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ORIGINAL/ORIGINAL

CMD: 22-H107

Date signed/Signé le : 3 NOVEMBER 2022

Issue Required Approval for

Délivrer l'approbation requise pour

**Ontario Power
Generation**

**Ontario Power
Generation**

**Pickering Nuclear
Generating Station**

**Centrale nucléaire de
Pickering**

**Request to Extend
Deadline under PROL
48.01/2028 Licence
Conditions 15.1 and 15.4
Related to the End of
Commercial Operations**

**Demande de report de la
date limite aux termes
des conditions 15.1 et
15.4 du permis PERP
48.01/2028 concernant la
fin de l'exploitation
commerciale**

Hearing in writing based solely on
written submissions

Audience par écrit fondée uniquement
sur des mémoires

Scheduled for:
November 2022

Prévue pour :
Novembre 2022

Submitted by:
CNSC Staff

Soumis par :
Le personnel de la CCSN

e-Doc 6884398 (WORD)
e-Doc 6907539 (PDF)

Summary

This CMD pertains to a request for a decision regarding:

- Ontario Power Generation's request to extend the deadline specified under conditions 15.1 and 15.4 of Power Reactor Operating Licence (PROL) 48.01/2028, related to the end of commercial operations of the Pickering Nuclear Generating Station (NGS)

The following actions are requested of the Commission:

- Approve OPG's request to extend the deadline required under conditions 15.1 and 15.4 of PROL 48.01/2028, from December 31, 2022 to June 30, 2023, for the periodic safety review reassessment results and the application to operate the Pickering NGS beyond December 31, 2024

Résumé

Le présent CMD concerne une demande de décision au sujet de :

- La demande d'Ontario Power Generation (OPG) concernant le report de la date limite indiquée aux conditions 15.1 et 15.4 du permis d'exploitation d'un réacteur de puissance (PERP) 48.01/2028 en lien avec la fin de l'exploitation commerciale de la centrale nucléaire de Pickering.

La Commission pourrait considérer prendre les mesures suivantes :

- Approuver la demande d'OPG visant à reporter la date limite indiquée aux conditions 15.1 et 15.4 du permis d'exploitation actuel (PERP 48.01/2028) du 31 décembre 2022 au 30 juin 2023, en ce qui concerne les résultats relatifs à la réévaluation du bilan périodique de la sûreté et de la demande d'exploitation de la centrale nucléaire de Pickering au-delà du 31 décembre 2024.

Signed/Signé le

3 November 2022

**Viktorov,
Alexandre**

A purple rectangular stamp with a white circular logo containing a stylized 'C' and the letters 'PE' below it.

Digitally signed by Viktorov, Alexandre
DN: C=CA, O=GC, OU=CNSC-CCSN, CN="Viktorov, Alexandre"
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Alexandre Viktorov, Ph.D

Director General

Directorate of Power Reactor Regulation

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EXECUTIVE SUMMARY

The CNSC would like to acknowledge that the [Pickering Nuclear Generating Station \(NGS\)](#) is located within the traditional territory of the Wendat, Anishinabek Nation, and the territory covered by the 1923 Williams Treaty Clause #2 area with the Michi Saagiig and Chippewa Nations, which include Curve Lake, Hiawatha, Alderville, Scugog Island, Rama, Beausoleil, and Georgina Island First Nations.

In 2018, the Pickering NGS operating licence was [renewed](#) for a period of 10 years. The licence period covers commercial operation of the units until the end of 2024, followed by 2 to 3 years of stabilization activities to prepare the station for safe storage and eventual decommissioning.

The operation of any Pickering NGS reactor unit beyond December 31, 2024, would constitute a change to Ontario Power Generation's (OPG's) licensing basis and would require authorization from the Commission, in the context of a separate public hearing where Indigenous Nations and communities, members of the public and stakeholders would be able to intervene.

Under licence conditions LC 15.1 and LC 15.4, OPG must inform the CNSC by December 31, 2022, of its intent to operate any reactor unit beyond December 31, 2024. Additionally, should OPG intend to operate beyond December 2024, it must submit to the CNSC on or before December 31, 2022, an Integrated Implementation Plan (IIP) based on a reassessment of the continued validity of the results of the periodic safety review (PSR) conducted in support of the 2018 licence renewal.

