Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

CMD 26-H104.13

Date: 2026-05-12

Written Submission from the Canadian Environmental Law Association

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

In the matter of

À l'égard du

Bruce Power

Bruce Power

Application to amend the licensing basis for Bruce A and B nuclear generating stations to increase reactor power limits

Demande visant à modifier le fondement d'autorisation des centrales nucléaires de Bruce-A et B afin d'augmenter les limites de puissance des réacteurs

Hearing in Writing

Audience par écrit

July 2026

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Canada

Canadian Environmental Law Association
EQUITY. JUSTICE. HEALTH.

SUBMISSION BY The CANADIAN ENVIRONMENTAL LAW ASSOCIATION TO The CANADIAN NUCLEAR SAFETY COMMISSION

Comments on Bruce Power's application to amend the licensing basis for Bruce A and B nuclear generating stations to increase reactor power limits

(Ref. 2026-H-104)

May 12, 2026

Prepared by:
Sara Libman, Legal Counsel to CELA

May 12, 2026

Sent by email interventions@cnsc-ccsn.gc.ca

Senior Tribunal Officer, Secretariat
Canadian Nuclear Safety Commission
280 Slater Street,
P.O. Box 1046, Station B
Ottawa, Ontario K1P 5S9

Dear Sir or Madam:

Re: Submission of Canadian Environmental Law Association reviewing Bruce Power's application to amend the licensing basis for Bruce A and B nuclear generating stations to increase reactor power limits (Ref. 2026-H-104)

The Canadian Environmental Law Association ("CELA") has enclosed its written intervention providing comments on Bruce Power's application for a licensing basis amendment to increase its reactor power limits (including the associated channel and bundle power limits) to authorize operation at 95.5% full power for Bruce A and 96.0% full power for Bruce B.

Please find below our submission for your review.

By this letter, and pursuant to the CNSC's *Rules of Procedure*, CELA requests status to participate as an intervenor in the public hearing based in writing through the provision of this written intervention.

Sincerely,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION

Sara Libman
Legal Counsel to CELA

I. INTRODUCTION

This submission is filed in response to the Canadian Nuclear Safety Commission's ("CNSC") Notice of Hearing in Writing and Participant Funding dated November 10, 2025 in respect of the CNSC conducting a hearing in writing on Bruce Power's application to amend the licensing basis for Bruce A and B nuclear generating stations to increase reactor power limits. A decision from the Commission is anticipated in July 2026.[1]

II. INTEREST AND EXPERTISE

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, including projects proposed by Bruce Power. CELA also has an extensive library of materials related to Canada's nuclear sector which is publicly available on our website.[2]

III. BACKGROUND

On August 19, 2025, Bruce Power submitted a request to the CNSC seeking approval to increase the current reactor power levels for the Bruce A and Bruce B nuclear generating stations, located in the Municipality of Kincardine, on the eastern shore of Lake Huron, on the traditional and treaty territory of the Saugeen Ojibway Nation, and the traditional harvesting territories of the Métis Nation of Ontario Region 7 and the Historic Saugeen Métis peoples.[3]

Currently, Bruce A NPGS currently operates at a maximum reactor power level of 92.5% full power (FP), while Bruce B NPGS currently operates at a maximum reactor power level of 93.0% FP. Bruce Power's application is requesting that the licensing basis of the power reactor operating licence be amended to allow Bruce A to operate at 95.5% FP and for Bruce B to operate at 96.0% FP. Bruce A and B have been operating at their current power levels since 2003 (Bruce A) and 2004 (Bruce B). They have not operated at 100% since 1993, when "reactor power for all units

[1] CNSC, "Notice of Hearing in Writing and Participant Funding" (Ref. 2026-H-104) online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD2026-H-104-NTC-ENG.pdf/object

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

[3] Notice of Hearing in Writing and Participant Funding

was temporarily reduced to 60% FP due to safety analysis-related concerns, particularly regarding Loss of Coolant Accident (LOCA) scenarios."[4]

Bruce Power established Project 2030 (P2030) to increase reactor power for refurbished units, as part of an initiative to increase the total electrical output from Bruce A and B.[5] This project was established in 2021, and in order for a power uprate, the safety analyses must demonstrate that there will be adequate safety margins; and that the design and operating margins are improved as required by the results of the safety analysis.[6] Project 2030 consists of a two-step approach to demonstrate adequate safety margins:

> Step 1: Demonstrate that safety margins are acceptable for operation up to the IPLs, defined as 95.5% FP for Bruce NGS A and 96% FP for Bruce NGS B.
>
> Step 2: Demonstrate that safety margins support operation of both Bruce NGS A and B units up to 100% FP.

This hearing in writing is concerned with Step 1 of Project 2030, with Bruce Power requesting the increases of 95.5% FP for Bruce A and 96.0% FP for Bruce B.[7]

IV. SCOPE OF REVIEW

CELA received participant funding to review the Bruce Power's licence amendment application, including CNSC and Bruce Power Commission Member Documents, and conduct legal/technical analysis focusing on areas of interest within the scope of Bruce Power's application.

This intervention is directly relevant to the Commission's duty under section 24(4) of the *Nuclear Safety and Control Act* (NSCA) to ensure the adequate protection of the environmental and human health.[8] CELA's findings and recommendations, below, aim to advance the objectives of the Commission and are directly relevant to this licensing basis amendment. CELA's review also recommends how the CNSC, enabled by section 24(4) of the *NSCA,* can incorporate principles of international environmental law, such as the precautionary principle, in its review of Bruce Power's application to increase its reactor power limits for Bruce A and B.

For this written submission, CELA has reviewed CNSC regulatory oversight reports, relevant international reports and standards associated with radioactive materials and nuclear safety,

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[4] CNSC, "CNSC Staff Submission Bruce Power's Request to Increase Reactor Power Limits" CMD 26-H104, at p 4 **[CNSC Staff CMD]**

[5] CNSC Staff CMD, at page 1

[6] CNSC Staff CMD, at page 5

[7] CNSC Staff CMD, at page 5

[8] *Nuclear Safety and Control Act*, SC 1997, c 9 **[NSCA]**

academic reports and studies concerning human health and environmental effects, and other CNSC policies and regulatory provisions.

V. FINDINGS

Following its review of Bruce Power's application, CNSC Staff make the following recommendation to the Commission:

> […] **Approve Bruce Power's request** and accept CNSC staff recommendations to establish a Regulatory Hold Point (RHP) and delegation of authority. Given that there are a number of activities, completion of which can only be verified as the project progresses closer to the power increase, CNSC staff propose that the Commission **establish a RHP under Licence Condition (LC) 15.5 to track completion of items** associated with gaining assurance of Bruce Power's operational readiness prior to implementing the proposed power uprate in any unit.[9]

After reviewing the publicly available submissions by CNSC staff and Bruce Power, the intervenor submits there is too much uncertainty surrounding power uprates for Bruce A and B. For the reasons below, the intervenor submits the Commission should **not** approve Bruce Power's request to increase the reactor power limit of Bruce A to 95.5% FP and the reactor power limit of Bruce B to 96.0%.

The intervenor submits there are health and safety concerns, as well as environmental impact concerns that arise from increasing the power limits at Bruce NPGS, and in the interest of complying with section 24(4) of the *NSCA*, the Commission must carefully scrutinize the risks associated with this application.

