Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

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# Written Submission from the Saugeen Ojibway Nation

# Mémoire de la Nation Saugeen Ojibway

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**

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**Written Submissions of the Saugeen Ojibway Nation –**
**Bruce Power's Application to Amend the Licensing Basis for Bruce A and B Nuclear Generating Stations to Increase Reactor Power Limits**

May 20, 2026

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## I. Request to Intervene

Pursuant to Rule 19 of the *Canadian Nuclear Safety Commission Rules of Procedure,*[1] the Saugeen Ojibway Nation (**"SON"**) requests the opportunity to intervene in the public hearing on Bruce Power's application to amend the licensing basis for Bruce A and B Nuclear Generating Stations (**"Bruce NGS"**) to increase its reactor power limits to authorize operation at 95.5% full power (**"FP"**) for Bruce A and 96.0% FP for Bruce B.

## II. Contact Information

The SON can be contacted through its Environment Office as well as its legal counsel at:

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## III. Overview

The purpose of this document is to provide the written submissions of SON to the Canadian Nuclear Safety Commission (the **"Commission"** when referring to the tribunal; **"CNSC"** when referring to the organization) as a component of its application to intervene.

### 1. Saugeen Ojibway Nation

SON is comprised of the Anishinaabe People of the Chippewas of Nawash Unceded First Nation and Chippewas of Saugeen First Nation. Anishinaabekiing, SON's Territory, encompasses much of the Saugeen (Bruce) Peninsula, extending south of Goderich and east of Collingwood. The waters surrounding these lands and the lakebed of Lake Huron from the shore to the international boundary with the United States and to halfway across Georgian Bay are also part of SON's Territory.

SON's ancestors have used and occupied Anishinaabekiing since time immemorial and its People continue to do so today. SON's Territory consists of everything integral to life—the

[1] SOR/2000-211.

lands, rivers, lakes, winds, plants, animals, and fish. Anishinaabekiing has sustained SON People physically and spiritually for countless generations and must continue to do so far into the future.

SON has a proven and exclusive Aboriginal and Treaty right to a commercial fishery in the waters of Georgian Bay and Lake Huron, within SON Territory. Members of SON and their ancestors have fished these waters for sustenance and as the basis of trade and commerce for hundreds of generations, and they continue to do so today. This fact has been recognized by the courts and by the Crown.[2]

### 2. Nuclearization of Anishinaabekiing

The development of the nuclear industry in SON Territory has played a major role in shaping the land and SON People's place within it.[3] Without consultation or free, prior and informed consent (**"FPIC"**), SON became host to:

- Canada's first commercial-scale Canada Deuterium Uranium reactor at Douglas Point;
- the world's largest operating nuclear facility at the Bruce site;[4]
- the vast majority of Ontario's low and intermediate level waste at the Western Waste Management Facility (**"WWMF"**);
- the Western Clean-Energy Sorting and Recycling Facility; and
- nearly 45 percent of Canada's used fuel.[5]

The nuclear industry has consistently minimized SON's rights and excluded SON's perspectives, requests and desires throughout its history, all while heavily utilizing SON Territory to support its development. SON's FPIC has never been obtained.

## IV. Proposed Amendment

As a component of its "Project 2030" initiative (the **"Project"**), Bruce Power is seeking Commission approval to amend the licensing basis for the Bruce NGS to authorize a 3% power limit increase at each Bruce A and B. Bruce Power intends to seek a further power limit increase in a separate future submission.

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2 *R.* v. *Jones and Nadjiwon*, [1993] 3 C.N.L.R. 182. SON has negotiated three successive commercial fishing agreements with the Ontario government to protect and preserve the fishery in 2000, 2005, and 2013.

3 The history and current reality of the nuclear industry in SON Territory has been described in previous SON submissions relating to the licensing of the Western Waste Management Facility and the Joint Review Panel for Ontario Power Generation's deep geological repository for low and intermediate level wastes proposal.

4 Although the Kashiwazaki-Kariwa Nuclear Power Plant has a higher installed capacity, the Bruce NGS is the largest fully operating nuclear plant currently producing power.

5 Nuclear Waste Management Organization, Nuclear Fuel Waste Projections in Canada – 2023 Update at 4.

This application is one of many proposals SON has faced in recent years, or now faces, that seek to intensify the nuclearization of Anishinaabekiing, through increased power generation in SON Territory or through the potential introduction of new or expanded nuclear waste streams. It sits alongside the Major Component Replacement Project, the proposed Bruce C Project, the Darlington Refurbishment and New Nuclear Project,[6] the Pickering Refurbishment, the Wesleyville Project,[7] and the WWMF licence renewal, among others.

