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

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

**Regulatory Oversight Report
for Canadian Nuclear Power
Generating Sites for 2023**

**Rapport de surveillance
réglementaire des sites
nucléaires pour 2023**

Commission Meeting

Réunion de la Commission

February 25, 2025

Le 25 février 2025

Canada

**SUBMISSION BY THE CANADIAN ENVIRONMENTAL LAW ASSOCIATION
TO THE CANADIAN NUCLEAR SAFETY COMMISSION REGARDING THE
REGULATORY OVERSIGHT REPORT FOR CANADIAN NUCLEAR POWER
GENERATING SITES FOR 2023**

January 10, 2025

Prepared by

Sara Libman, Legal Counsel

I. INTRODUCTION

This submission is filed in response to the Canadian Nuclear Safety Commission’s (“CNSC”) Revised Notice of Participation at a Commission Meeting and Participant Funding¹ in respect of the *Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2023* (herein “ROR”)². A public meeting with respect to this matter is scheduled for February 25, 2025.

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 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.³

¹ CNSC, Revised Notice of Participation at a Commission Meeting and Participant Funding, online: <https://api.cnscccsn.gc.ca/dms/digital-medias/24-M26-RevisedNotice-20250225-CommissionMeeting-e.pdf/object>.

² CNSC, Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2023, CMD 25-M9 [ROR 2023].

³ Canadian Environmental Law Association, online: www.cela.ca

II. FINDINGS WITHIN THE REGULATORY OVERSIGHT REPORT

CELA has routinely participated in the annual ROR meeting for Nuclear Power Generating Sites (“NPGS”). In response to the 2023 ROR, CELA raises a number of issues relating to the ROR’s scope and content, and provides the following comments relating to the CNSC’s review of nuclear power generating sites and activities. Our comments are organized largely by examining certain Safety Compliance Areas (“SCAs”) and considering the compliance issues across the various NPGS covered within the ROR. In addition to our review of SCA compliance, we touch upon a number of general comments and concerns stemming from reviewing the entirety of the report. Our findings, are set out below, accompanied by either requests or recommendations to the Commission and CNSC staff.

Before delving into the substantive review of the ROR, we wanted to provide a brief comment commending CNSC staff for the addition of staff hours and effort to the “Highlights from 2023 regulatory oversight activities” section in the ROR.⁴ This addition to the ROR was in response to Commission member feedback,⁵ and for intervenors and members of the public, this snapshot of how CNSC staff are spending their time conducting regulatory oversight activities creates transparency on the regulatory oversight process and where CNSC staff are focusing their time and people power in the context of ensuring regulatory compliance at various sites encompassed in the ROR.

A. Public Participation within the ROR Process

In previous ROR submissions, CELA has emphasized the need for expanded public participation opportunities. For instance, in our submissions for the 2021 ROR, we submitted:

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

⁴ See ROR 2023, page 10

⁵ ROR 2023, page 1

poses questions and actively seeks public feedback. This reframing would more closely align with the public opportunity for comment this process provides.⁶

For the Commission meeting discussing the 2022 ROR and the Mid-Term Update of the Pickering Nuclear Generating Station, intervenors were invited to provide oral submissions at the meeting, in addition to providing written comments. CELA embraced this opportunity and presented comments virtually. Being able to not only observe the Commission member's discussion of our written submission, but to engage in the discussion greatly improved our experience with the ROR process. Allowing intervenors to present and provide closing remarks allows intervenors to emphasize key issues to Commission members, as well as provide unique insight and responses to issues that arise during the question period.

By allowing intervenors to engage in a dialogue with the Commission members, there is a more transparent and accurate record of concerns and how they are being addressed by either NPGS operators, or CNSC staff.

CELA is disappointed that intervenors were not afforded the opportunity to present orally at the Commission meeting this year. After experiencing a more transparent and publicly engaging Commission meeting last year, the intervenor **recommends** that the CNSC revisit the notion of offering oral intervention opportunities at future Commission meetings to intervenors.