The intervenor **recommends** that Regulatory Hold Points (RHP) be established for Bruce Power to resolve, and upon closing all RHPs, a new public hearing—in the form of an in-person hearing—take place to re-assess Bruce Power's request to increase the reactor power limits at Bruce A and B.

(a) Precautionary Principle

The precautionary principle requires a cautionary approach in which a decision-maker presented with evidence that an activity is likely to cause irreversible harm to the environment is obligated

[9] CNSC Staff CMD, at page 2, *emphasis added*

to prevent or terminate the activity.[10] This principle of international environmental law has also been adopted into Canada's application of environmental law, as held by the Supreme Court of Canada in its seminal 2001 decision in *SprayTech*:

> The interpretation of By-law 270 contained in these reasons respects international law's "precautionary principle", which is defined as follows at para. 7 of the Bergen Ministerial Declaration on Sustainable Development (1990):
>
> > In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.[11]

As such, there is a positive duty on the CNSC to ensure the activities it licences do not cause unacceptable or irreversible harm to the environment.[12] For the 2015 public hearing to renew the reactor operating licence for the Bruce NPGS A and B, we had submitted:

> Operating reactors beyond their original anticipated design lives violates the precautionary principle, basic principles of the rule of law, and the implicit agreement the public entered into with NPPs when these facilities were originally built. Public protective laws should not be bent for present expediency in any event, but especially not in an instance when doing so would expose the public to an enhanced risk in an already high-risk industry that the public did not contemplate when it first approved of the Bruce plant and other nuclear facilities.[13]

The intervenor maintains this position, and notes that the precautionary principle must be applied to the licence application. Bruce NPGS A and B have been operating at their current power limits for over 20 years, and in that time, the reactors have aged and have been subject to equipment failure, such as the hydrogen equivalent (Heq) limit exceedances from the pressure tubes of Units 3 and 6 in 2021.

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[10] Cameron J and Abouchar J, "The precautionary principle: a fundamental principle of law and policy for the protection of the global environment" (1990) 14:1 Boston College International and Comparative Law Review at page 3, online: https://lira.bc.edu/works/publication-article/xs5ge-tq903 **[Cameron & Abouchar].**

[11] *114957 Canada Ltee (Spray-Tech) v Hudson (Ville)*, 2001 SCC 40 (CanLII) at para. 31.

[12] Cameron & Abouchar at page 22

[13] CELA, "Canadian Environmental Law Association: Review and Submissions on Bruce A and B Reactor Relicensing and the Emergency Management Regulatory System" April 7, 2015, online: https://cela.ca/wp-content/uploads/2019/07/Hearing_2015-H-02-CELA_Submissions_to_CNSC_re_Bruce_Power_Relicensing.pdf at page 72

While Bruce Power has been implementing refurbishment activities for Bruce A and B, this licence amendment application has been brought forward before refurbishment has been completed. By asking for increases to the reactor power limits before ensuring all equipment and infrastructure has been adequately and safely refurbished, Bruce Power is suggesting that the Commission simply trust the NPGS can handle the increases before all reactor updates have been completed. The Major Component Replacement project for all Bruce units is only estimated to be completed in 2033 (and the operating licence expires on September 30, 2028).[14]

Even the CNSC Staff CMD points out the uncertainty surrounding the application: "Bruce Power cannot implement some of the P2030 changes until Commission approval is granted and subsequently, the project is progressed to a stage closer to the implementation of the power uprate. Therefore, CNSC staff can only verify several items, such as design changes, and updates to operating and training procedures, at a time closer to the power uprate."[15]

Approving a power limit increase in order to implement the changes to operate at an increased power limit is contrary to the precautionary principle. The intervenor submits the Commission must assess this application through a precautionary principle lens. In doing so, the Commission should find that approving this licence application puts human health and the environment at risk.

The intervenors further submit that requesting a 3% power limit increase for both Bruce A and B is excessive, especially when the fact that the NPGS has been operating at the same levels for over 20 years. In 2011, the International Atomic Energy Agency (IAEA) published "Power Uprate in Nuclear Power Plants: Guidelines and Experience" to provide information and guidance on increased power levels at nuclear power facilities.[16] According to this publication, there should be a very deliberate ascension plant for a power uprate:

> Significant emphasis has also been placed on establishing a very deliberate power ascension plan that contains numerous 'plateaus' between the previous 100% reactor power and the new, uprated 100% reactor power. Each power level change **should** be an approximate one and a half per cent increase in reactor thermal power. The plateaus typically range between 2 and 5%. The power ascension plan would require operation at each plateau for various lengths of time. The duration at each plateau would be established based on both the absolute power level and the plant response at the plateau power level (e.g. vibration, noise levels, other indications).[17]

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[14] CNSC Staff CMD at page 6, and CNSC, "Bruce A and B Nuclear Generating Stations (online): https://www.cnsc-ccsn.gc.ca/eng/reactors/power-plants/bruce-nuclear-generating-station/

[15] CNSC Staff CMD at page 10

[16] IAEA, "Power Uprate in Nuclear Power Plants: Guidelines and Experience" Vienna 2011, online: https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1484_web.pdf

[17] IAEA at page 21

Because Bruce A and B have not experienced an increase in power limits in over two decades, the intervenors submit that it is inappropriate for Bruce Power to seek an increase of more than 1.5%; in this application, Bruce Power is seeking 3% increases for both Bruce A and B. While this is between that typical range of 2-5% mentioned by the IAEA, the intervenor submits the above mentioned recommendation of "each power level change should be an approximate one and a half percent increase" should be followed in the case of the Bruce Power requesting an increase for its NPGS. While the intervenor maintains the position that increase in power limits for these reactors should **not** be granted, taking a more precautionary approach to requested power uprates is a more responsible way to assess the risks to human health and the environment.

> **Recommendation No. 1:** The Commission must apply the precautionary principle to the assessment of Bruce Power's application to increase reactor power limits for Bruce A and B.

> **Recommendation No. 2:** Any request for a power level change to a nuclear power plant should not exceed a one and a half percent increase in reactor thermal power.

(b) Public Transparency

i. Use of a Hearing in Writing

The intervenor submits the use of a hearing in writing to consider the increase in a nuclear power generating facility's power limits is inappropriate and is contrary to the public interest. For a hearing in writing, the public is generally permitted to provide written submissions, and the CNSC may provide participant funding to assist Indigenous Nations and communities, members of the public and interested parties to review hearing documents and prepare submissions. Once a member of the public submits their written intervention however, that is end of the public participation process. The public does not have the opportunity to hear any discussion surrounding interventions, and cannot provide oral submissions to help bring clarity to issues before the Commission.

A hearing in writing consists of the Commission reading through documents on the record, and writing up a decision shortly after. These hearings move quicker than a full public hearing, and are administrative in nature. While a hearing in writing may seem appropriate for small changes to licencing conditions, more often than not, these types of hearings preclude the public from having a full understanding of what potential risks and impacts are being weighed by the Commission when they deliberate a licensee's application.