In setting the date of December 31, 2022, it was envisioned that this would allow sufficient time for the preparation and conduct of a public hearing should OPG apply for Commission authorization to extend the end of commercial operation of Pickering beyond December 31, 2024.

In 2021, OPG initiated work on the PSR reassessment with the intention to apply for Commission approval to operate Pickering Units 5-8 until December 2025. On September 29, 2022, the Ontario Ministry of Energy [announced](#) its support of the continued operation of Pickering Units 5-8 until September 2026, subject to Commission approval. Due to this announcement, OPG has requested to extend the deadline for the PSR reassessment results and the application required under LC 15.1 and 15.4 from December 31, 2022, to June 30, 2023. This request is in order to complete the additional work required to update the PSR reassessment and IIP for commercial operation to September 2026.

CNSC staff anticipate that an additional 6 months would allow sufficient time for OPG to complete and submit the results of the PSR reassessment for operation of Pickering Units 5-8 into 2026. Additionally, CNSC staff conclude that a 6-month extension will leave sufficient time for a public hearing and Commission decision before December 31, 2024. Therefore, CNSC staff recommend that the Commission approve OPG's request to extend the deadline required under LC 15.1 and 15.4 from December 31, 2022 to June 30, 2023, for the PSR reassessment results and application. This change in deadline is administrative in nature and would not impact plant operations or nuclear safety.

Referenced documents in this CMD are available to the public upon request.

1 OVERVIEW

1.1 Background

The [Pickering Nuclear Generating Station \(NGS\)](#) is located in the Province of Ontario on the north shore of Lake Ontario, in the city of Pickering, and the regional municipality of Durham. The Pickering site lies within the traditional territory of the Wendat, Anishinabek Nation, and the territory covered by the 1923 Williams Treaty Clause #2 area with the Michi Saagiig and Chippewa Nations, which include: Curve Lake, Hiawatha, Alderville, Scugog Island, Rama, Beausoleil, and Georgina Island First Nations. The facility is owned and operated by [Ontario Power Generation Incorporated](#) (OPG).

Pickering NGS consists of eight CANDU pressurized heavy water reactors. Units 1-4 went into service in 1971-1973. Units 2 and 3 are currently in a safe storage state and will remain so until the eventual decommissioning of the station. Units 5-8 were brought into service in 1983-1986.

In 2017, OPG informed the CNSC that Pickering Units 1, 4 and 5-8 would cease commercial operation on December 31, 2024 [1]. To assure the continued safe operation of the station and in support of the 2018 licence renewal, OPG performed a Periodic Safety Review (PSR) in accordance with the requirements of [REGDOC-2.3.3 Periodic Safety Reviews](#). The results of the PSR were documented in an Integrated Implementation Plan (IIP), which was accepted by CNSC staff.

In 2018, the Pickering NGS Power Reactor Operating Licence PROL 48.01/2028, was [renewed](#) for a period of 10 years. This licence period covers commercial operation of the units until the end of 2024, followed by 2-3 years of stabilization activities to prepare the station for safe storage and eventual decommissioning.

1.2 Highlights

As detailed in paragraph 27 of the [Record of Decision](#)¹ from the 2018 Pickering licence renewal, OPG is authorized to commercially operate Pickering NGS until December 31, 2024. Should OPG intend to operate any reactor unit beyond this date, it must notify the CNSC by December 31, 2022. Operation beyond December 31, 2024 would constitute a change in OPG's licensing basis and require Commission authorization in the context of a separate public hearing

¹ *Record of Decision in the matter of Ontario Power Generation Inc. Application to Renew the Nuclear Power Operating Licence for the Pickering Nuclear Generating Station*, paragraph 27: "...OPG will inform the CNSC prior to December 31, 2022 of its intent to operate any reactor unit beyond 2024. This is part of the licensing basis for the Commission's decision herein. The commercial operation of any reactor unit of the PNGS beyond December 31, 2024 would constitute a change in OPG's licensing basis. Operation of any reactor unit beyond this date would require authorization from the Commission in the context of a separate public hearing during which Indigenous groups, members of the public and stakeholders would be able to intervene. An application from OPG for the continued operation of any PNGS reactor units would be submitted to the Commission well before December 31, 2024 to ensure that sufficient time is available for such a proceeding to take place."

during which Indigenous Nations and communities, members of the public and stakeholders would be able to intervene.

