Commission Meeting, p.128.

⁴¹ Canadian Environmental Law Association, "Joint Submission by the Coalition for Responsible Energy Development in New Brunswick and the Canadian Environmental Law Association to the Canadian Nuclear Safety Commission Regarding the Renewal of the Point Lepreau Nuclear Generating Station Power Reactor Operating License", Hearing Reference: 2022-H-02 (March 28, 2022), online: <https://cela.ca/wp-content/uploads/2022/03/Submission-Point-Lepreau-Nuclear-Generating-Station.pdf>, p. 31. *See also* Canadian Environmental Law Association, "Blog: Climate Change Concerns Breezed Over on Final Day of Nuclear Licensing Hearing for Point Lepreau Nuclear Power Plant" (May 12, 2022), online: <https://cela.ca/blog-climate-change-concerns-breezed-over-on-final-day-of-nuclear-licensing-hearing-for-point-lepreau-nuclear-power-plant/>

⁴² CNSC, Transcript of December 9, 2020 Commission Meeting, p. 89.

⁴³ CNSC, Transcript of December 9, 2020 Commission Meeting, p. 89.

G. Compliance Efforts During the COVID-19 Pandemic

The 2021 ROR provides that “In 2021, CNSC staff continued to conduct regulatory oversight of NPPs and WMFs, using remote and in-person means, as appropriate, given the pandemic restrictions. CNSC staff concluded that the Nuclear Power Plants (NPPs) and the associated Waste Management Facilities (WMFs) on their respective sites operated safely in 2021.”⁴⁴ The ROR meeting in December 2021 discussed the use of a hybridized remote/on-site inspection approach, but did not provide any insight about prioritizing the on-site inspection model going forward.

The COVID-19 pandemic since 2020, and CELA has repeatedly raised concerns about the continued use of remote inspections. CELA once again **submits** that remote inspections do not provide a complete assessment of all performance-based activities nor do they provide for adequate environmental monitoring and oversight.

The 2021 ROR presented a number of issues related to inspections of nuclear power generating sites. For instance, Performance Testing Exercises were not conducted by CNSC staff in 2021, and planned Force-on-Force exercises were postponed due to the COVID-19 pandemic. Additionally, scheduled Force-on-Force exercises were pushed back 12-24 months in the future to reduce the risk and potential impacts to participants and relevant facilities.⁴⁵ Furthermore, type II planned radiation protection inspections of the Darlington Waste Management Facility and the Pickering Waste Management Facility being deferred to the end 2021/2022 fiscal year.⁴⁶

The rescheduling and delay of inspections is deeply concerning. CELA **submits** that the ongoing COVID-19 pandemic provides the CNSC with the opportunity to implement measures to ensure on-site inspections are able to continue uninterrupted in the midst of public health crises and other unforeseen emergency situations.

As mentioned in CELA’s ROR submission last year, the UK’s nuclear inspector noted that “remote interventions are not a sustainable means of ensuring continued public confidence”, emphasizing the need for a physical regulatory presence even during a national lockdown.⁴⁷ CELA **recommends** that the Commission provide information regarding CNSC’s plan to return to the use of on-site inspections during the upcoming ROR meeting.

Recommendations

17. The Commission should assess challenges of conducting inspections during the COVID-19 pandemic to implement measures to ensure on-site inspections are able to continue uninterrupted in the midst of public health crises and other unforeseen emergency situations.
18. The Commission should provide information regarding CNSC’s plan to return to the use of on-site inspections during the upcoming ROR meeting.

⁴⁴ 2021 ROR, p. 138.

⁴⁵ 2021 ROR, p. 22.

⁴⁶ 2021 ROR, p. 66 & 88.