A hearing in writing is more likely to go unnoticed in the public eye, compared to a public hearing that is held in person, or even remotely, as there is less outward-facing planning for it (e.g., there is no venue selected within the affected host community). As a result, it is less likely that members

of the public are aware that there is a hearing in writing scheduled, and that they are entitled to voicing concerns through a written submission.

Additionally, CNSC staff noted in their submission, the participant funding program was only utilized by two groups/organizations: CELA, and Saugeen Ojibwe Nation.[18] At the time of this submission being drafted, there are no written comments from members of the public.

As previously stated, the application before the Commission is requesting a significant change to the operations at Bruce A and B, and is setting up these reactors to increase their full power to 100% in the future, in accordance with Bruce Power's Project 2030. The intervenors submit an in person hearing would be more appropriate for this application, to promote public transparency and adequate public participation. This would have enabled more members of the public to express concerns and raise questions that would shape the Commission's perspective of the potential impacts associated with increasing Bruce A and B's reactor power limits. The intervenors submit hearings in writing should not be the default for licence basis amendments, and there must be a consideration of how the public will be impacted by the use of a hearing in writing.

> **Recommendation No. 3:** The use of a hearing in writing to consider the increase in a nuclear power generating facility's power limits is inappropriate and is contrary to the public interest.
>
> **Recommendation No. 4:** Hearings in writing should not be the default for licence basis amendments, and there must be a consideration of how the public will be impacted by the use of a hearing in writing.

ii. Confidentiality Requests

One of the hearing documents posted on the CNSC website is a "Request for Confidentiality" by Bruce Power, request two documents be completely subject to confidentiality:

- *NK21-REP- 03600-00058 R001, Bruce A Integrated Summary Report for P2030 Safety Analysis up to 95.5% FP; and*
- *NK29-REP- 03600-00057 R001, Bruce B Integrated Summary Report for P2030 Safety Analysis up to 96% FP.*[19]

[18] CNSC Staff Submission, (CMD 26-104), at page 60

[19] Bruce Power, "Request for Confidentiality of Material Submitted in Relation to Application to amend the licensing basis for Bruce A and B NGS to Increase reactor power limits CMD: 26-H104" March 31, 2026, online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD26-H104-1-BP-SUB-RFC.pdf/object **[Request for Confidentiality]**

According to the Request for Confidentiality, these two documents contain "technical information that Bruce Power consistently treats as confidential."[20] Bruce Power provided non-confidential summaries, which were based on the executive summaries and key analyses of the documents in question. CNSC staff approved the Request for Confidentiality, noting "CNSC staff agrees that the document involve information that is consistently treated as confidential by Bruce Power due to the rationale provided," and determined that the "proposed public summary is an accurate summary of the key conclusions found in the full version of the document."[21]

The intervenor is not satisfied with the outcome of this request for confidentiality. Firstly, the intervenor submits the rationale for excluding the documents in their entirety should not warrant complete censorship of these safety analysis documents. We note that one of the powers mandated to the CNSC through section 21(1)(e) of the *Nuclear Safety and Control Act*, the CNSC may, in order to attain its objects, "*disseminate objective scientific, technical and regulatory information to the public concerning the activities of the Commission and the effects, on the environment or on the health or safety of persons, of the development, production or use of nuclear energy or the production, possession or use of a nuclear substance, prescribed equipment or prescribed information.*"[22] There is an expectation for transparency and public disclosure to be hallmark in the Commission's regulatory process, and its goal of maintaining public trust.

In previous interventions before the Commission, the intervenor has expressed that there is an expectation for the Commission to stringently scrutinize any requests for confidentiality and limit it to only matters truly prejudicial to security.[23] According to Bruce Power, "some of the information may meaningfully inform the design, operation and/or maintenance of a nuclear reactor, and therefore may be considered controlled nuclear information, pursuant to Part A.4 of the Nuclear Non- Proliferation Import and Export Control Regulations."[24] We acknowledge the importance of protecting nuclear security measures, however with documents pertaining to safety measures, an entire document should not be withheld from public view.

Bruce Power alleges "as the remaining content of the document is highly technical, there is no public interest in the disclosure of the remaining Bruce Power confidential information."[25]

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[20] Request for Confidentiality, at page 3

[21] CNSC, "CNSC Staff's Review of Bruce Power's Request for Confidentiality in Relation to Reference Documents of its application for authorization to increase the reactor power limits for the Bruce A and B (CMD 26- H104)" (Memorandum), online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD26-H104-1-A-CNSC-RFC-MEM-ENG.pdf/object, at page 3 [**Memorandum**]

[22] *NSCA* at s 21(1)(e)

[23] See: DNA, SHA & CELA, "Comments on Ontario Power Generations' Application for a Licence to Construct a Small Modular Reactor for the Darlington New Nuclear Project" CMD 24-H3.84 (November 12, 2024), online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD24-H3-84.pdf/object at page 6

[24] Request for Confidentiality, at page 2

[25] Request for Confidentiality, at page 2

Respectfully, we submit it is not up to Bruce Power to decide what information has public interest, especially with regard to information that may be technical in nature.

The intervenor notes that safety analysis reports are of high interest to the public, and when reviewing the summaries provided by Bruce Power for the two documents in question, they lack sufficient detail for thoroughly analyzing the processes in the safety analyses. While the summaries may provide an "accurate summary of the key conclusions,"[26] they lack the depth needed to closely consider the safety of increasing the power limits of Bruce A and B. The intervenor submits the two safety analysis documents should have been released in a redacted format; even if that means large portions of the document are redacted.

The intervenor **recommends** that in the interest of effectively disseminating objective scientific, technical, and regulatory information to the public for this application for a licence to construct, the Commission should stringently assess these requests with a lens of upholding public transparency. Rather than excluding entire documents, redacting content may be more appropriate, and that technical information, especially information related to safety and emergency planning, should **not** be made confidential.

> **Recommendation No. 5:** In the interest of effectively disseminating objective scientific, technical, and regulatory information to the public for this application for a licence to construct, the Commission should stringently assess these requests with a lens of upholding public transparency. Rather than excluding entire documents, redacting content may be more appropriate, and that technical information, especially information related to safety and emergency planning, should not be made confidential.

(c) Reviewing Recent Inspection Findings and Updates on Major Component Replacement Procedures

i. SCA Compliance

When assessing whether allowing an uprate in power levels at Bruce Power would contravene section 24(4) of the NSCA, the Commission must consider compliance with CNSC Safety and Control Areas (SCAs). The intervenor reviewed the *Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2024*[27] (2024 ROR) to consider Bruce Power's compliance with SCAs and other CNSC regulations. As discussed below, there are a number of issues arising from the 2024 ROR that raise concerns about the safety of Bruce NPGS.

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[26] CNSC Memorandum at page 2

[27] CNSC, Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2024 (CMD 26-M5) [**2024 ROR**]

For instance, in 2024, Bruce NPGS underwent 80 inspections (1 Type 1 inspections; 19 Type 2 inspections; 2 desktop inspections; and 58 field inspections), resulting in a total of 427 findings related to SCA compliance. Of these findings, 326 were compliant, meaning 101 were non-compliant with SCAs.[28] Despite nearly one quarter of these findings from CNSC staff inspections being non-compliant, Bruce NPGS received satisfactory ratings across all 14 SCAs. The table below provides an overview of the findings from CNSC staff inspections, indicating the rating of each finding for each SCA. The intervenor has highlighted SCAs in the table with notable non-compliance findings (Management System, Human Performance, Conventional Health and Safety, and Emergency Management and Fire Safety). While 78 of the findings were "negligible", the intervenor notes these findings were still not compliant with SCA standards, and are worth considering from a cumulative compliance lens.