The Project seeks to increase peak output by hundreds of megawatts. Expressed as a percentage of Bruce Power's total generation capacity, this may appear modest—but in absolute terms, the output increase is comparable to that of a large standalone energy project, such as a small modular reactor. SON views the Project and its associated impacts accordingly.

## V. SON Concerns

SON's concerns regarding this application focus on two matters: (1) the impacts of increased thermal energy discharge on the aquatic environment of Lake Huron and the SON fishery; and (2) the continued accumulation of nuclear waste in SON Territory.

### *1. Impacts on the Aquatic Environment*

For years, SON has raised concerns about the interaction between Bruce Power's once-through cooling system and the aquatic environment of Lake Huron, including effects on fish, fish habitat, and SON's proven Aboriginal and Treaty right to a commercial fishery. Those concerns are not theoretical. They arise from the operation of a facility that withdraws, heats, and discharges very large volumes of lake water from and into an already stressed ecosystem.

The events of the past year confirm the seriousness of these concerns. Between approximately 3.9 and 5 million gizzard shad were killed in a matter of months.[8] This was not a minor operational issue. It was a mass mortality event of striking scale, and it demonstrates that the existing combination of monitoring, reporting, mitigation, and regulatory limits has not been sufficient to prevent serious aquatic effects. While Bruce Power has installed additional mitigation measures, their adequacy and year-round effectiveness have not yet been demonstrated, and the underlying thermal plume and fish attraction mechanisms remain unresolved.

Bruce Power's Project 2030 Predictive Environmental Risk Assessment (**"PERA"**) Gap Analysis acknowledges that the total thermal energy released to the lake will increase compared to historical releases at lower reactor power, notwithstanding improvements in energy conversion efficiency.[9] That is, the proportion of heat released per unit of electricity generated may decline through the Project, but the absolute heat load to Lake Huron will increase. It is the absolute heat load, not the efficiency ratio, that determines the additional thermal burden placed on the lake, fish, fish habitat, and SON's rights-based fishery.

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6 SON has opposed the importation of nuclear waste from the Darlington New Nuclear Project.

7 SON has provided comments categorically rejecting the importation of nuclear waste from the Wesleyville Project.

8 CMD 25-M24, CNSC Staff Submission, Increased Fish Impingement at Bruce A NGS, at 2.

9 Bruce Power, Project 2030 PERA Gap Analysis, at 50.

That Bruce Power anticipates staying within existing cooling water effluent temperature limits during this first phase of the Project does not allay SON's concerns. The recent fish mortality event shows that existing limits and mitigation measures have not provided adequate protection.[10] Nor has Bruce Power demonstrated that the existing thermal plume, alone or in combination with other stressors, is ecologically benign. The extent to which the plume contributes to artificial fish aggregation, altered behaviour, disease risk, thermal stress, invasive species risk, spawning habitat effects, egg and larval mortality, and broader changes in nearshore fish productivity remains insufficiently understood.

SON is particularly concerned that increased power limits may add stress to a fishery and aquatic system already under severe cumulative pressure. The SON fishery has been affected by multiple overlapping stressors, including invasive species, altered food webs, degraded productivity, climate change, industrial development, and ongoing facility-related effects. Against that background, an incremental increase in thermal loading cannot be treated as insignificant simply because it is incremental. Small increases in pressure may be meaningful where the receiving environment and rights-based fishery are already degraded.

SON is also concerned that the Project may increase entrainment and impingement risks or alter the conditions under which those risks occur. Bruce Power has stated that it does not expect increased impingement or entrainment losses from this phase of the Project.[11] However, those conclusions appear to rely on limited data and assumptions that have not been adequately tested against recent events. Given the demonstrated uncertainty around fish presence, attraction, mortality, and mitigation effectiveness at the Bruce facility, SON does not accept that entrainment and impingement risks can be dismissed without additional monitoring, validation, and enforceable adaptive management.

From SON's perspective, these are not merely environmental concerns. They are direct risks to SON's Aboriginal and Treaty rights, cultural practices, and the long-term ability of SON members to maintain a meaningful relationship with Lake Huron. Where recent events reveal uncertainty in fish attraction, mortality pathways, and mitigation effectiveness, uncertainty should not be resolved in favour of increased operation without enforceable monitoring and response conditions. Any decision to authorize increased power limits must therefore be accompanied by clear, enforceable conditions requiring Bruce Power to quantify the additional thermal burden, validate plume predictions, monitor actual effects, demonstrate the effectiveness of fish protection measures, and respond operationally when thresholds are exceeded.