⁴⁷ Mark Foy, ‘Nuclear and Radiation Safety and Security Challenge Due to the Covid-19 Outbreak: UK Experience’: https://www.iaea.org/sites/default/files/20/09/i-1_foy.pdf

H. Licencing Changes at the Darlington Nuclear Generating Station

In September 2021, a hearing took place for an application from Ontario Power Generation Inc. (“OPG”) for a licence amendment to authorize activities related to the production and possession of Molybdenum-99 (“Mo-99”) at the Darlington Nuclear Generating Station (“DNGS”). CELA submitted comments in relation to the application on August 17, 2021.⁴⁸ The CNSC approved the amendment of the license to authorize OPG to produce Mo-99 in Unit 2 of the Darlington NGS, with the amended license being valid until November 30, 2025.⁴⁹

The 2021 ROR makes no mention of this amendment to the license. The 2021 ROR merely states that “the Commission renewed the PROL for the DNGS, which also governs the TRF, in December 2015, with an expiry of November 30, 2025.”⁵⁰ The application was not mentioned in the 2020 ROR, and now this decision is not mentioned in the 2021 ROR. CELA **recommends** that the ROR functions as a comprehensive and evergreen document to ensure updates are made to the text when available, such as amendments to power reactor operating licenses.

Last year, CELA had **recommended** that an update on this application be provided at the ROR meeting in December 2021. This did not happen. We once again **recommend** that the amendment to the license to produce Mo-99 be discussed at the upcoming ROR meeting. For instance, what is the impact of the Mo-99 IIS on both upstream and downstream waste generation? What is the decommissioning plan for the Mo-99 IIS? Will the Environmental Risk Assessment for Darlington be updated to reflect the addition of the Mo-99 IIS?

Recommendations

19. The ROR should function as comprehensive and evergreen document to ensure updates are made to the text when available, such as when licenses are amended, and what those amendments entail.
20. The ROR should be updated to include a detailed discussion of the changes made to the Darlington power reactor operating license, which authorizes activities related to the production and possession of Mo-99. This should also be discussed at the upcoming Commission Meeting.

I. Decommissioning and Plans to Extend Pickering Nuclear Power Plant Licence

The 2021 ROR notes that the current license for the Pickering Nuclear Generating Station permits for continued commercial operation until December 31, 2024.⁵¹ However, the ROR also provides that “in December 2021 OPG informed CNSC staff in a letter of its intention to pursue Commission

⁴⁸ See CELA’s Submission Re: Application for a Licence Amendment to Authorize Activities Related to the Production and Possession of Molybdenum-99 (“Mo-99”) at the Darlington Nuclear Generating Station (NGS), August 17, 2021, online: <https://cela.ca/wp-content/uploads/2021/09/OPG-Darlington-Mo-99-Licence-Amendment.pdf>.

⁴⁹ CNSC, “CNSC amends Ontario Power Generation’s power reactor operating license for its Darlington Nuclear Generating Station to authorize the production of Molybdenum-99” (November 9, 2021), online: <https://www.canada.ca/en/nuclear-safety-commission/news/2021/11/cnsc-amends-ontario-power-generations-power-reactor-operating-licence-for-its-darlington-nuclear-generating-station-to-authorize-the-production-of-.html>

⁵⁰ 2021 ROR, p. 52.

⁵¹ 2021 ROR, p. 71.

approval for operation of Pickering Units 5-8 until December 31, 2025.”⁵² In light of the plans announced by the Ontario Power Generation (“OPG”) and supported by the Ontario government to operate the Pickering station beyond 2024,⁵³ CELA again **submits** the ROR should respond to this critical development.

CELA made the same submission during last year’s ROR process, but our comments went unaddressed at the ROR meeting. Pickering’s Manager of Regulatory Affairs provided a brief statement on the possible extension of PNGS’s operations during the ROR meeting on December 15, 2021:

So to answer your question, Pickering has recently undertaken review of our periodic safety review outcomes, and we are currently looking at what it would take to operate Pickering through 2024 and a bit beyond. We're well aware with regulatory requirements, including getting Commission authorization should we seek to pursue that or explore that opportunity. Obviously, we have the provincial government's endorsement, and we are currently undergoing work right now to evaluate our options.⁵⁴

We continue to **request** that the Commission respond to these statements by OPG and the province, and outline the scope of the existing licence and what would be required should such an extension be granted. As the Pickering nuclear power plant is already operating beyond its intended design life,⁵⁵ a further extension is unquestionably a matter of significant public importance due to health and safety implications.