SCA	Low Significance	Negligible Significance	Compliant
Management System	2	25	110
Human Performance	8	5	56
Safety Analysis	0	0	3
Operating Performance	0	5	29
Physical Design	2	0	3
Fitness for Service	3	5	46
Radiation Protection	0	9	29
Conventional Health and Safety	5	16	11
Environmental Protection	0	0	8
Emergency Management and Fire Protection	1	10	16
Waste Management	0	3	1
Security	2	0	7
Safeguards and Non-Proliferation	0	0	6
Packing and Transport	0	0	1

For the Management System SCA, the 2024 ROR notes that "the non-compliant findings were primarily associated with record completeness and document control."[29] Interestingly, when compared with the findings from the 2023 ROR, Bruce NPGS had a worse compliance rating in 2024 than in 2023: 2023 saw 2 findings of low significance, 15 of negligible significance, and 96 compliant findings.[30] Regardless that the non-compliant finding were associated with record and document keeping, the intervenor submits these types of findings are reflective of the work culture

[28] 2024 ROR at page 73
[29] 2024 ROR at page 76
[30] CNSC, Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2023 at page 78 [**2023 ROR**]

at Bruce Power, as a relaxed approach to maintaining records may trickle into other responsibilities at the site, which could ultimately cause safety concerns.

The Human Performance Management SCA also had worse compliance in 2024 than in 2023 (2023 reported 1 low, 7 negligible, and 46 compliant).[31] The 8 low and 5 negligible findings were "related to personnel training, personnel certification and the human performance program."[32]

Conventional Health and Safety also saw a decline in compliance in 2024. In 2023, the compliance findings were 12 negligible and 11 compliant,[33] while 2024 resulted in 5 low, 16 negligible and 11 compliant findings. For this SCA, the 2024 ROR noted that "CNSC staff continued to follow up on a NNC related to a decreasing trend in housekeeping identified during the quarterly field inspections."[34]

As for the Emergency Management and Fire Protection SCA, the 2023 ROR reported 2 negligible findings and 11 compliant findings,[35] which is quite the contrast to 2024's 1 low, 10 negligible and 16 compliant findings. The 1 low safety significance finding was the result of emergency drill field inspections by CNSC staff which identified "related to Bruce Power's ability to perform effective and sustained intervention within 15 minutes of being notified of a fire incident."[36]

Based on the overview of these SCA non-compliant findings for 2024, the intervenor submits the Commission must carefully consider and assess how the record keeping and administrative duties at Bruce NPGS could cumulative effect safety practices. With compliance with SCAs seemingly declining in 2024 from 2023, these small incidents add up, and point to a work culture that minimizes the importance of administrative actions that end up being connected to worker safety, emergency planning, and site management. The intervenor recommends the Commission consider SCA non-compliances—even those of low or negligible safety significance—with a cumulative lens to assess whether there is a safe work culture at Bruce Power. With a potential for power level uprate at Bruce NPGS, there **must** be a safe work culture that maintains and strives for adequate record-keeping, personnel training, and emergency readiness.

> **Recommendation No. 6:** The Commission must consider SCA non-compliances—even those of low or negligible safety significance—with a cumulative lens to assess whether there is a safe work culture at Bruce Power. With a potential for power level uprate at Bruce NPGS, there **must** be a safe work culture that maintains and strives for adequate record-keeping, personnel training, and emergency readiness.

[31] 2023 ROR at page 79
[32] 2024 ROR at page 77
[33] 2023 ROR at page 89
[34] 2024 ROR at page 87
[35] 2023 ROR at page 91
[36] 2024 ROR at page 89

ii. System Design

The CNSC Staff Submission notes that Bruce Power has an established Engineering Change Control (ECC) process to govern design changes, and that this process was subject to a Type II inspection in September 2025:

> CNSC staff conducted an inspection of the ECC programs which sampled P2030 engineering changes. CNSC staff observed that the engineering changes were primarily in the preliminary design phase and Bruce Power continues to progress them through their ECC process as the P2030 project evolves.[37]

The CNSC Staff Submission goes on to discuss Bruce Power's use of a Hazard and Operability Study (HAZOP)/System Assessment to perform a confirmatory assess in addition to the ECC process to identify the scope of the modifications required for P2030.[38] CNSC Staff note:

> CNSC staff have reviewed the information provided by Bruce Power and have identified potential concerns regarding the governance for the system assessment/HAZOP process and its interface with the Bruce Power ECC process. Given that the system assessment is an additional measure that is not a regulatory requirement, CNSC staff note that the ECC process is sufficient to ensure that all SSCs will be able to function safely within their design parameters under all operating states.[39]

This discussion of the management system in the context of P2030 is riddled with uncertainty, and from the public's perspective, the safe operation of the nuclear facility components currently undergoing/slated for refurbishment cannot be determined from looking at the ECC program's changes being in the "preliminary design phase." The intervenor submits the evolution of P2030 brings too much uncertainty to determine whether power uprate is a safe option for a site undergoing engineering changes.

Further, the intervenor submits the Commission should consider the potential concerns regarding the governance system assessment/HAZOP process and its interface with the Bruce Power ECC process, as noted by CNSC Staff. The concerns are not elaborated on within the CNSC Staff Submission, and so the intervenor is not able to provide commentary on these concerns. Additionally, despite the fact that the system assessment is an additional measure and not a regulatory requirement, because Bruce Power is utilizing this system assessment in its analyses,

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[37] CNSC Staff Submission at pages 14-15, *emphasis added*
[38] CNSC Staff Submission at page 32
[39] CNSC Staff Submission at page 32, *emphasis added*

the Commission should include an evaluation of it within the determination of whether Bruce Power is equipped to increase the power level limits for Bruce A and B.

Finally, the intervenor submits that while Bruce NPGS is undergoing major component replacement procedures for refurbishment, the Commission will not be able to determine whether Bruce Power will be able to safely operate its reactors at an increased power rate, especially when there is an evolutionary (i.e., unknown) element to P2030.

