

CMD 26-H107.A – CNSC Staff Submission - Response to Commission Request for Information (CMD 26-H107-Q)

Classification	UNCLASSIFIED
Type of CMD	Supplemental
CMD Number	26-H107.A
Reference CMD(s)	26-H107, 26-H107-Q
Hearing in Writing OR Closed Hearing in Writing date	October 2026
Summary	In this CMD, CNSC staff will provide responses in writing to questions from the Commission (CMD 26-H107-Q) with respect to the hearing in writing (CMD 26-H107) concerning the request from Ontario Power Generation (OPG) to revise the timelines and expand the scope of two Darlington Integrated Implementation Plan (IIP) items related to aquatic thermal effects, and impingement and entrainment monitoring. As part of a Commission proceeding, this document – including any items mentioned in the footnotes – will be part of the public record unless the Commission rules in favour of a request for confidentiality.
Actions required	CNSC staff request the Commission render a decision regarding the requested approval of changes to the Darlington IIP, as described in CMD 26-H107 .

Questions from the Commission directed to CNSC staff, as well as staff responses, can be found in the [Staff Response](#) section.



26-H107.A - Mémoire du personnel de la CCSN - Réponse à la demande d'information de la Commission (CMD 26-H107-Q)

Classification	NON CLASSIFIÉ
Type de CMD	Renseignement supplémentaire
Numéro du CMD	26-H107.A
CMD de référence	26-H107, 26-H107Q
Date de l'audience par écrit OU de l'audience à huis clos par écrit	Octobre 2026
Sommaire	Dans le présent document à l'intention des commissaires (CMD), le personnel de la Commission canadienne de sûreté nucléaire (CCSN) fournira des réponses écrites aux questions de la Commission (CMD 26-H107-Q) relatives à l'audience par écrit (CMD 26-H107) qui concerne Ontario Power Generation (OPG) demande l'approbation de la Commission pour réviser les échéanciers et élargir la portée de deux éléments du Plan intégré de mise en oeuvre (IIP) de Darlington liés aux effets thermiques aquatiques, ainsi qu'à la surveillance de l'impact et de l'entraînement. Dans le cadre d'une séance de la Commission, le présent document – y compris tous les éléments mentionnés dans les notes de bas de page – fera partie du dossier public, à moins que la Commission ne se prononce en faveur d'une demande de traitement confidentiel.
Mesures requises	Le personnel de la CCSN demande à la Commission de rendre une décision concernant les changements demandés au Plan intégré de mise en oeuvre de Darlington, tels qu'ils sont présentés dans le CMD 26-H107 .



On peut trouver les questions de la Commission à l'intention du personnel de la CCSN, de même que les réponses de ce dernier, dans la section [Staff Response](#).



CMD 26-H107.A

**[CNSC Response to Commission Request for
Information – CMD 26-H107-Q – Questions from
Commission Members to CNSC Staff]**

Signed by:

X

**Campbell,
Kimberley A**

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Kimberley Campbell on behalf of Anupama Bulkan
Director General, Directorate of Power Reactor Regulation



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Staff Response

The Commission's questions [1], including any quoted text from the original CMD [2], have been reproduced below in the shaded boxes to provide suitable context for CNSC staff's responses.

#1	Based on the operating experience of the Darlington NGS since CMD 26-H107 was submitted, have there been any issues that would impact CNSC staff's recommendations in the CMD?
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Since the submission of CMD 26-H107 [2], CNSC staff have continued to conduct regulatory oversight of the Darlington NGS, including monitoring station performance and operating experience.

Based on CNSC staff's oversight and review of operating experience since the submission of CMD 26-H107, there have been no issues identified that would impact the conclusions or recommendations presented in CMD 26-H107 [2].

CNSC staff note that the Darlington Refurbishment Project was completed in March 2026 with the return to service of Unit 4, the fourth and final refurbished unit. All four Darlington units have now completed refurbishment and returned to service.

CNSC staff continue to verify OPG's compliance with applicable regulatory requirements and licence conditions through established regulatory oversight activities. Any operational events or issues identified through these activities are assessed in accordance with the CNSC's regulatory framework to determine their safety significance and whether regulatory action is required.

Based on the operating experience reviewed since CMD 26-H107 was submitted, CNSC staff's conclusions and recommendations presented in CMD 26-H107 [2] remain unchanged.

#2	In CMD 26-H107.3, Curve Lake First Nation raised concerns about the cumulative effects of different licence applications concerning the Darlington NGS. What is CNSC staff's position on this concern in relation to this application?
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CNSC staff acknowledge Curve Lake First Nation's (CLFN) concerns regarding the cumulative effects associated with the various activities and regulatory processes at and surrounding the Darlington NGS. In its intervention [3], CLFN raised concerns regarding

the cumulative environmental effects of activities at the Darlington site, including potential effects on the aquatic environment, and emphasized the importance of continued cumulative environmental monitoring as activities at the site evolve.