Once again, CELA reiterates our concerns that by assuming a shutdown date of 2024, the CNSC is overlooking and exempting OPG from requirements which would otherwise apply. For instance, as a result of the planned shutdown in 2024, the CNSC notes that it was “not practical” for Pickering to implement *CSA N285.7, Periodic Inspection and CANDU Nuclear Power Plant Balance of Plant Systems and Components*.⁵⁶ Since our concerns remain unaddressed during ROR processes, CELA again **requests** that the CNSC confirm whether there are other such CSA standards or updates to RegDocs that have not been applied to the Pickering site for the same reason that it is planning to shutdown in 2024.

In CELA’s ROR submission last year, it was noted that the City of Pickering, in partnership with the Region of Durham and OPG, launched a Financial, Economic, and Social Impact study in February 2021 on the decommissioning of the Pickering Nuclear Generating Station (“PNGS”).⁵⁷ CELA’s **recommendation** that the details of this study and its potential impacts on the decommissioning planning process for the PNGS be addressed at the upcoming ROR meeting was

⁵² 2021 ROR, p. 71.

⁵³ Ontario Newsroom, “Ontario Supports Plan to Safely Extend the Life of the Pickering Nuclear Generating Station” (14 Aug 2020), online: <https://news.ontario.ca/en/release/57995/ontario-supports-plan-to-safely-extend-the-life-of-the-pickering-nuclear-generating-station>.

⁵⁴ CNSC, Transcript of December 15, 2021 Commission Meeting, p.136-137.

⁵⁵ CELA, “Casework – Pickering Nuclear Generating Station Life Extension,” online: <https://cela.ca/casework-pickering-nuclear-generating-station-life-extension/>

⁵⁶ 2021 ROR, p. 25. See also 2020 ROR p. 43.

⁵⁷ <https://www.pickering.ca/Modules/News/index.aspx?feedId=77783f37-8a4f-4806-88ba-4147c38af337,5dc74cc8-c7b5-43f1-904c-ab24fc21ae17,ef5adafb-d620-422b-bd9d-b646d8b38d4c&newsId=73c1793c-9add-4764-9a69-ae7cac44169f>

not fulfilled at the ROR meeting which occurred in December 2021. CELA once again **recommends** that the details of this study be addressed at the upcoming ROR meeting.

CELA further notes that once again, the ROR does not respond to outstanding requests from CELA and other civil society organizations who have requested a federal environmental assessment for the decommissioning of the PNGS.⁵⁸ As commented on by Blaise and Stensil (2022):

Despite the concerted efforts of directly affected communities and civil society, decommissioning is omitted from the federal government’s EA law and considerations of social licence and acceptability remain out of scope within the Commission’s licensing process legal or regulatory oversight. Thus the closure of the Pickering nuclear station serves to highlight a number of unresolved social, economic issues related to the oversight of reactor decommissioning in Canada.⁵⁹

Currently, Canada’s *Impact Assessment Act* does not list the ‘decommissioning of a nuclear power plant’ as a project requiring a federal impact assessment (“IA”). This means that the decommissioning of the PNGS will not be subject to a comprehensive, environmental assessment and the public will lack an opportunity to weigh-in on the project’s purpose and potential methods of decommissioning.

Should an IA not occur for the decommissioning of the PNGS, directly affected communities will also be excluded from a public, decision-making process which statutorily requires consideration of a project’s social, economic and environmental effects. Further, the *Nuclear Safety and Control Act* does not share in the purposes of the *IAA*, which requires decision-making that fosters sustainability, considers effects on environment, health and socio-economic conditions, and alternatives to the undertaking.

Given the lacunae of legislative and regulatory frameworks which applies to major nuclear projects, such as the decommissioning of nuclear power plants, CELA **recommends** this be a required agenda item for discussion at the ROR meeting.

Recommendations

21. The Commission should provide a statement in response to plans from OPG and the province of Ontario to extend the current operations at Pickering. For public clarity and in furtherance of the CNSC’s mandate pursuant to section 9 of the *Nuclear Safety and Control Act*, it would be of much value for the Commission to speak to their role and the licensing process which would be required for this further extension to occur.
22. Given the lacunae of environmental assessment legislation that applies to major nuclear projects, such as the decommissioning of nuclear power plants, and the outstanding requests from Durham Region and other civil society organizations for a federal

⁵⁸ Request for Ruling, 25 June 2018, <https://cela.ca/wp-content/uploads/2019/07/1196-RequestForRuling-DecommissioningAtPickeringNGS.pdf>