> **Recommendation No. 7:** the Commission should consider the potential concerns regarding the governance system assessment/HAZOP process and its interface with the Bruce Power ECC process, as noted by CNSC Staff.
>
> **Recommendation No. 8:** despite the fact that the system assessment is an additional measure and not a regulatory requirement, because Bruce Power is utilizing this system assessment in its analyses, the Commission should include an evaluation of it within the determination of whether Bruce Power is equipped to increase the power level limits for Bruce A and B.
>
> **Recommendation No. 9:** while Bruce NPGS is undergoing major component replacement procedures for refurbishment, the Commission will not be able to determine whether Bruce Power will be able to safely operate its reactors at an increased power rate, especially when there is an evolutionary (i.e., unknown) element to P2030.

iii. Fitness for Service

In the discussion of fitness for service, the CNSC Staff Submission highlights concerns surrounding aging components and an increase in power limits:

> Bruce Power has not submitted the results of their review of the program and procedure documentation to support their conclusions summarized above, but has conducted a system- by-system review of potential impacts of the proposed power increase considering the effects on component aging. The general conclusion was that the increase in reactor power can increase the rate of aging of some components, which would result in some components reaching the end of their expected end of operating life at an earlier calendar date and may require an increase in the frequency of inspection and maintenance activities. It is also possible that some of the design review activities may generate conclusions that could impact fitness for service program activities. However, CNSC staff acknowledge that program changes can be managed within the current regulatory framework for the Fitness for Service SCA.[40]

[40] CNSC Staff Submission at page 36, *emphasis added*

The intervenor is concerned about the extra strain on aging components within Bruce A and B should there be a power increase. An increase in the frequency of inspections and maintenance activities would be a reactive, rather than a proactive/preventative, approach to preventing potential harm to human health and the environment due to aging component failures. CELA disagrees with the finding that the program changes could be managed within the current regulatory framework for the fitness for service SCA, and submits while both Bruce A and B are undergoing refurbishment, an increase in reactor power should not be permitted within the context of the precautionary principle.

Considering previous issues with aging components at Bruce NPGS, like the issue of pressure tubes exceeding hydrogen equivalent (Heq) limits under the current reactor power limits, the intervenor is concerned about the rate of component aging that could occur with an increased power rate. With the knowledge that increasing the power limits can rapidly age reactor components, the Commission should not allow Bruce A and B to undergo reactor power uprates.

> **Recommendation No. 10:** While both Bruce A and B are undergoing refurbishment, an increase in reactor power should not be permitted within the context of the precautionary principle.

> **Recommendation No. 11:** Considering previous issues with aging components at Bruce NPGS, like the issue of pressure tubes exceeding hydrogen equivalent (Heq) limits under the current reactor power limits, the intervenor is concerned about the rate of component aging that could occur with an increased power rate. With the knowledge that increasing the power limits can rapidly age reactor components, the Commission should not allow Bruce A and B to undergo reactor power uprates.

iv. Major Component Replacement Procedures

When reviewing the 2024 ROR, there was a troubling note surrounding the major component replacement (MCR) process from a safety perspective:

> Due to observations at the beginning of Unit 3 MCR, CNSC staff raised Action Item 2023-07-30964 to address a trend of events in the area of contractor safety performance. In 2024, Bruce Power demonstrated that corrective actions had been taken, they were shown to be effective and had been implemented in governance to sustain the improved performance during future MCRs. This Action Item has been closed and CNSC staff continue to monitor this area.[41]

[41] 2024 ROR at page 75

While the intervenor is relieved that corrective actions were taken, we note the recurring theme of safety performance at Bruce Power. While this incident involved contractor work for the MCR initiative (rather than Bruce Power employees), there is the concern that this NPGS lacks a work environment that closely monitors housekeeping and safety practices for all individuals working on site. The intervenor reiterates that the Commission must consider the safety work culture at Bruce NPGS when considering a power uprate for Bruce A and B.

> **Recommendation No. 12:** The Commission must consider the safety work culture for contractors and employees of Bruce NPGS when considering a power uprate for Bruce A and B.

v. Regulatory Hold Points

Bruce Power had 4 regulatory hold points (RHPs) in place for the return to service of each unit undergoing a Major Component Replacement (MCR) outage for which CNSC approval will be sought prior to proceeding to the subsequent commissioning phase. These hold points require regulatory verification to confirm operational readiness of the plant safety systems to satisfy regulatory requirements for staged progress through the commissioning phases up to full power operation.[42]

On May 6, 2026, the CNSC approved Bruce Power's request to release the second regulatory hold point (RHP-2), allowing the Guaranteed Shutdown State to be removed in Bruce A NGS Unit 3, following the Major Component Replacement outage.[43] On February 16, 2026, the first regulatory hold point [allowing fuel to be loaded in the Bruce A Unit 3 reactor, following the MCR outage] was removed.[44] CELA submits that until all RHPs are released by the CNSC, Bruce Power should not be seeking an increase in power limit. There should be a focus on ensuring Bruce Power can meet all the parameters of RHP-3 [1% Full Power – Phase C] and RHP-4 [35% Full Power – Phase D] to ensure there are consistently safe operations at Bruce A and B. The intervenor submits the Commission should deny the current application to increase power limits at Bruce A and B, and require Bruce Power to reapply for this increase only after all RHPs have been released.

As CNSC Staff have noted, "these hold points regulatory verification to confirm operational readiness of the plant safety systems to satisfy regulatory requirements for staged progress through the commissioning phases up to full power operation."[45] For this application, the CNSC Staff

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[42] "Bruce Nuclear Generating Stations A and B Licence Conditions Handbook" LCH-PR-18.04/2028-R005 (effective: March 4, 2025), at section 15.5 [**LCH]**

[43] CNSC, CNSC letter to Bruce Power regarding regulatory hold point 2 (Bruce A Unit 3), May 6, 2026, online: https://www.cnsc-ccsn.gc.ca/eng/reactors/power-plants/bruce-nuclear-generating-station/letter20260506/

[44] CNSC, CNSC letter to Bruce Power regarding regulatory hold point 1 (Bruce A Unit 3), February 16, 2026, online: https://www.cnsc-ccsn.gc.ca/eng/reactors/power-plants/bruce-nuclear-generating-station/letter20260216/

[45] CNSC Staff Submission at page 51

recommended that an RHP be established for "Operation Beyond 92.5% Full Power for Bruce A and 93% Full Power for Bruce B" and added to section 15.5 of the LHC, and to delegate the authority to remove this RHP to the Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch (EVP-CROO, ROB).[46]

The intervenor submits this RHP should be added to the LHC, and its removal should only be considered through a public hearing.

Bruce Power's P2030 will require:

> **…**design modifications that have to be implemented, documentation that has to be updated, such as SOE limits and conditions, and training that has to be completed prior to implementation of the power uprate. These changes will be implemented both while the units are online and during their planned outages. The first unit that Bruce Power intends to power uprate is Unit 6 after the completion of its planned maintenance outage in 2027.[47]

P2030 comes with too much uncertainty, and CNSC staff even state: "due to the nature of some activities, CNSC staff will not be able to verify that the changes have been completed in compliance with all applicable regulatory requirements and commitments until a later date that is closer to the completion of the work."[48] The intervenor submits that until compliance can be verified, the Commission should not be contemplating increasing the power rates for Bruce A and B. The return to service at Bruce Power must be proven to be stable and safe before an increase in reactor power—which would result in an increase in radioactive releases (to be discussed below)—be considered by the Commission.

> **Recommendation No. 13:** The Commission should deny the current application to increase power limits at Bruce A and B, and require Bruce Power to reapply for this increase only after all RHPs have been released.

> **Recommendation No. 14:** The proposed regulatory hold point for power uprate beyond 92.5% FP for Bruce A and 93% FP for Bruce B should be removed following a public hearing on the matter.

> **Recommendation No. 15:** The return to service at Bruce Power must be proven to be stable and safe before an increase in reactor power—which would result in an increase in radioactive releases (to be discussed below)—be considered by the Commission.