CNSC staff note that the application currently before the Commission is limited to revisions to the timelines and scope of two existing Darlington Integrated Implementation Plan (IIP) commitments: IIP-EA 012, related to aquatic thermal effects, and IIP-EA 013, related to aquatic impingement and entrainment [4]. The proposed revisions do not authorize new station activities. As described in CMD 26-H107, CNSC staff determined that the proposed changes are primarily administrative in nature, including timeline extensions, task reorganization and the addition of a Best Available Technology Economically Achievable study, and are not expected to result in new adverse environmental effects. CNSC staff further concluded that the proposed changes do not affect the conclusions of the environmental assessment (EA) presented to the Commission in 2012 about the refurbishment and continued operation of the Darlington NGS [5].

CNSC staff note that cumulative effects were considered as part of that EA. The cumulative effects assessment considered residual adverse effects of the project in combination with similar effects from other past, present and foreseeable projects and activities where those effects could overlap spatially and temporally.

With respect to the aquatic environment, the EA considered cumulative effects associated with impingement and entrainment of aquatic biota and potential thermal effects on round whitefish embryo survival. The assessment considered other projects and activities within the regional study area that had the potential to contribute to cumulative effects, including existing Darlington NGS operations, the Darlington New Nuclear Project, Pickering NGS operations, St. Marys Cement operations, and municipal water treatment and pollution control facilities.

The EA concluded that adverse cumulative effects from impingement and entrainment associated with individual power plant cooling-water intakes and other industrial and municipal water intakes were not measurable at the aquatic population level. The EA also concluded that thermal contributions from other industrial and municipal water users were likely negligible relative to those of the nuclear generating stations. The EA determined that no mitigation measures beyond those already proposed for the refurbishment and continued operation project and the Darlington New Nuclear Project were required. The EA also identified adaptive management measures to ensure that future changes to climate and the Lake Ontario ecosystem, and potential resulting changes to thermal, impingement and entrainment effects, would continue to be appropriately considered.

The EA established follow-up activities to verify the predictions made in the EA, including monitoring related to aquatic thermal effects, impingement and entrainment

during continued operation. These follow-up commitments were incorporated into the Darlington IIP [4].

CNSC staff further note that the proposed revisions to the sampling timelines do not remove or reduce these environmental monitoring commitments. Rather, the revised timelines allow post-refurbishment monitoring to be conducted following the return to service of all four refurbished Darlington units. This will allow monitoring to be conducted under conditions representative of the station's complete post-refurbishment operational footprint and will support validation of the environmental assessment predictions following refurbishment and during continued operation.

As a result of the Darlington New Nuclear Project EA, OPG committed to conduct a cumulative effects assessment of the aquatic environment, as documented in Commitment D-C-1.2 of the Commitment Report [6]. The Aquatic Cumulative Effects Assessment is to be provided to the CNSC for review and acceptance no later than three months prior to Phase A commissioning.

The site also undergoes an Environmental Risk Assessment (ERA) [7] on a regular basis as per CNSC requirements and expectations. The ERA Addendum submitted in 2024 encompasses normal operations at DN (including the DNGS, the Darlington New Nuclear Project (DNNP) lands, the Nuclear Sustainability Services Darlington Waste Management Facility (NSS-DWMF), the Tritium Removal Facility (TRF), and any other OPG activities within the DN property boundary) during the operations and refurbishment phases of the facility. The scope looks at the potential risk posed by releases from the DN facilities (whole site) on the human and ecological environment, as well as physical stressors. The ERA addendum concluded [7] that the combined effects of DNNP site preparation activities in conjunction with DNGS site wide operations do not represent a risk to human and ecological receptors. OPG is planning to submit a revision of the site ERA on November 30, 2026 [7].

CNSC staff also continue to assess environmental performance at the Darlington site through regulatory oversight activities. This includes the conduct of environmental protection focused inspections, and the review of OPGs' effluent and environmental monitoring results. In addition, CNSC conducts its own monitoring around the Darlington Site through the Independent Environmental Monitoring Program (IEMP) and conducts environmental protection reviews. The most recent Environmental Protection Review [8] considered all available environmental monitoring results and risk assessment information for the Darlington Nuclear Site and concluded that potential risks to the environment and human health from releases from the site remained low to negligible.

Based on the above, CNSC staff acknowledge CLFN's broader concerns regarding cumulative effects and consider that these concerns continue to be addressed through

the environmental protection regulatory framework. The proposed revisions to IIP-EA 012 and IIP-EA 013 do not introduce new adverse environmental effects, remove the applicable monitoring commitments, or alter the conclusions of the previous environmental assessment.

CNSC staff's conclusions and recommendations presented in CMD 26-H107 therefore remain unchanged.

Ongoing Engagement with Curve Lake

CNSC staff are committed to working collaboratively with Curve Lake First Nation (CLFN) to address concerns related to capacity and cumulative effects associated with the DNGS. CNSC staff meet regularly with CLFN and have several avenues within to share information and engage on topics related to cumulative effects of licensing activities at DNGS and the impact on CLFN's capacity.