*2. Waste Generation*

The nuclear facilities in SON Territory were built without SON's consultation or consent. For decades, SON Territory has housed not only the world's largest operating nuclear facility, but also enormous and disproportionate amounts of nuclear waste—waste generated not only at the

[10] SON notes that it has never been provided with a scientific justification or basis for the existing cooling water effluent temperature limits, which appear to instead be based on operational capabilities and needs. That is, the temperature limits on the cooling water discharged by Bruce Power do not appear to have been set based on what the aquatic environment can tolerate, but rather based on what the BNGS is operationally capable of achieving.

[11] Bruce Power, Project 2030 PERA Gap Analysis, at 20.

Bruce site, but also transported from the Pickering and Darlington facilities located outside SON Territory.

In recent years, SON has been faced with a succession of proposals that stand to increase the amount of nuclear waste stored in SON Territory beyond what already exists and beyond what was ever anticipated. These include the Major Component Replacement Project, the proposed Bruce C facility, the Darlington Refurbishment and New Nuclear Projects, the Pickering Refurbishment, the proposed Wesleyville Project, and the WWMF licence renewal.

The current application is yet another link in that chain. Bruce Power's own PERA Gap Analysis acknowledges that spent fuel will increase proportionally with the increase in full power.[12] This application thus represents another incremental step toward the continued and indefinite accumulation of nuclear waste in SON Territory to support Canada and Ontario's ambitions to deepen reliance on nuclear power.

SON acknowledges that the Nuclear Waste Management Organization (**"NWMO"**) proposes to build a used fuel deep geological repository (**"DGR"**) in northern Ontario. However, there is no certainty that the DGR project will proceed, and even if it does, the NWMO's current plan contemplates the gradual transport of used fuel out of SON Territory over a period of up to 50 years. In the interim, the waste stays in SON Territory. Each project that generates additional spent fuel—including this one—adds to SON's already disproportionate burden.

## VI. Relief Sought

*1. Impacts on the Aquatic Environment*

Bruce Power has indicated that the next phase of Project 2030 will evaluate options to reduce fish impingement and entrainment and to mitigate thermal effluent, including potential modifications to the Bruce A discharge channel and intake flow flexibility measures. SON welcomes the fact that these issues have been identified. However, future evaluation is not a substitute for enforceable conditions on the present amendment.

If the Commission authorizes this amendment, SON respectfully submits that it should do so only with clear licence conditions requiring Bruce Power to address the aquatic effects of increased power limits. At minimum, those conditions should require Bruce Power to:

a. **Quantify and disclose the additional thermal load** to Lake Huron associated with the approved power increase, including unit-specific assumptions, flow rates, discharge temperatures, operating scenarios, and seasonal variation;
b. **Provide validated thermal plume modelling** that reflects the increased heat load under Project 2030, including modelling under ecologically relevant seasonal, wind, lake-level, and climate-change scenarios;
c. **Assess cumulative aquatic effects** including the combined effects of increased thermal loading, existing Bruce A and B operations, future Bruce site activities, climate change, invasive species, altered food-web conditions, and existing stress on the SON fishery;

[12] Bruce Power, Project 2030 PERA Gap Analysis, at 37.

d. **Develop and implement a comprehensive aquatic monitoring program** designed with SON, that includes continuous or high-frequency monitoring of plume extent, water temperature, flow rates, unit-specific outlet and outfall conditions, fish presence and movement, impingement, entrainment, and relevant indicators of nearshore ecosystem health;
e. **Demonstrate the effectiveness of fish protection measures** including deterrent and barrier systems, through transparent monitoring, clear performance metrics, independent validation where appropriate, and regular reporting to SON and the CNSC;
f. **Develop species-specific protections** for lake whitefish, lake sturgeon, and other species of cultural, ecological, or fishery importance to SON, including protections for sensitive life stages, spawning areas, nursery habitat, and seasonal movement periods;
g. **Establish enforceable thresholds and adaptive management triggers** for thermal discharge, plume extent, fish mortality, impingement, entrainment, and other aquatic effects, with clear consequences for exceedance, including mandatory notification, investigation, corrective action, additional mitigation, and potential operational reductions; and
h. **Provide SON with a meaningful role in oversight** including involvement in study design, monitoring implementation, interpretation of results, review of mitigation effectiveness, and decisions regarding adaptive management responses.