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[46] CNSC Staff Submission at pages 51 and 61
[47] CNSC Staff Submission at page 51
[48] CNSC Staff Submission at page 51, *emphasis added*

(d) KI Pill Distribution

When reviewing the materials for this application to increase the power level limits at Bruce Power, there is no discussion of one of many crucial elements of emergency planning for nuclear power generation: the availability of potassium iodide (KI) pills. KI is an effective blocker of thyroid radioiodine uptake and if ingested at the right time, can reduce the risk of thyroid cancer following an offsite release of radioactive molecules. The intervenor submits that with an increase in power limits for this reactor, the Commission must ensure that there is adequate safety measures in place for the communities surrounding Bruce Power.

Currently, residents that live within a 10 km radius of Bruce Power are given a supply of KI pills, and residents within a 50 km radius of Bruce Power have the opportunity to obtain the pills at participating pharmacies across the region.[49] For the Bruce A and B Reactor Relicensing Hearing in 2015,[50] as well as for the Bruce Power Refurbishment Hearing in 2018,[51] CELA expressed concerns about the distribution of KI pills across the region. While the Bruce Power website notes that it has provided all residents within 50 km an information packages on KI pills and a voucher for the tablets and encouraged to obtain them,[52] the current 10 km pre-distribution (governed by the current primary zone distance, which is arbitrary) excludes pre-distribution of KI pills to the residents of Kincardine. Once again, CELA recommends that KI pills should be pre-distributed to everyone within 50 km of the plant and selectively pre-distributed to vulnerable communities within 100 km.

CELA reiterates its recommendation from 2018 that Bruce Power be required to adopt Toronto's mechanism that allows people in the 50km area to order KI online via a joint City of Toronto-OPG site called "Prepare to be Safe".[53] The online Prepare to Be Safe site allows residents to enter their postal code and if located within the 50 km region, a link is provided to an online form where they can order KI pills. Within 6 weeks, KI pills are delivered to their mailbox. This online mechanism is much more accessible than having to arrange for a package of KI pills and physically pick them up at select locations, as is the current process outlined on the "Be Prepared Grey Bruce Huron" website.[54]

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[49] Be Prepared Grey Bruce Huron, "Potassium Iodide (KI) Distribution", online: https://www.bepreparedgreybrucehuron.com/ki-tablet-distribution/

[50] *See* CELA, "Bruce A and B Reactor Relicensing and the Emergency Management Regulatory System: Submission by the Canadian Environmental Law Association" (March 16, 2015), online: https://cela.ca/wp-content/uploads/2019/07/Hearing_2015-H-02-CELA_Submissions_to_CNSC_re_Bruce_Power_Relicensing.pdf

[51] *See* CELA, "Bruce Power's Proposed Life Extension and Refurbishment: Evaluating Emergency Preparedness and Environmental Protection" (April 16, 2018), online: https://cela.ca/wp-content/uploads/2019/07/1185LicRenBrucePwr.pdf

[52] Bruce Power, "Community Safety Guide, KI distribution enhancing emergency preparedness in Grey, Bruce and Huron", (March 20, 2025) online: https://www.brucepower.com/2025/03/20/community-safety-guide-ki-distribution-enhancing-emergency-preparedness-in-grey-bruce-and-huron/

[53] "Prepare to be Safe", online: http://www.preparetobesafe.ca/

[54] "Prepare to be Safe"

By facilitating the availability of KI in the 50 km region would allow Bruce Power to partially mirror what is already done in other jurisdictions who currently pre-distribute KI out to 50 km. For example, in Switzerland KI is distributed within 50km of each plant as a precautionary measure.[55] In 2016, Belgium's Superior Health Council recommended that "based on the experience of past accidents, the areas covered by the plan for sheltering, the distribution of stable iodine and evacuation [should] be extended to cover realistic distances.[56] We continue to encourage the CNSC to require licensees to provide KI by way of pre-distribution within a 50 km radius, and pre-stock to 100 km.

With this spring marking 15 years since the tragic Fukushima Daiichi nuclear disaster, having precautionary emergency measures in place is crucial. Regulators involved in the Fukushima incident have said publicly that the severe consequences of the accident at Fukushima, and the inability to protect people, were in large part due to the assumption by the regulators and the industry that such a large accident would never occur. That assumption resulted in a failure to put in place appropriate measures to respond to such an accident.[57] CELA maintains that the inadequate pre-distribution of KI pills is a major gap in emergency preparedness that should not be underestimated because there is an assumption that a major nuclear disaster could not possibly unfold in Canada. Increasing power generation at a nuclear facility requires robust emergency planning for the public's health and safety in the worst case scenario.

> **Recommendation No. 16:** KI pills should be pre-distributed to everyone within 50 km of the plant and selectively pre-distributed to vulnerable communities within 100 km.
>
> **Recommendation No. 17:** The CNSC should require Bruce Power provide an online KI-pill request mechanism which is equivalent to the current "Prepare to Be Safe" website used by OPG for the Pickering and Darlington nuclear power plants for all individuals in the 50 km zone.
>
> **Recommendation No. 18:** The CNSC should extend KI stockpiles to 100 km and ensure stockpiles at places frequented by vulnerable groups, such as children and pregnant women, are maintained.

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[55] Secretariat of the Swiss Iodine Tablets Office, "Distribution of iodine tablets: a precautionary measure", online: https://jodtabletten.ch/en

[56] Superior Health Council, Conseil Supérieur de la Santé, Conseil Supérieur de la Santé Accidents nucléaires, environnement et santé après Fukushima. Planification d'urgence, AVIS DU CONSEIL SUPERIEUR DE LA SANTE N° 9235, February 2016, online: https://www.hgr-css.be/file/download/995fe8a7-0031-4241-b885-f64379fe11e9/hmIBibV5TBeVjNw62MjYLOXgpzUIgw5D0h5HwP8nA03d.pdf

[57] CELA, "Ten Years Later – Reflections on Emergency Preparedness on the Anniversary of Fukushima" Blog (May 27, 2021), online: https://cela.ca/ten-years-later-reflections-on-emergency-preparedness-on-the-anniversary-of-fukushima/

(e) Mitigating Impacts to the Environment

i. Water Temperature and Impacts to Aquatic Life

The CNSC Staff CMD highlights a substantial environmental concern associated with increasing the power limits at Bruce NPGS: "The requested power uprate may lead to an increase in heat released into Lake Huron which could have an impact on the fish habitat".[58] CNSC staff note that the compliance verification of the Environmental Risk Assessment will focus on the impact of the proposed power uprate on fish habitat due to the potential increase in heat being released into Lake Huron. Despite this potential impact to fish habitat, CNSC staff determined that Bruce Power will continue to implement sufficient measures to protect the environment and people.[59]

When reviewing Bruce Power's assessment on the potential impact to fish habitat, there appears to be downplaying of the potential impact. The Project 2030 Predictive Environmental Risk Assessment (PERA) Gap Analysis notes "in simple words, the increase in reactor power is not expected to result in a significant change in thermal benchmark exceedances compared to existing conditions, and will be further assessed in the 2027 TRA [Thermal Risk Assessment]."[60] This appears to be contrary to CNSC staff's determination that there may be an increase in heat released into Lake Huron which could impact fish habitat.