In 2021, CNSC and CLFN signed a Terms of Reference (TOR) for long-term engagement that outlines the agreed upon approach for engagement, communication and collaboration on nuclear projects and facilities in CLFN's territory. As part of the TOR, CNSC staff and CLFN develop an annual work plan that identifies priority activities, projects, and areas of collaboration for the coming year.

CLFN has participated in both the 2021 and 2023 IEMP sampling campaigns around the Darlington site, having provided input into the sampling of manoomin (wild rice), and joining CNSC staff in the field to share knowledge on its cultural importance and how to harvest it. CLFN will be participating in the 2026 IEMP sampling campaign around the Darlington site this fall.

CLFN is a member of the Joint Forum between CNSC staff and the Michi Saagiig Nations. The Forum provides an opportunity for the Michi Saagiig Nations to collectively discuss policies, processes, and broader issues of interest with the CNSC. It also allows CNSC staff to share information on matters beyond the project specific level, including cumulative effects considerations at nuclear generating stations located within their territories. In addition, the Forum provides an opportunity for CNSC staff to hear directly from Nations about their concerns, including potential capacity-related impacts resulting from multiple consultation and regulatory activities.

In addition, CNSC staff worked with the Michi Saagiig Nations, including CLFN, to develop Licence Condition Handbook (LCH) Compliance Verification Criteria (CVC) for the DNGS relicensing. The CVC describes specific engagement and communications requirements for OPG to demonstrate it is fulfilling its commitments made to Indigenous Nations and communities throughout the licence period, including engagement commitments made to CLFN, such as addressing their concerns with respect to cumulative effects and capacity concerns.

Going forward, CNSC staff will continue to engage with CLFN to ensure they receive timely and relevant information regarding licensing activities at the DNGS, including information related to cumulative effects, ongoing monitoring activities and any potential impacts on community capacity.

Conclusion

CNSC staff have reviewed the operating experience of the Darlington NGS since the submission of CMD 26-H107 and have identified no issues that would impact staff's conclusions or recommendations in CMD 26-H107.

CNSC staff have also considered the concerns raised by Curve Lake First Nation regarding the cumulative effects of different licence applications and activities concerning the Darlington NGS. Cumulative environmental effects relevant to the IIP items currently before the Commission were considered through the environmental assessment for the refurbishment and continued operation of the Darlington NGS and continue to be addressed through EA follow-up, environmental monitoring, environmental protection and regulatory oversight activities.

The proposed revisions maintain the applicable environmental monitoring commitments and will allow post-refurbishment monitoring to be conducted under conditions representative of the complete post-refurbishment operational footprint of the Darlington NGS.

CNSC staff's conclusions and recommendations in CMD 26-H107 remain unchanged. CNSC staff recommend that the Commission approve OPG's request to revise the Darlington IIP as described in CMD 26-H107 [2].

References

- [1] Commission Panel Questions CMD, "Questions from Commission Panel Members in the Matter of Ontario Power Generation Inc. – Application to change the Integrated Implementation Plan for Darlington Nuclear Generating Station," CMD 26-H107-Q, September 18, 2026.
- [2] CNSC staff CMD, "Ontario Power Generation request for changes to the Darlington NGS Integrated Implementation Plan," CMD 26-H107, April 2026.
- [3] Curve Lake First Nation, "Curve Lake First Nation's submission on Ontario Power Generation request for changes to the Darlington nuclear generating station Integrated Implementation Plan," CMD 26-H107.3, June 30, 2026.
- [4] CNSC letter, A. Mathai to R. Geofroy and B. Vulcanovic, "Darlington NGS Refurbishment – Request for CNSC Acceptance of Integrated Implementation Plan (IIP) Revision 004," October 27, 2023. e-Doc 7153151
- [5] CNSC and Fisheries and Oceans Canada, "Final Environmental Assessment Screening Report: "The Refurbishment and Continued Operation of the Darlington Nuclear Generating Station, Municipality of Clarington, Ontario", CEAR# 11-01-62516," March 2013. e-Doc 3917932
- [6] OPG Letter, B. Jackowski to K. Lun and B. Rzentkowski, "DNNP – LTO Application Pre-LTO Submission and Prior Written Notification: Darlington New Nuclear Project Commitments Report Revision Number R010", NK054-REP-01210-00078, December 11, 2025, e-Doc 7611745
- [7] OPG Letter, B. Jackowski to K. Lun and B. Rzentkowski, "Darlington NGS – 2024 Environmental Risk Assessment Addendum for the Darlington Nuclear Site", NK38-CORR-00531-25312, September 24, 2024, e-Doc 7370778
- [8] CNSC Report, [Environmental Protection Review Report – Darlington Nuclear Generating Station](#), January 2025, e-Doc 7285562

Glossary

For definitions of terms used in this document, see [*REGDOC-3.6, Glossary of CNSC Terminology*](#), which includes terms and definitions used in the [*Nuclear Safety and Control Act*](#) and the [*Regulations*](#) made under it, and in [*CNSC regulatory documents*](#) and other publication.