Recommendation

1. Intervenors who provide comments on an ROR should have an opportunity to present orally before the Commission.

B. Type I and Type II Inspections

In the "Highlights from 2023 regulatory oversight activities" section of the ROR, Table 2 provides a breakdown of the total number of inspections and findings per site in 2023. The types of inspections listed in the table are as follows:

- Type I Inspections
- Type II Inspections
- Desktop Inspections
- Field Inspections⁷

⁶ 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 Power Generating Sites: 2021" (14 September 2022), CMD 22-M34.6, page 4, *emphasis added*.

⁷ ROR 2023, page 11

The ROR does not provide the reader with a description of the different types of inspections, and in particular, there is no explanation of what a Type I inspection is compared to a Type II inspection. We **submit** providing a brief description of each type of inspection would benefit members of the public who access this document, as it would provide a clearer understanding of the regulatory oversight occurring at each site on an annual basis.

According to the CNSC website, Type I and Type II inspections vastly different:

- **Type I inspection:** Type I inspections (also known as audit) are in-depth examinations of a licensee’s processes and operations and typically occur at the licensee’s operational site(s). Compliance verification is done through direct observations of work activities, a comprehensive review of procedures and records, and staff interviews. This type of inspection will include the participation of several CNSC staff members, who may be onsite for a period of several days.
- **Type II inspection:** A Type II inspection is an onsite snapshot of the licensee’s operations. These inspections are typically shorter than Type I, since extensive interviews are not performed, and data is collected mainly through direct observations, measurements and reviews of onsite records.⁸

When reviewing Table 2, most sites received one if not multiple Type II inspections (only RWOS-1 did not have a Type II inspection in 2023). However, only Bruce received a Type I inspection (and in January 2024, Darlington was also subjected to a Type I inspection).

An update note for Darlington in the ROR explains that: “Following the downgraded performance of the security SCA in 2021 and 2022, and in order to assess the state of OPG's security program following programmatic improvements made by OPG to address the decline in performance, CNSC staff conducted a Type I inspection in January 2024. CNSC staff conduct Type I inspections in order to assess a licensee program or process, rather than assessing the output of the program or process.”⁹

The ROR does not go into detail as to what the Type I inspection at Bruce focused on, nor does the report elaborate on what triggers one of these inspections. In the case of Darlington, the ROR notes that repeated poor performance under the Security SCA triggered the Type I inspection. The intervenor **requests** further details and insight surrounding Type I inspections. For instance, what triggers this type of inspection; how frequently do NPGS tend to undergo these inspections; and is there a specific SCA that tends to be the focus of these inspections.

⁸ Canadian Nuclear Safety Commission, “Licensing Process” website: <https://www.cnsccsn.gc.ca/eng/nuclear-substances/licensing-nuclear-substances-and-radiation-devices/licensing-process/>, *emphasis added*.

⁹ ROR 2023 at page 30

Additionally, we **request** details about the Type I inspection at Bruce: what triggered it, and what was the outcome of the inspection?

Recommendations

2. The ROR should provide a description of each type of inspection and what they entail, e.g., Type I inspection, Type II inspection, desktop inspection, and field inspection.
3. Further details and insight surrounding Type I inspections are requested. For instance, what triggers this type of inspection; how frequently do NPGS tend to undergo these inspections; and is there a specific SCA that tends to be the focus of these inspections.
4. Details about the Type I inspection at Bruce are requested: what triggered it, and what was the outcome of the inspection?

C. Management System SCA

Darlington NGS

When reading through the discussion of Darlington's compliance with the Management System SCA, the ROR notes: "corrective actions to address non-compliance for the Management System SCA could be improved."¹⁰ More information is **requested** regarding this statement. The intervenor would like to know what corrective actions were previously conducted, as well as what actions would CNSC staff propose to properly address non-compliance with the Management System SCA.

Recommendation

5. At the Commission meeting there should be a discussion surrounding the corrective actions to address Darlington's non-compliance for the Management System SCA, and elaborate on what corrective measures are not working, and what is being proposed to effectively address this issue.