⁵⁹ Blaise K. and Stensil S-P, (2022), The Evolution of Decommissioning Planning in L. Black-Branch and D. Fleck (eds.), *Nuclear Non-Proliferation in International Law – Volume , VI – Nuclear Disarmament and Security at Risk – Legal Challenges in a Shifting Nuclear World*, online: <https://cela.ca/wp-content/uploads/2022/09/Blaise-Stensil-Ch9-Decommissioning-Planning.pdf>

environmental assessment for the decommissioning of the Pickering nuclear generating station, CELA requests this topic be a required agenda item for discussion at the ROR meeting.

J. Derived Release Limits and Tritium Emissions to the Environment

In Appendix D of the 2020 ROR, the derived release limits and radiological releases to the environment from nuclear power plants are set out.⁶⁰ The 2020 ROR concluded that “Over this current reporting period (2011 – 2020), there have been no exceedances of licence derived release limits.”⁶¹

It is worth noting that this year’s ROR departs from previous RORs through the removal of “Appendix D: Derived Release Limits and Radiological Releases to the Environment.” The 2021 ROR provides:

The CNSC publishes annual radionuclide loadings to the environment from nuclear facilities on the CNSC Open Government Portal, where the data is available for the facilities covered in this report. In previous years reports, this information was replicated in an Appendix, but is only provided via the above reference in the 2021 report.⁶²

CELA is not in favour of this change as it decreases the availability of accessible information and limits the depth of information available in the ROR. In previous RORs, this Appendix provided readers with an explanation of Derived Release Limits (DRLs), and provided a series of tables for each NPGS, breaking down radionuclide releases to the atmosphere and surface waters. No explanation was provided as to why this Appendix, which provided explanations of scientific measurements, from the ROR. This lack of consistency in terms of the content of the ROR makes it very difficult for the public to follow and understand the purpose of the ROR. CELA **recommends** that this change be explained at the upcoming Commission Meeting and that changes to the scope and format be expressly explained in the text of the ROR.

Without this Appendix, the public is left with no choice but to navigate the cumbersome data that must be downloaded from the CNSC Open Government Portal. CELA **recommends** that the “Derived Release Limits and Radiological Releases to the Environment Appendix” be restored in the ROR, and that the data in the Appendix be presented in a similar manner as pollutants are reported on the NPRI⁶³ (refer to section D of this submission).

Throughout the 2021 ROR, it is noted that there were no exceedances of licence DRLs.⁶⁴ CELA has expressed concerns about the calculation of DRLs through numerous ROR submissions. Last year, CELA referred to 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

⁶⁰ 2020 ROR, p. 205.

⁶¹ 2020 ROR, p. 206.

⁶² 2021 ROR, p. 34.

⁶³ See section D of this submission for further discussion of the NPRI (National Pollutant Release Inventory).

⁶⁴ 2021 ROR, p. 63, 83, 115, 127, 134.

type facilities, consistently implement the concept of dose constraints for all facilities, and standardise regulatory practice for derived release limits.⁶⁵

At the ROR meeting in December 2021, a CNSC Staff member brought up the IRRS Report, asking about the inconsistencies with the DRLs used by the CNSC. The Director of Health Science and Environmental Compliance Division provides:

So the derived release limit, as it stands right now, is to look at how much radionuclide would you need to release in order for a member of the public or the most exposed individual to get one millisievert. Internationally, one millisievert isn't recognized as best practice. So while one millisievert is still the public dose limit -- and that's not planning to be changed, licensees can do better. So there can be a dose constraint, or we can look at lowering that, what that release level would be. So we've been working on that approach in the new REGDOC-2.9.2 and you should be -- I know I've been saying this many times -- but you should be seeing that in 2022 in front of you.⁶⁶

The new REGDOC-2.9.2, *Controlling Releases to the Environment*, is still in its draft phase, and is not mentioned in the 2021 ROR. The consultation period for the draft of the regulatory document took place during the period of March 29, 2021-July 27, 2021. At this point in time, the document has not been presented to the Commission.⁶⁷ As a result, the calculation of DRLs from nuclear power generating sites remains unchanged. CELA **submits** that the lack of consistency in the calculation of DRLs puts Canadians at risk and **requests** that an update on the new regulatory document be provided at the upcoming ROR meeting, i.e., when we can expect it to be presented to the Commission and be published, considering that the consultation period ended over a year ago?