PROL 48.01/2028 Licence Conditions LC 15.1 and LC 15.4 and the accompanying Licence Conditions Handbook (LCH), provide specific criteria should OPG intend to operate any reactor unit beyond December 31, 2024, including that OPG must perform and complete a reassessment of the continued validity of the PSR results and submit a revised IIP by or before December 31, 2022.

In setting the date of December 31, 2022 as part of the licensing basis, it was envisioned that should OPG apply for Commission authorization to extend the end of commercial operation of Pickering NGS beyond December 31, 2024, this 2-year window would allow sufficient time for CNSC staff to review the PSR reassessment results as well as sufficient time for the preparation and conduct of a public hearing.

On September 29, 2022, the Ontario Ministry of Energy [announced](#) its support of Pickering Units 5-8 continued operation until September 2026, subject to Commission approval. Therefore, OPG has requested to extend the deadline for the PSR reassessment results and the application required under LC 15.1 and 15.4 from December 31, 2022, to June 30, 2023 [3].

2 MATTERS FOR CONSIDERATION

LC 15.1 states, *The licensee shall implement the Integrated Implementation Plan*

This LC refers to the IIP resulting from the PSR conducted in support of the 2018 Pickering licence renewal. While the PSR covers the entire licence period (2018-2028), it assumed end of commercial operation in 2024 followed by stabilization activities from 2025-2028. Therefore, should OPG intend to operate any Pickering unit beyond December 31, 2024, OPG is required under LC 15.1 to reassess the impact of such extended operation on the licensing basis and continued plant safety and to submit the results of the reassessment to CNSC staff in accordance with [REGDOC-2.3.3 Periodic Safety Reviews](#).

Specifically, as detailed in section 15.1 of the LCH:

For any of the Pickering units to operate beyond December 31, 2024, the licensee shall perform and complete by or before December 31, 2022 a reassessment of the continued validity of the PSR results and, as a minimum, shall:

- *Reassess the results of the global assessment included in the PSR Global Assessment Report (GAR);*
- *Include new or revised requirements, expectations and practices that became available since the freeze-date of the PSR stated in P-REP-03680-0001, “Pickering NGS Periodic Safety Review 2 (PSR2) Basis Document”;*

- *For any newly identified findings, utilize the consolidation, prioritization and ranking methods employed in performing the PSR global assessment to formulate new global issues and resolutions plans;*
- *Evaluate the continued validity of conclusions reached in PSR; and*
- *Revise the IIP by incorporation the results of the reassessment as new or modified IIP actions, and submit the revised IIP for CNSC acceptance.*

LC 15.4 states, *The licensee shall implement and maintain plans for end of commercial operations of all Pickering units.*

This LC establishes the licensing basis for Pickering end of commercial operation and, along with the Commission's 2018 licence renewal [decision](#), requires that operation beyond by December 31, 2024 be authorized by the Commission.

Detailed criteria are provided in section 15.4 of the LCH should OPG intend to operate any unit beyond December 31, 2024. Specifically, section 15.4 states:

The licensee shall notify the CNSC, in writing and no later than December 31, 2022, of its intent to operate any reactor unit of Pickering NGS beyond December 31, 2024, and provide as a minimum the following:

- *Changes to OPG P-PLAN-09314-00003, "Pickering Site Strategic Plan";*
- *Revised dates for end of commercial operation of each Pickering operating reactor units;*
- *The reassessment of the impact of operations beyond 2024, based on the global assessment included in P-REP-03680-00032, "Pickering NGS PSR2 Global Assessment Report", and the consequential impact on identifying new findings that could result in new IIP actions (See also LC 15.1); and*
- *Request for CNSC acceptance, by a specific date, of potential new or revised actions in the Pickering NGS Periodic Safety Review 2 (PSR2) Integrated Implementation Plan (See LC 15.1 for WN of the IIP).*

OPG has confirmed to CNSC staff that it will notify the CNSC of the final end of commercial operation dates of all Pickering units and will submit the revised *Pickering Site Strategic Plan* by December 31, 2022 (bullets 1 and 2 under LCH section 15.4).