¹⁰ ROR 2023 at page 19

D. Human Performance SCA

Point Lepreau

According to CNSC staff, there has been an increase in events at Point Lepreau where human performance was a contributing factor to the cause of the event.¹¹ An Increased Regulatory Scrutiny and Action Item was put in place, and was closed on May 9, 2024 due to NB Power implementing a set of measures that had a positive impact on the recurrence of events.

While the intervenor is relieved to hear that NB Power has implemented measures to reduce the number of events being caused by human performance, the role of human performance in ensuring safe practices at nuclear power facilities must be carefully considered by both NPGS operators and the CNSC.

CELA has previously expressed concerns about human performance, workplace complacency, and non-compliance with safety measures. For instance, our submission for the 2022 ROR and the Mid-Term Update for the Pickering Nuclear Power Generating Station expressed concerns about human performance and recent non-compliance events at Pickering:

The findings of non-compliance were raised in the Emergency Preparedness and Fire Protection SCA, and the Human Performance SCA. These instances of non-compliance once again call into question whether staff at Pickering are taking their roles in nuclear safety seriously as the lifespan of Pickering (and their job positions) shortens over time.¹²

We **request** that the measures set in place by NB Power to address human performance non-compliance be discussed at the Commission meeting, and discuss how other NPGS are ensuring human performance is not compromising health and safety for workers, the public, and the environment.

Recommendation

6. The measures set in place by NB Power to address human performance non-compliance should be discussed at the Commission meeting, and discuss how other NPGS are ensuring human performance is not compromising health and safety for workers, the public, and the environment.

¹¹ ROR 2023 page 107

¹² 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 Power Generating Sites: 2022 and the Mid-Term Update of Licensed Activities for the Pickering Nuclear Generating Station” (29 October 2023), CMD 23-M36.4, at page 13 [CELA Oct 2023 Comments]

E. Operating Performance SCA

Pickering

Last year, CELA expressed concerns about SCA compliance (and non-compliance) at Pickering,¹³ and when reviewing this year's ROR for Operating Performance SCA compliance at Pickering, we were disappointed to see CNSC staff report that OPG was non-compliant with the safe operating envelope (SOE) requirements for Pickering, including requirements to notify CNSC of changes: "OPG made non-conservative changes to station operating documentation pertaining to reactor building temperature limits that did not reflect the defined SOE."¹⁴ These non-compliant acts resulted in CNSC Staff recording 5 non-compliance activities of medium safety significance.

While CNSC staff are satisfied with OPG's corrective actions to address concerns related to the SOE, the intervenor is concerned about that the violation of the SOE occurred in the first place. With one of the corrective actions being repairs to air conditioning units,¹⁵ CELA is concerned that OPG is not taking the maintenance of this aging nuclear facility seriously, and that repairs only occur when CNSC staff discover non-compliance issues during inspections. We **request** that this event be discussed in great detail at the Commission meeting. There needs to be transparency with the public to understand how this event occurred, and why safe operating envelope requirements were violated, and how long was the reactor building temperature not reflecting the limits set within the SOE.

According to CNSC Staff in the ROR, "the number of trips and setbacks at the PNGS have increased in 2023 compared to 2022 but remain comparable to expected industry rates."¹⁶ We **request** that OPG explain why the number of trips and setbacks have increased, and whether Pickering is at risk of exceeding industry rates in the future, i.e., is the number of trips and setbacks expected to continually rise of the course of Pickering's licencing period.

Recommendations

7. The non-compliance with Operating Performance at Pickering resulting in a medium safety significance event occurring needs to be discussed in great detail at the Commission meeting. There needs to be transparency with the public to understand how this event occurred, and why safe operating envelope requirements were violated, and how long was the reactor building temperature not reflecting the limits set within the SOE.