At the Pickering Nuclear Generating Site, OPG reported two Gross Beta-Gamma Environmental Action Level Exceedances in 2021. The ROR states “the first exceedance was related to sewage releases and the second was related to the reactor building service water. No consequences to the public and environment are expected as a result of these exceedances.”⁶⁸ The ROR provides no details on what is considered to be a Gross Beta-Gamma Environmental Action Level Exceedance, nor does it state how much these exceedances were. CELA **submits** that the ROR needs to be transparent with the public, especially with regards to how the CNSC determined that “no consequences to the public and environment are expected.” CELA **recommends** that these exceedances be discussed at the upcoming Commission meeting.

The annual tritium emissions to air and discharges to Lake Ontario from the Pickering nuclear power generating plant are very high. CELA provided a number of recommendations in previous ROR submissions,⁶⁹ however, our recommendations have not been taken up in this year's ROR.

⁶⁵ 2019 Report of the Integrated Regulatory Review Service (IRRS) Mission to Canada, p. 53.

⁶⁶ CNSC, Transcript of December 15, 2021 Commission Meeting, p.126-127.

⁶⁷ <http://nuclearsafety.gc.ca/eng/acts-and-regulations/regulatory-documents/history/regdoc2-9-2.cfm>

⁶⁸ 2021 ROR, p, 83.

⁶⁹ Submission by CELA to the CNSC Regarding the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2019 (November 16, 2020) and Submission by CELA to the CNSC Regarding the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2020 (November 1, 2021).

CELA reiterates our concern that these emissions and releases constitute a serious health hazard to residents of the Greater Toronto Area. CELA **continues to recommend** the immediate application of the **precautionary principle** which, if applied, would result in the Pickering station being closed as soon as technically feasible.

Once again, CELA also **requests** that the CNSC explain why Gentilly-2 is still emitting large TBq/a amounts of tritium (and other emissions) in 2019 given it was closed at the end of 2012 and all its fuel removed by the end of 2014.⁷⁰ This year's ROR noted that "loose contamination events took place at Gentilly-2 in 2021. However, none of these events indicate a loss of control in the radiation protection program."⁷¹ The ROR does not go into detail about the kind of contamination events. The CNSC should also confirm potential reasons for these emissions. CELA raised this recommendation during the ROR last year and the year prior, however, our comments were not addressed at previous Commission Meetings or in this year's ROR.

Recommendations

23. Changes to the scope and format of the ROR concerning DRLs should be explained at the upcoming Commission Meeting and should be expressly explained in the text of the ROR.
24. The Derived Release Limits and Radiological Releases to the Environment Appendix be restored in the ROR, and that the data in the Appendix be presented in a similar manner as pollutants are reported on the NPRI.
25. There should be an update provided on the new REGDOC-2.9.2 at the upcoming Commission Meeting.
26. The two Gross Beta-Gamma Environmental Action Level Exceedances at PNGS in 2021 should be discussed at the upcoming Commission Meeting.
27. With regard to the very high Tritium emissions from the Pickering nuclear power plant, the precautionary principle should be applied immediately.
28. CNSC staff should explain why the Gentilly-2 site continues to emit tritium despite the removal of fuel in 2014 and its closure in 2012.

K. Decommissioning Planning

The 2018 ROR contained a helpful discussion of the decommissioning planning process, and the RegDocs and standards which inform decommissioning licensing for all nuclear facilities. However, the 2021 ROR no longer addresses the decommissioning process generally nor does it provide any details on the decommissioning process for specific NPGS. This lack of consistency in terms of the content of the ROR makes it very difficult for the public to follow and understand the purpose of the ROR. CELA has previously commented on the value of RORs breaking down the decommissioning process. CELA once again **recommends** that this change be explained at the upcoming Commission Meeting and that changes to scope and format be expressly explained in the text of the ROR.

⁷⁰ See Dr. I. Fairlie, "Continued Radioactive Emissions from Old Closed Nuclear Reactors" (12 Oct 2019), online: <https://www.ianfairlie.org/news/continued-radioactive-emissions-from-old-closed-nuclear-reactors/>

⁷¹ 2021 ROR, p. 134.