Interestingly, the PERA Gap Analysis highlights the uncertainty of climate change impacts on fish habitat:

> The effect of climate change on fish species in Lake Huron is difficult to predict. The gradual increase in water temperature is unlikely to result in fish mortality. Instead, gradual increases in temperature over time may initially increase growth and productivity for cold water fish species [R-11][R-12]. If absolute temperature increases cross thermal thresholds for cold water fish species, these cold water species will leave the area and the species composition will shift towards warmer water species [R-11][R-12]. The effect of climate change on fish species will be related to changes in the suitability of local habitat conditions, behavioural thermoregulatory ability and changes to prey availability [R-13].[61]

The intervenor is concerned that Bruce Power is underestimating the potential impact an increase in energy production on Lake Huron would have on fish populations, and the cumulative effects of climate change with the potential increased heat releases into the lake. This concern about fish

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[58] CNSC Staff CMD at page 42
[59] CNSC Staff CMD at page 42
[60] Bruce Power, "Project 2030 Predictive Environmental Risk Assessment (PERA) Gap Analysis (2021-2026)" at page 27 of 73 **[PERA Gap Analysis]**
[61] PERA Gap Analysis at page 27 of 73

populations surrounding the Bruce NPGS is also shared by Saugeen Ojibwe Nation (SON), especially following the death of up to five million gizzard shad in 2025.[62]

Following the mass impingement of gizzard shad at Bruce A, SON directed an investigation into this 2025 event, resulting in a report titled "2025 Bruce Power Gizzard Shad Fish Kill Crisis", by R. Lauzon, R. Wagle, A. MacKinnon and J. Jalava.[63] As this report notes, warm-water discharge is the root attraction for gizzard shad fish, and managing thermal plumes in winter could mitigate how many fish congregate and thus are at risk.[64] The report provides a number of thermal discharge management strategies, such as diffuse discharge; staggered unit outages/flow management; temperature modulation; temporary shutdown protocols; alternate anti-ice systems; and alternate pathways to direct discharge water into the forebay for frazil ice control. Furthermore, the report suggests "the most comprehensive solution to eliminate entrainment and impingement is to reduce dependence on once-through cooling altogether."[65]

The mass die-off of fish has ecological implications, and therefore prevention of fish entrainment and impingement must be a focal point when assessing Bruce Power's application. There is uncertainty about the effect of climate change on Lake Huron's fish species, and there is uncertainty surrounding the potential heating impacts from an increase in energy production.

The PERA Gap Analysis notes:

> Entrainment losses are not expected to increase due to the conservative assumptions used in previous calculations (assumed mortality of all entrained fish eggs and larvae). An entrainment study is planned to start in 2025 and run for a minimum of 12 months, with new methods from what was completed in past years. A comparison of this data against the data obtained in the 2013/2014 entrainment study will be completed and if there is a significant difference, an additional 12 months of sampling will be performed. There currently has not been a discernable increase, therefore minimal increases are expected compared to historical values as the change may be masked by annual variability in lake conditions and outages; impingement data is collected at station pumphouses and is monitored for trends.[66]

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[62] Colin Butler, "Lake Huron's 'fish city' is a sign of trouble at nuclear plant, says Ontario First Nation" CBC News (April 30, 2026), online: https://www.cbc.ca/news/canada/bruce-nuclear-power-shad-sturgeon-lake-huron-reactor-limits-9.7179212; see also: CNSC, "CMD 25-M24: Increased Fish Impingement at Bruce A NGS" Event Initial Report (June 3, 2025), online: https://api.cnsc-ccsn.gc.ca/dms/digital-medias/CMD25-M24-eng.pdf/object

[63] R. Lauzon et al., "2025 Bruce Power Gizzard Shad Fish Kill Crisis" SON Joint Chiefs and Council (July 2025), online: https://acrobat.adobe.com/id/urn:aaid:sc:US:3120611b-7321-40e9-8efa-b3cea51de488

[64] R. Lauzon et al. at page 52

[65] R. Lauzon et al. at pages 52-54

[66] PERA Gap Analysis at page 26 of 73, *emphasis added*

The intervenors note that there has been a significant gap in data collection on entrainment at Bruce NPGS, with the last entrainment study being in 2013/2014 (see above). The intervenors are concerned about the monitoring of entrainment and impingement at Bruce A and B, and that the gaps in studies are resulting in a knowledge gap to protect fish populations surrounding the nuclear reactors.

With Bruce A essentially operating as a "fish trap" for warm-water loving fish, like the gizzard shad, the Intervenor requests Bruce Power provide a detailed management plan for reducing heat plumes into Lake Huron, and how water temperature management will take climate change into consideration.

> **Recommendation No. 19:** Bruce Power provide a detailed management plan for reducing heat plumes into Lake Huron, and how water temperature management will take climate change into consideration.

> **Recommendation No. 20:** a precautionary principle lens would suggest there is too much uncertainty surrounding the potential for an increase in heat released into Lake Huron which could have an impact on the fish habitat should Bruce Power increase the reactor power limits. Without a better understanding of the impact to fish habitat surrounding Bruce NPGS, the Commission should not allow Bruce Power to increase the maximum power levels for Bruce A and B.

ii. Radiological Releases

According to Bruce Power's PERA Gap Analysis, increasing the power rate brings the risk of increased tritium in effluent, as well as increased ion exchange resin (IX resin) usage:

> There was no significant correlation between radiological emission/effluent and average thermal power, however there is a potential risk to radiological waterborne effluent associated with operating at higher reactor powers. As reactor power increases, the rate of tritium production increases in the moderator and therefore there is potential for increased tritium in effluent from normal processes during normal operation (e.g., Moderator Confinement Vapour Recovery condensate routing through active sumps to the ALWMS at Bruce B). Additionally, as fission product production increases, there is potential for increased IX resin usage and spent resin dewatering to the ALWMS.[67]

[67] PERA Gap Analysis at page 22 of 73, *emphasis added*

Despite this risk for increased tritium in effluent, and the potential increase in IX resin,[68] there is no in-depth discussion of these risks. The CNSC Staff CMD merely states: "Routine intermediate-level waste (ILW) (PHT ion exchange resins and filters, etc.) are expected to increase slightly, but negligibly over time.[69] There is no estimation of how much tritium could be found in effluent with an increased uprate. Bruce Power notes that tritium and IX resin usage will be assessed for the 2027 ERA—well after this hearing has already been decided: "potential changes to chemical management, potential changes to (ion exchange resin) IX usage and detritiation will all be completed prior to submitting the 2027 ERA. Thermal effluent assessments will be refined including recovery of reactor power up to 100%FP as a bounding scenario for the 2027 ERA."[70]

The PERA Gap Analysis makes the following recommendation for the 2027 ERA:

> [A]ssessment of changes to IX usage and heavy water detritiation is recommended prior to recovery of reactor power to ensure adequate planning is in place to mitigate emissions and effluents associated with tritium increases as well as processing and dewatering of spent resins.[71]

CELA agrees that these assessments should be completed to ensure adequate planning is in place. However, we also submit a decision to increase the power level limits for Bruce A and B cannot be made without the findings of these assessments. There must be a clear understanding of the risks posed to the environment, and without an assessment of changes to IX resin usage and heavy water detritiation, the Commission cannot make an informed decision about the impacts increased power generation will have on radioactive releases and waste generation. The intervenor therefore recommends that the decision on increasing the power level limits for Bruce A and B be deferred to a public hearing after the 2027 ERA is submitted and reviewed by CNSC staff.