¹³ See generally, CELA Oct 2023 Comments

¹⁴ ROR 2023, page 48

¹⁵ ROR 2023, page 48

¹⁶ ROR 2023, page 49

8. OPG should explain why the number of trips and setbacks have increased, and whether Pickering is at risk of exceeding industry rates in the future, i.e., is the number of trips and setbacks expected to continually rise of the course of Pickering’s licencing period.

F. Fitness for Service SCA

Darlington

While CNSC staff noted in the ROR that “...all special safety systems for Darlington met their Actual Past Unavailability (APU) targets for 2023...,” the Emergency Coolant Injection (ECI) systems exceeded their APU target for Units 2 and 4.¹⁷ These exceedances were caused by “unplanned coincident unavailability of equipment. CNSC staff remarked that this event did not cause a direct safety risk, *however*, this resulted in a “reduction in the ability of the plant to mitigate design basis accidents during impairment.”¹⁸

Although corrective actions were deemed to be acceptable and commensurate with the level of risk, according to CNSC staff, the intervenors are quite alarmed that an event occurred which reduced the ability for Darlington to mitigate design basis accidents during impairments. At the time of CELA’s submission being written, a public hearing to consider OPG’s application for a licence to construct a small modular reactor at the Darlington site is underway (January 8-14, 2025). CELA has expressed concerns about siting another nuclear reactor within close proximity to an existing and aging NPGS, as this increases the risk of accidents and increases the severity of accident impacts. The intervenor is concerned that Darlington is unable to comply with the fitness for service SCA.

We **request** that this event be discussed in further detail at the Commission meeting, and in particular a discussion of what the level of risk was that arose from this incident, what was done to rectify the issue, and what is being done to prevent it from happening again. Furthermore, we **request** that the Commission take this issue into consideration when reviewing OPG’s application for a licence to construct a small modular reactor at the Darlington site.

Pickering

According to CNSC staff, inspectors identified a non-compliant finding of medium safety significance as a result of OPG engineering staff not performing routine field walkdowns at the required frequency using approved checklists and were not maintaining appropriate records.¹⁹ CELA is concerned about whether OPG staff are truly taking safety seriously at Pickering with this finding of routine field walkdowns not being performed.

¹⁷ ROR 2023, page 25

¹⁸ ROR 2023, page 25, *emphasis added*

¹⁹ ROR 2023, page 52

CELA is also concerned with the following statement within the ROR: “despite this finding, CNSC staff acknowledge that multiple barriers exist and, while emphasizing that defence in depth has been maintained.”²⁰ This statement seemingly downplays the issue of employees at Pickering not completing safety tasks at the NPGS, essentially saying because there are some other safeguards in place, it is not a big deal that engineers are not routinely doing walk throughs of the nuclear power plant. From the public’s perspective, there is a lack of proper care and oversight for the structures, systems, and components at Pickering. CELA **implores** the CNSC to discuss this event in detail at the Commission meeting, determining why engineers were not performing routine field walkdowns (e.g., was this a staffing issue, or a complacency in the workplace issue); how often were these walkdowns occurring; what could have happened as a result of routine field walkdowns not occurring; what was the expected frequency of these routine field walkdowns; and why does Pickering seem to have an issue with proper record keeping (this is an issue CELA raised in our comments last year).

Recommendations

9. The ECI system exceeding the APU target at Darlington should be discussed in greater detail at the Commission meeting, with the Commission discussing what the level of risk was that arose from this incident, what was done to rectify the issue, and what is being done to prevent it from happening again.
10. The Commission should take this event into consideration when reviewing OPG’s application for a licence to construct a small modular reactor at the Darlington site.
11. The CNSC needs to discuss medium safety significance event in the maintenance specific area for the fitness for service SCA at Pickering in detail at the Commission meeting, determining: why engineers were not performing routine field walkdowns (e.g., was this a staffing issue, or a complacency in the workplace issue); how often were these walkdowns occurring; what could have happened as a result of routine field walkdowns not occurring; what was the expected frequency of these routine field walkdowns; and why does Pickering seem to have an issue with proper record keeping.