Recommendation

29. Changes to the scope and format of the ROR concerning Decommissioning Planning should be explained at the upcoming Commission Meeting and should be expressly explained in the text of the ROR.

L. CNSC-Led KI Pill Working Group

The 2021 ROR briefly mentions potassium iodide (“KI” pill) distribution in New Brunswick, noting that in September 2021, the New Brunswick Emergency Measures Organization completed a replacement of expiring KI pills with RadBlock KI with an expiry date of April 2032.⁷² Beyond this, the ROR makes no mention of the KI distribution requirements for NPGS. CELA reiterates that this is an important element of emergency preparedness for all NPGS, and **submits** that a discussion of KI distribution requirements and any updates based on meetings of the CNSC-led KI Pill Working Group would fall well within the scope of this ROR.

CELA remains an active member of the advisory group to the KI Pill Working Group and **submits** that distribution of KI pills is currently inadequate. While operators and regulators have spent years working on understanding the current framework for storing and distributing potassium iodide, the critical work has not begun as committed to in the last Pickering hearing to further distribute KI pills to residents living beyond 10 km. This measure is especially critical for vulnerable populations, such as children.

CELA continues to **recommend** expanding the delivery of KI pills to a pre-distribution area of 50 km, rather than the current 10 km pre-distribution area. CELA further **recommends** that KI pill distribution requirements and updates from the KI Pill Working Group be discussed at the upcoming Commission Meeting and integrated into this ROR.

Recommendations

30. The CNSC should consider expanding the delivery of KI pills to a pre-distribution area of 50 km, rather than the current 10 km pre-distribution area.
31. KI distribution requirements and updates from the KI Pill Working Group be discussed at the upcoming Commission Meeting and integrated into this ROR.

M. Elevated Hydrogen Equivalent Concentration in the Pressure Tubes of Reactors

On November 1 to 3, 2022, the CNSC will hold a public meeting to provide CNSC staff with an update on the discovery of elevated hydrogen equivalent (Heq) concentration in the pressure tubes of reactors in extended operation. According to the notice published on the CNSC website, the Bruce Nuclear Generating Station Units 3 and 6 showed an Heq concentration in exceedance of the license permit of 120 parts per million in July 2021.

⁷² 2021 ROR, p. 36.

According to the 2021 ROR, the public awareness of this exceedance was low, despite there being an increased interest in what Bruce Power is doing to ensure the safety of its reactors.⁷³ Transparency surrounding nuclear safety—including regulatory violations—is essential to maintain public trust, as well as holding licencees accountable.

Despite a notice for Participant Funding on this issue being posted in the commission calendar for the November meeting, the public did not receive notice about either this meeting, or the July 29, 2022 deadline to apply for participant funding.⁷⁴ Due to this lack of notice, CELA, as well as other stakeholders who are concerned about the health and safety of the public, the environment and workers, were unable to seek participant funding to allocate to reviewing resources. CELA **recommends** that the CNSC review its procedures surrounding the publication of notices. CELA also **recommends** that the next ROR be updated with findings from the update on the elevated Heq concentrations, and explain how these exceedances are to be addressed and prevented.

CELA is concerned with the recurring issue of equivalent hydrogen concentration in the pressure tubes of nuclear reactors. Back in 2019, a CNSC Staff member commented that “the issue of pressure tube fracture toughness and equivalent hydrogen concentration recurs on a regular basis at meetings and hearings.”⁷⁵ In 2019, pressure tubes at the Pickering and Darlington Units and Bruce Units 1 through 4 and Unit 6 were not expected to reach 120 parts per million of hydrogen equivalent by end of service or by the point at which the utility would begin major component replacement.⁷⁶ Then at the Commission Meeting on December 9, 2020, CNSC Staff confirmed that Bruce Power had adequate programs in place to confirm that pressure tubes were fit for operation.⁷⁷ Despite CNSC staff repeatedly confirming that Bruce Power has adequate programs in place to keep pressure tubes fit for operation,⁷⁸ the reactors at the Bruce Nuclear Generating Station Units 3 and 6 exceeded license concentrations of Heq in 2021. The modelling assessing the fitness-for-service of pressure tubes has been critiqued in the past,⁷⁹ however the CNSC has repeatedly expressed that pressure tubes at sites like Bruce NPGS are in satisfactory order. These critiques proved to be worthy of concern, with Bruce NPGS having elevated Heq concentrations in the pressure tubes of units in extended operation.