> **Recommendation No. 21:** With the potential risk of increased tritium in effluent and an increase in ion exchange resin, a more thorough study of these environmental risks must be completed prior to considering the increase in power level limits.
> **Recommendation No. 22:** The decision on increasing the power level limits for Bruce A and B be deferred to a public hearing after the 2027 ERA is submitted and reviewed by CNSC staff.

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[68] Note about IX resins: "Intermediate-level radioactive waste consists primarily of used nuclear reactor components and the ion exchange resins and filters used to purify reactor water systems. This type of waste is more radioactive than low-level waste and requires shielding to protect workers during handling." CNSC, "Fact sheet: Radioactive waste management – Canada's regulatory process" online: https://www.cnsc-ccsn.gc.ca/eng/resources/environmental-protection/environmental-assessments/ea-06-03-17520-facts/ , *emphasis added*

[69] CNSC Staff CMD at page 45

[70] Bruce Power, "Request Commission Approval of Change to Reactor Power Limits, Project 2030" (August 19 2025) at pdf page 25 [**Bruce Power Application**]

[71] PERA Gap Analysis at page 22 of 73

VI. ORDER REQUESTED

For the foregoing reasons provided in this submission, we request the CNSC issue an order:

(1) Granting CELA the status of intervenor;

(2) Making a determination that the amendment of the licensing basis of the power reactor operating licence for the Bruce A and B nuclear generating stations to increase the reactor power limits should not be granted on the grounds that allowing power level increase to Bruce A and B to 95.5% full power and 96.0% full power, respectively, would be contrary to the precautionary principle and would pose a risk to the health and safety of the public and the environment;

(3) In the alternative, should a licensing basis amendment be granted, the following must occur:

a. The power uprates for Bruce A and B must not exceed a rate of 1.5% (allowing Bruce A to increase to 94% full power and Bruce B to increase to 94.5 % full power);

b. There must be Regulatory Hold Points set in place that would require Bruce Power to remove uncertainty around the potential impacts to human health and the environment; and

c. Upon the closure of all Regulatory Hold Points, a public hearing in person must occur to review the application to re-evaluate the request to increase the power limits for Bruce A and B.

Sincerely,

CANADIAN ENVIRONMENTAL LAW ASSOCIATION

Sara Libman

Sara Libman, Legal Counsel to CELA

SUMMARY OF RECOMMENDATIONS

Recommendation No. 1: The Commission must apply the precautionary principle to the assessment of Bruce Power's application to increase reactor power limits for Bruce A and B.

Recommendation No. 2: Any request for a power level change to a nuclear power plant should not exceed a one and a half percent increase in reactor thermal power.

Recommendation No. 3: The use of a hearing in writing to consider the increase in a nuclear power generating facility's power limits is inappropriate and is contrary to the public interest.

Recommendation No. 4: Hearings in writing should not be the default for licence basis amendments, and there must be a consideration of how the public will be impacted by the use of a hearing in writing.

Recommendation No. 5: In the interest of effectively disseminating objective scientific, technical, and regulatory information to the public for this application for a licence to construct, the Commission should stringently assess these requests with a lens of upholding public transparency. Rather than excluding entire documents, redacting content may be more appropriate, and that technical information, especially information related to safety and emergency planning, should not be made confidential.

Recommendation No. 6: The Commission must consider SCA non-compliances—even those of low or negligible safety significance—with a cumulative lens to assess whether there is a safe work culture at Bruce Power. With a potential for power level uprate at Bruce NPGS, there **must** be a safe work culture that maintains and strives for adequate record-keeping, personnel training, and emergency readiness.

Recommendation No. 7: the Commission should consider the potential concerns regarding the governance system assessment/HAZOP process and its interface with the Bruce Power ECC process, as noted by CNSC Staff.

Recommendation No. 8: despite the fact that the system assessment is an additional measure and not a regulatory requirement, because Bruce Power is utilizing this system assessment in its analyses, the Commission should include an evaluation of it within the determination of whether Bruce Power is equipped to increase the power level limits for Bruce A and B.

Recommendation No. 9: while Bruce NPGS is undergoing major component replacement procedures for refurbishment, the Commission will not be able to determine whether Bruce Power will be able to safely operate its reactors at an increased power rate, especially when there is an evolutionary (i.e., unknown) element to P2030.

Recommendation No. 10: While both Bruce A and B are undergoing refurbishment, an increase in reactor power should not be permitted within the context of the precautionary principle.

Recommendation No. 11: Considering previous issues with aging components at Bruce NPGS, like the issue of pressure tubes exceeding Heq hydrogen equivalent (Heq) limits under the current reactor power limits, the intervenor is concerned about the rate of component aging that could occur with an increased power rate. With the knowledge that increasing the power limits can rapidly age reactor components, the Commission should not allow Bruce A and B to undergo reactor power uprates.

Recommendation No. 12: The Commission must consider the safety work culture for contractors and employees of Bruce NPGS when considering a power uprate for Bruce A and B.

Recommendation No. 13: The Commission should deny the current application to increase power limits at Bruce A and B, and require Bruce Power to reapply for this increase only after all RHPs have been released.

Recommendation No. 14: The proposed regulatory hold point for power uprate beyond 92.5% FP for Bruce A and 93% FP for Bruce B should be removed following a public hearing on the matter.

Recommendation No. 15: The return to service at Bruce Power must be proven to be stable and safe before an increase in reactor power—which would result in an increase in radioactive releases (to be discussed below)—be considered by the Commission.

Recommendation No. 16: KI pills should be pre-distributed to everyone within 50 km of the plant and selectively pre-distributed to vulnerable communities within 100 km.

Recommendation No. 17: The CNSC should require Bruce Power provide an online KI-pill request mechanism which is equivalent to the current "Prepare to Be Safe" website used by OPG for the Pickering and Darlington nuclear power plants for all individuals in the 50 km zone.

Recommendation No. 18: The CNSC should extend KI stockpiles to 100 km and ensure stockpiles at places frequented by vulnerable groups, such as children and pregnant women, are maintained.

Recommendation No. 19: Bruce Power provide a detailed management plan for reducing heat plumes into Lake Huron, and how water temperature management will take climate change into consideration.

Recommendation No. 20: a precautionary principle lens would suggest there is too much uncertainty surrounding the potential for an increase in heat released into Lake Huron which could have an impact on the fish habitat should Bruce Power increase the reactor power limits. Without

a better understanding of the impact to fish habitat surrounding Bruce NPGS, the Commission should not allow Bruce Power to increase the maximum power levels for Bruce A and B.

Recommendation No. 21: With the potential risk of increased tritium in effluent and an increase in ion exchange resin, a more thorough study of these environmental risks must be completed prior to considering the increase in power level limits.

Recommendation No. 22: The decision on increasing the power level limits for Bruce A and B be deferred to a public hearing after the 2027 ERA is submitted and reviewed by CNSC staff.