G. Radiation Protection SCA

Pickering

The ROR notes that there was one action level exceedance at Pickering for an unplanned internal intake of tritium oxide, resulting in a total effective dose of 3.03 mSv to a Nuclear Energy

²⁰ ROR 2023, page 52

Worker.²¹ CELA **requests** that this event be discussed in greater detail at the Commission meeting. In particular, we seek clarification on how and why this event occurred, and what OPG implemented in its corrective actions to prevent a reoccurrence.

Recommendation

12. The unplanned internal intake of tritium oxide at Pickering should be discussed in greater detail at the Commission meeting. In particular, we seek clarification on how and why this event occurred, and what OPG implemented in its corrective actions to prevent a reoccurrence.

H. Environmental Protection SCA

Darlington

In September 2023, Darlington had an action level exceedance for tritium oxide, in which over double the station Action Limit was released: the station Action Limit is 2,670 Ci/week, and 6,469.24 Ci of station tritium oxide was released.²² The ROR does not specify what caused this release, where this release occurred, nor how this action level exceedance was dealt with. Therefore, the Intervenor **requests** that this release of tritium oxide be discussed in detail at the upcoming Commission meeting.

Pickering

CELA **requests** more details be discussed regarding the environmental action level exceedance for gross beta/gamma in sewage that occurred at Pickering. The ROR does not provide much detail about this event, only that OPG took corrective action to prevent recurrence, and that the event did not impact the health of the public or the environment. OPG should provide the following information at the Commission meeting: when did this event occur; how much gross beta/gamma was released in sewage; how did this event happen; and what were the corrective actions taken to prevent recurrence?

Recommendations

13. The Action Level exceedance of tritium oxide at Darlington needs to be discussed in greater detail at the Commission meeting to determine the following: what caused the release; where the release occurred; how the Action Level exceedance was dealt with; and what is being done to prevent this from happening again in the future.

²¹ ROR 2023, page 54

²² ROR 2023, page 27

14. More details should be discussed regarding the environmental action level exceedance for gross beta/gamma in sewage that occurred at Pickering. OPG should provide the following information at the Commission meeting: when did this event occur; how much gross beta/gamma was released in sewage; how did this event happen; and what were the corrective actions taken to prevent recurrence?

I. Emergency Management and Fire Protection SCA

With instances of medium safety significance for non-compliance with the Emergency Management and Fire Protection SCA occurring at both Darlington and Pickering in 2023, there are concerns that OPG is not prioritizing emergency management and fire protection at its nuclear power plants. In the public eye, emergency planning and fire protection are essential elements of ensuring safe nuclear power operations. When multiple NGPS are being found non-compliant in more than a negligible or low safety significance level, there are concerns about human health and safety. The intervenor **recommends** that the CNSC review OPG's overall approach to compliance with Emergency Management and Fire Protection SCA, and how they intend to prevent instances of non-compliance at all the sites OPG is responsible for.

Darlington

A rather concerning instance of medium safety significance non-compliance occurred at Darlington in August 2023: a reactive field inspection was conducted by CNSC staff due to an adverse trend regarding the audibility issues of the public address (PA) system throughout the station.²³ In the public eye, having a functioning PA system at a nuclear power plant is essential in being able to address emergency situations and ensure safety protocols are being followed.

The ROR notes that the PA system is *not* repaired, rather OPG is working through their corrective action plan to repair and replace ageing portions of the PA system.²⁴ From a best practices perspective, CELA **submits** that these systems should have been undergoing routine maintenance to ensure they are functioning, rather than an action plan arising from a *reactive field inspection*. CELA requests that OPG explain why the PA system at Darlington was not maintained and upgraded in a timely manner.