CELA is concerned about the exceedances at Bruce NPGS, as other sites across Ontario continue to age. Pickering NPGS is approaching the end of its commercial operations, and CELA urges the CNSC to take into consideration this license exceedance at Bruce NPGS in the event that OPG seeks extension of the Pickering NPGS. To prevent exceedances such as this from occurring at

⁷³ 2021 ROR, p. 40.

⁷⁴ <https://nuclearsafety.gc.ca/eng/the-commission/pdf/Notice-PressureTube-Nov-Meeting-e.pdf>

⁷⁵ CNSC, Transcript of November 6, 2019 Commission Meeting, p. 99.

⁷⁶ CNSC, Transcript of November 6, 2019 Commission Meeting, p. 102.

⁷⁷ CNSC, Transcript of December 9, 2020 Commission Meeting, p. 35.

⁷⁸ CNSC, Transcript of December 15, 2021 Commission Meeting, p. 38.

⁷⁹ *See for instance*, Frank R. Greening, “Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2018”, CMD 19-M30.2 (September 19, 2019), online: <https://www.nuclearsafety.gc.ca/eng/the-commission/meetings/cmd/pdf/CMD18/CMD19-M30-2.pdf>; Frank R. Greening, “Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2018”, CMD 19-M30.2A (October 2, 2019), online: <https://www.nuclearsafety.gc.ca/eng/the-commission/meetings/cmd/pdf/CMD18/CMD19-M30-2A.pdf>.

Pickering, CELA **once again recommends** that that the precautionary principle be applied to any request to extend the life of the Pickering NPGS, and reject such a request.

Recommendations


32. The public needs adequate notice in order to express interest in responding to matters before the CNSC. The CNSC should review its procedures surrounding the publication of notices, particularly for participant funding notices.
33. The next ROR should be updated with findings from the update on the elevated Heq concentrations, and explain how these exceedances are to be addressed and prevented.
34. The elevated Heq concentrations at Bruce NPGS emphasize the importance of applying the precautionary principle to an application to extend the operations at Pickering NPGS. Pickering has aging infrastructure that increases the likelihood of license permit exceedances, and extending the life of this site needlessly puts the public and the environment at risk.

III. CONCLUSIONS

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

Sincerely,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION

A handwritten signature in cursive script that reads "Sara Libman". The signature is written in black ink and is positioned above a horizontal line.

Sara Libman, Legal Counsel

APPENDIX A

Summary of Recommendations

1. CELA remains of the view that ROR meetings are not a replacement for relicensing hearings and the CNSC must remedy the discrepancy in participation rights among public intervenors and licensees by providing oral presentation opportunities.
2. The ROR would be more effective if the CNSC canvassed a list of issues and topics to inform the scope of the ROR. Given the trend to longer, ten-year licences, soliciting public comment on the scope of issues addressed in ROR would provide a starting point for public engagement.
3. The aim of the ROR should be to identify gaps and propose action items which improve licensee compliance within all Safety and Control Areas.
4. Both French and English versions of the ROR should be made available at least 60-days in advance of the due date for an intervention.
5. The PNERP Technical Study should be made available to the public without the requirement for a request to the OFMEM.
6. The ROR should be updated to include a full review of the PNERP Technical Study and its implications for Ontario's NPGS. This should be addressed at the upcoming Commission Meeting.
7. The ROR should be updated to include a review of how the PNERP Technical Study will impact the protection of drinking water supplies near NPGS, particularly as it relates to emergency planning. This should also be discussed at the upcoming Commission Meeting.
8. The updated PNERP Master Plan should be addressed at the upcoming Commission Meeting, and should be addressed in the 2022 ROR. The Commission should also assess whether the updated PNERP Master Plan adequately reflects the results of the PNERP Technical Study.
9. The CNSC should amplify any call for public comments on the five-year review of the PNERP Master Plan and provide insights as to discussions thus far.
10. The ROR should include a detailed discussion of how the ERAMG Plan will impact environmental monitoring at NPGS and support protective action decision making after a nuclear or radiological emergency.
11. The ROR should be updated to include a detailed discussion of the existing processes and updates to plans/procedures impacting the preparedness work of the NIG and the NEMCC.
12. The ROR should be updated to include a detailed discussion of the PLNGS Technical Planning Basis and the Point Lepreau Nuclear Off-site Emergency Plan, and their impact on emergency planning at Point Lepreau. This should also be addressed at the upcoming Committee Meeting.
13. Radionuclides data should be reportable and accessible on Canada's National Pollutant Release Inventory ("NPRI") in a similar manner as pollutants currently reported.
14. As a standing item, the ROR should review 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 pursuant to the *Prohibition of Asbestos and Products Containing Asbestos Regulations*.
15. The Commission should direct Staff to expressly consider climate impacts and vulnerabilities within the scope of the ROR. As climate impacts become more frequent and