These conditions should be imposed before increased power operation is treated as routine. Without such conditions, the amendment risks adding thermal and biological stress to an already degraded system while deferring the assessment and mitigation of those effects to an uncertain future process.

*2. Waste Generation*

SON submits that this application again underscores the urgency of resolving the nuclear waste issue in SON Territory. SON has previously raised this concern in proceedings before the Commission. SON's concerns have not, to date, been addressed.

When SON raised concerns in proceedings relating to the Darlington and Pickering facilities, for example, regarding the implications that additional nuclear waste generation at those facilities would have on SON and SON rights, Ontario Power Generation (**"OPG"**) took the position that it would engage with SON on these impacts in the context of the WWMF relicensing.[13] The Commission agreed. Now, however, in early engagement with OPG on the WWMF licence renewal, OPG has resiled from this position. Instead, OPG asserts that its application raises "no new novel impacts" in an attempt to minimize the depth of the obligations owed to SON.[14] This leaves SON in an untenable position with OPG, as SON is effectively being told it has no forum in which to raise its concerns respecting the ever-growing volume of waste destined for SON Territory through new, and not previously anticipated, projects.

[13] See e.g. Canadian Nuclear Safety Commission, "Record of Decision: Application to Renew the Power Reactor Operating Licence for the Darlington Nuclear Generating Station" (September 24, 2025) at paras. 310 and 333.

[14] Letter from K. Aggarwal, VP Nuclear Sustainability Services, OPG, to C. Salmon, Commission Registrar, CNSC (1 May 2026).

This is fundamentally unacceptable. SON's concerns regarding nuclear waste accumulation must be addressed. The licence renewal for the WWMF is scheduled to come before the Commission next year. SON submits, in the strongest possible terms, that the longstanding and unresolved concerns of SON must finally be accorded the attention they are owed in that forum. Each licensing decision that increases waste generation in SON Territory without resolving the underlying question of whether SON has consented to the importation and interim storage of that waste—and under what conditions, if any, it might do so—compounds the injustice that SON has experienced for over six decades. If the Commission chooses not to deal with the impacts of waste generation at their source—when new projects generating additional waste are being considered—those impacts must be dealt with appropriately during the WWMF relicensing.

Further, if the Commission authorizes this amendment, SON respectfully submits that it should do so only with clear licence conditions requiring Bruce Power to provide foundational information on the waste implications of the application. At minimum, those conditions should require Bruce Power to:

a. **Provide SON with information regarding the total volume of additional spent fuel** projected to be generated as a result of Project 2030, and the arrangements in place between Bruce Power and OPG for the management of that waste prior to permanent disposal.

Additionally, SON has made submissions in the impact assessment process for the NWMO's DGR, requesting that the Impact Assessment Agency of Canada and the CNSC require NWMO to conduct an alternatives analysis that would consider options for interim storage of used fuel at or near the DGR site, rather than leaving it in SON Territory for up to 50 years. The present application, yet another incremental project that will increase the volume of spent fuel stored in SON Territory, highlights the importance of that request. SON has specifically sought to have its request incorporated into the Tailored Impact Statement Guidelines for that project.

## VII. Conclusion

For over 60 years, SON has been at the centre of the development of the nuclear industry in Canada, without consent and without adequate recognition or respect of the rights and interests of SON People. The Bruce NGS now proposes to increase its reactor power limits, which will—by Bruce Power's own admission—increase the volume of thermal energy discharged to Lake Huron and increase the volume of spent fuel stored in SON Territory.

These are not abstract or speculative harms. The gizzard shad mortality event of the past year demonstrated the real-world consequences of underestimating the aquatic impacts of the Bruce facility. The ever-growing accumulation of nuclear waste in SON Territory, waste generated not only at the Bruce site but transported from across Ontario, speaks to a disproportionate burden that SON has borne, and continues to bear, without its consent. SON does not oppose the Commission granting this amendment, but submits that it must do so with clear conditions requiring Bruce Power to quantify, monitor, validate, mitigate, and adaptively manage the aquatic-related consequences of increased power operation, with SON directly involved in oversight. Additionally, SON submits that further information should be provided on the

incremental waste implications of this application, and that the cumulative burden of nuclear waste accumulation in SON Territory—a burden that has grown without SON's consent for over six decades—must finally be confronted in the WWMF licence renewal next year and appropriately considered in the impact assessment for the NWMO's DGR.