²³ ROR 2023, page 28

²⁴ ROR 2023, page 28

Pickering

Yet another instance of a medium safety significance event was reported at Pickering in the 2023 ROR, with this non-compliance issue pertaining to the maintenance of staged fire equipment. The ROR notes: "...monthly inspections being performed by OPG personnel, were not identifying and resolving issues related to the maintenance fire extinguishers, monitors, attack and supply hoses."²⁵ After last year's ROR revealing numerous instances of non-compliance with this SCA at Pickering,²⁶ it was assumed that OPG would strive to have an improved compliance record the following year, not a worse one.

Western Waste Management Facility (WWMF)

During an inspection conducted in March 2023, CNSC staff identified 4 non-compliant findings of low safety significance. One of these findings was the storage of combustible material in unacceptable areas, and another being blocked access to a sprinkler control valve.²⁷

CELA seeks clarification on why these two events in particular were only deemed to be low-safety significance, as from the public's perspective, these incidents could have easily resulted in severe consequences in the result of a fire. CELA **requests** more details on these incidents, especially how long had these conditions been in place before being noticed at an inspection.

Recommendations

15. The CNSC review OPG's overall approach to compliance with Emergency Management and Fire Protection SCA, and how they intend to prevent instances of non-compliance at all the sites OPG is responsible for.
16. From a best practices perspective, the Darlington PA systems should have been undergoing routine maintenance to ensure they are functioning, rather through than an action plan arising from a *reactive field inspection*. OPG should explain why the PA system at Darlington was not maintained and upgraded in a timely manner.
17. Clarification is needed on why the Emergency Management and Fire Protection SCA non-compliance events at WWMF were only deemed to be low-safety significance, as from the public's perspective, these incidents could have easily resulted in severe consequences in

²⁵ ROR 2023, page 57

²⁶ See CELA Oct 2023 Submission at pages 12-13

²⁷ ROR 2023, page 99

the result of a fire. CELA **requests** more details on these incidents, especially how long had these conditions been in place before being noticed at an inspection.

J. Climate Change

In our submission last year, we raised a number of issues surrounding climate change impacts and climate change mitigation. In particular, we noted that the ROR's review of climate change and the licensees' responses on climate change was inadequate.

We reiterate that the impacts of climate change on nuclear reactors include various climate-related hazards such as heat waves, floods, droughts, storms, lightning events and wildfires which can pose challenges to nuclear safety, necessitating enhanced safety assessments and adaptive management strategies.²⁸ Rising temperatures can threaten nuclear reactors, as they often rely on large external sources of water for cooling. In the case of Canadian reactors, this water is usually from the Great Lakes, or the Bay of Fundy in the case of Point Lepreau. Higher water temperatures can reduce the thermal efficiency of nuclear reactors and even lead to temporary shutdowns when the required cooling cannot be ensured. Heightened water stress, either from reduced availability or competing uses, is a concern since nuclear reactors require significant amounts of water for cooling purposes.²⁹ The IAEA highlights the need to reassess nuclear installations' safety against external hazards due to climate change.³⁰ These hazards include meteorological events like lightning and tropical cyclones, hydrological events such as floods and storm surges, and fire-related hazards. Continuous site hazard assessment and timely management of plant reactions to extreme events are essential for ensuring nuclear safety. Besides these hazards, increasing temperatures lead to growth in algae species, which can water intake create blockages and shutdowns.³¹

When reviewing CELA's submission from last year, CNSC staff recorded their responses to the various issues raised. On the topic of climate change, CNSC staff noted:

CNSC staff are currently undertaking a pilot project with the Pickering Nuclear Site Environmental Protection Review Report (EPRR) to incorporate a new section dedicated to climate change. This initiative is in response to the growing interest and concern about climate change among intervenors. Furthermore, CNSC staff are open to and welcome any feedback on this new section, as it will help us improve and refine future EPRRs, which

²⁸ Linnerud, K., Mideksa, T. K., & Eskeland, G. S. (2011). The impact of climate change on nuclear power supply. *The Energy Journal*, 32(1).

²⁹ Linnerud, K. et al.