pronounced, CELA urges the CNSC to discuss climate change in the context of licensee oversight because of the major safety and environmental issues it poses to operations, health and safety.

16. The most recent updates to environmental risk assessments and updates to safety analyses which speak to climate change resiliency should be reviewed and reflected in the ROR.
17. The Commission should assess challenges of conducting inspections during the COVID-19 pandemic to implement measures to ensure on-site inspections are able to continue uninterrupted in the midst of public health crises and other unforeseen emergency situations.
18. The Commission should provide information regarding CNSC's plan to return to the use of on-site inspections during the upcoming ROR meeting.
19. The ROR should function as comprehensive and evergreen document to ensure updates are made to the text when available, such as when licenses are amended, and what those amendments entail.
20. The ROR should be updated to include a detailed discussion of the changes made to the Darlington power reactor operating license, which authorizes activities related to the production and possession of Mo-99. This should also be discussed at the upcoming Commission Meeting.
21. The Commission should provide a statement in response to plans from OPG and the province of Ontario to extend the current operations at Pickering. For public clarity, it would be of much value for the Commission to speak to their role and the licensing process which would be required for this further extension to occur.
22. Given the lacunae of environmental assessment legislation that applies to major nuclear projects, such as the decommissioning of nuclear power plants, and the outstanding requests from Durham Region and other civil society organizations for a federal environmental assessment for the decommissioning of the Pickering nuclear generating station, CELA requests this topic be a required agenda item for discussion at the ROR meeting.
23. Changes to the scope and format of the ROR concerning DRLs should be explained at the upcoming Commission Meeting and should be expressly explained in the text of the ROR.
24. The Derived Release Limits and Radiological Releases to the Environment Appendix be restored in the ROR, and that the data in the Appendix be presented in a similar manner as pollutants are reported on the NPRI.
25. There should be an update provided on the new REGDOC-2.9.2 at the upcoming Commission Meeting.
26. The two Gross Beta-Gamma Environmental Action Level Exceedances at PNGS in 2021 should be discussed at the upcoming Commission Meeting.
27. With regard to the very high Tritium emissions from the Pickering nuclear power plant, the precautionary principle should be applied immediately.
28. CNSC staff should explain why the Gentilly-2 site continues to emit tritium despite the removal of fuel in 2014 and its closure in 2012.
29. Changes to the scope and format of the ROR concerning Decommissioning Planning should be explained at the upcoming Commission Meeting and should be expressly explained in the text of the ROR.
30. The CNSC should consider expanding the delivery of KI pills to a pre-distribution area of 50 km, rather than the current 10 km pre-distribution area.

31. KI distribution requirements and updates from the KI Pill Working Group be discussed at the upcoming Commission Meeting and integrated into this ROR.
32. The public needs adequate notice in order to express interest in responding to matters before the CNSC. The CNSC should review its procedures surrounding the publication of notices, particularly for participant funding notices.
33. The next ROR should be updated with findings from the update on the elevated Heq concentrations, and explain how these exceedances are to be addressed and prevented.
34. The elevated Heq concentrations at Bruce NPGS emphasize the importance of applying the precautionary principle to an application to extend the operations at Pickering NPGS. Pickering has aging infrastructure that increases the likelihood of license permit exceedances, and extending the life of this site needlessly puts the public and the environment at risk.