³⁰ International Atomic Energy Agency (2023, 12 October). *Impact of Climate Related Hazards on the Safety of Nuclear Installations: Experts Discuss*, online: <https://www.iaea.org/newscenter/news/impact-of-climate-related-hazards-on-the-safety-of-nuclear-installations-experts-discuss>

³¹ Lin, H., Zhang, S., Cao, R., Yu, S., Bai, W., Zhang, R., ... & Zhang, X. (2023). A review on the risk, prevention and control of cooling water intake blockage in coastal nuclear power plants. *Nuclear Engineering and Technology* (in-print)

are reviewed and revised every five years or earlier. The Pickering EPRR is expected to be published on the CNSC external website in early 2024.³²

The intervenor would have liked to see a discussion of this new section of the Pickering Nuclear Site Environmental Protection Review Report within the ROR. However, the 2023 ROR does not make any mention of climate change. Once again, we note that in the ROR, overall there is a significant gap in addressing the increased risks to nuclear plant operations and safety as a result of the impacts of climate change and the development of adaptive strategies. We once again **recommend** that the ROR should have dedicated sections for specific reactors and respective climate change risks and related adaptation strategies along with an overview of these power plants.

Recommendation

18. Have dedicated sections in Regulatory Oversight Reports for specific reactors and respective climate change risks and related adaptation strategies along with an overview of these power plants.

K. KI Pill Distribution

In addition to the absence of discussing climate change in this year's ROR, CELA notes an absence of discussion surrounding potassium iodide ("KI" pill) distribution within the ROR. According to the Supplementary CMD to the 2022 ROR,

The PNERP update will undergo a public review period led by EMO, at which time the CNSC will coordinate meetings with the KI Pill Working Group and the Advisory Committee to discuss the update and potential comments from the public review. At this time, the CNSC understands the PNERP update is expected by the end of 2024.³³

Unfortunately, this year's ROR does not provide any update on the PNERP's progress. CELA reiterates that adequate distribution of KI pills 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; however it has not met in some time. CELA **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

³² Canadian Nuclear Safety Commission, *Supplemental CMD*, CMD 23-M36.B (6 December 2023), page 4 [**Supplemental CMD to the 2022 ROR**]

³³ Supplemental CMD to the 2022 ROR, page 5

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

19. 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.
20. KI distribution requirements and updates from the KI Pill Working Group be discussed at the upcoming Commission Meeting and integrated into this ROR.

L. Status of Issues, Concerns and Requests from Intervenors (Appendix D)

Appendix D in the ROR provides an overview of the issues raised in the interventions in relation to the previous year's ROR. Under section D2, the ROR discusses the key thematic categories raised in public interventions.³⁴ CELA submits this information is valuable for both Commission Members and the public to see the trending concerns that arise in an ROR. CELA **submits** that to improve the dissemination of information, the ROR would greatly benefit from providing a detailed breakdown of the issues raised by all Intervenors, and how they have been answered or responded to should be provided in RORs annually in a disposition chart or table of action taken and underway.

CELA **recommends** that rather than providing this information in a separate document, as seen in CMD 23-M36.B – Supplementary submission from CNSC Staff – 2022, this information should be directly within the ROR—even if included within an appendix. Doing so would make this information much more accessible to the public, and especially to those who are new to reviewing RORs.

Recommendation

21. The ROR would greatly benefit from providing a detailed breakdown of the issues raised by all Intervenors, and how they have been answered or responded to should be provided in RORs annually in a disposition chart or table of action taken and underway.

³⁴ ROR 2023, page 165

III. CONCLUSION

We respectfully provide these comments to assist the Commission in its review of the *Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2023*.

Sincerely,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION



Sara Libman, Legal Counsel

Appendix 1

Summary of Recommendations

- 1 Intervenor who provide comments on an ROR should have an opportunity to present orally before the Commission.
- 2 The ROR should provide a description of each type of inspection and what they entail, e.g., Type I inspection, Type II inspection, desktop inspection, and field inspection.
- 3 Further details and insight surrounding Type I inspections are requested. For instance, what triggers this type of inspection; how frequently do NPGS tend to undergo these inspections; and is there a specific SCA that tends to be the focus of these inspections.
- 4 Details about the Type I inspection at Bruce are requested: what triggered it, and what was the outcome of the inspection?
- 5 At the Commission meeting there should be a discussion surrounding the corrective actions to address Darlington's non-compliance for the Management System SCA, and elaborate on what corrective measures are not working, and what is being proposed to effectively address this issue.
- 6 The measures set in place by NB Power to address human performance non-compliance should be discussed at the Commission meeting, and discuss how other NPGS are ensuring human performance is not compromising health and safety for workers, the public, and the environment.
- 7 The non-compliance with Operating Performance at Pickering resulting in a medium safety significance event occurring needs to be discussed in great detail at the Commission meeting. There needs to be transparency with the public to understand how this event occurred, and why safe operating envelope requirements were violated, and how long was the reactor building temperature not reflecting the limits set within the SOE.
- 8 OPG should explain why the number of trips and setbacks have increased, and whether Pickering is at risk of exceeding industry rates in the future, i.e., is the number of trips and setbacks expected to continually rise of the course of Pickering's licencing period.
- 9 The ECI system exceeding the APU target at Darlington should be discussed in greater detail at the Commission meeting, with the Commission discussing what the level of risk was that arose from this incident, what was done to rectify the issue, and what is being done to prevent it from happening again.

- 10 The Commission should take this event into consideration when reviewing OPG's application for a licence to construct a small modular reactor at the Darlington site.
- 11 The CNSC needs to discuss medium safety significance event in the maintenance specific area for the fitness for service SCA at Pickering in detail at the Commission meeting, determining: why engineers were not performing routine field walkdowns (e.g., was this a staffing issue, or a complacency in the workplace issue); how often were these walkdowns occurring; what could have happened as a result of routine field walkdowns not occurring; what was the expected frequency of these routine field walkdowns; and why does Pickering seem to have an issue with proper record keeping.
- 12 The unplanned internal intake of tritium oxide at Pickering should be discussed in greater detail at the Commission meeting. In particular, we seek clarification on how and why this event occurred, and what OPG implemented in its corrective actions to prevent a reoccurrence.
- 13 The Action Level exceedance of tritium oxide at Darlington needs to be discussed in greater detail at the Commission meeting to determine the following: what caused the release; where the release occurred; how the Action Level exceedance was dealt with; and what is being done to prevent this from happening again in the future.
- 14 More details should be discussed regarding the environmental action level exceedance for gross beta/gamma in sewage that occurred at Pickering. OPG should provide the following information at the Commission meeting: when did this event occur; how much gross beta/gamma was released in sewage; how did this event happen; and what were the corrective actions taken to prevent recurrence?
- 15 The CNSC review OPG's overall approach to compliance with Emergency Management and Fire Protection SCA, and how they intend to prevent instances of non-compliance at all the sites OPG is responsible for.
- 16 From a best practices perspective, the Darlington PA systems should have been undergoing routine maintenance to ensure they are functioning, rather than an action plan arising from a reactive field inspection. OPG should explain why the PA system at Darlington was not maintained and upgraded in a timely manner.
- 17 Clarification is needed on why the Emergency Management and Fire Protection SCA non-compliance events at WWMF were only deemed to be low-safety significance, as from the public's perspective, these incidents could have easily resulted in severe consequences in the result of a fire. CELA requests more details on these incidents, especially how long had these conditions been in place before being noticed at an inspection.

- 18 Have dedicated sections in Regulatory Oversight Reports for specific reactors and respective climate change risks and related adaptation strategies along with an overview of these power plants.
- 19 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.
- 20 KI distribution requirements and updates from the KI Pill Working Group be discussed at the upcoming Commission Meeting and integrated into this ROR.
- 21 The ROR would greatly benefit from providing a detailed breakdown of the issues raised by all Intervenors, and how they have been answered or responded to should be provided in RORs annually in a disposition chart or table of action taken and underway.