In 2021, OPG initiated its PSR reassessment with the intention of applying for Commission authorization to extend commercial operation of Units 5-8 until December 2025, in alignment with previous direction from the Ontario government [2]. To date OPG has completed the majority of the actions required under LC 15.1 to complete a reassessment of the continued validity of the PSR

results to extend commercial operation to the end of 2025. As per LC 15.1, OPG identified all gaps and completed a Global Assessment Report (GAR) to support commercial operation of Units 5-8 to December 2025 and submitted this to CNSC staff. CNSC staff's review concluded that the GAR is satisfactory, meets the requirements of LC 15.1 and is in accordance with the elements of REGDOC-2.3.3. As per its schedule, OPG is expected to submit to CNSC staff an IIP to support commercial operation to end of 2025 by November 2022.

On September 29, 2022, the Ontario Ministry of Energy [announced](#) its support of Pickering Units 5-8 continued commercial operation until September 2026. As a result of this announcement, OPG must conduct additional work to reconfirm the continued validity of the PSR results and has requested a 6-month extension to complete and submit to CNSC staff the PSR reassessment results required for operation of Pickering Units 5-8 into 2026 and its application to operate Pickering units 5-8 beyond December 31, 2024 [3].

Due to the extensive work already completed by OPG on the PSR reassessment to support commercial operation to the end of 2025, CNSC staff anticipate that a 6-month extension is sufficient for OPG to complete and submit the new PSR reassessment results required to meet LC 15.1 and LC 15.4 for operation of Pickering Units 5-8 into 2026. In addition, CNSC staff anticipate that the remaining 18-month window will allow sufficient time for staff and intervenors to prepare for a public hearing and for the Commission to make a decision before December 31, 2024.

OPG's request is administrative in nature and does not impact plant operations or nuclear safety.

2.1 Proposed Changes to the Licence Conditions Handbook

Should the Commission approve OPG's request, CNSC staff will update the corresponding sections of the LCH to reflect this decision. For information, the proposed changes to the relevant sections of the LCH are provided in Appendix A.

3 OVERALL CONCLUSIONS AND RECOMMENDATIONS

3.1 Overall Conclusions

CNSC staff conclude that OPG's request for a 6-month extension to the deadline for the PSR reassessment results and the application required under LC 15.1 and 15.4 is acceptable and will allow sufficient time for OPG to complete and submit the results of the PSR reassessment for operation of Pickering Units 5-8 into 2026. Additionally, CNSC staff conclude that a 6-month extension will leave sufficient time for staff and intervenors to prepare for a public hearing and for the Commission to make a decision before December 31, 2024.

3.2 Overall Recommendations

CNSC staff recommend the following:

- The Commission approve OPG's request to extend the deadline required under PROL 48.01/2028 LC 15.1 and 15.4 from December 31, 2022 to June 30, 2023, for the PSR reassessment results and application to operate Pickering Units 5-8 beyond December 31, 2024.

If the Commission approves OPG's request, CNSC staff will revise Sections 15.1 and 15.4 of the LCH to reflect this decision.

REFERENCES

1. OPG Letter, R. Lockwood to G. Frappier, “End Date of Commercial Operations for Pickering NGS”, June 28, 2017. CD# P-CORR-00531-04930, e-Doc 5290277.
2. OPG Letter, J. Franke to K. Campbell, “Pickering NGS – Intent to Pursue CNSC Authorization for Operation of Pickering Units 5-8 through December 2025”, December 16, 2021. CD# P-CORR-00531-22820, e-Doc 6706801
3. OPG letter, J. Franke to D. Saumure, “Pickering NGS – Request to Extend Deadline Under PROL 48.01/2028 Licence Conditions 15.1 and 15.4 Related to the End of Commercial Operation”, October 5, 2022. CD# P-CORR-00531-23042, e-Doc 6885962

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 publications.

Additional terms and acronyms used in this CMD are listed below.

GAR	Global Assessment Report
IIP	Integrated Implementation Plan
LC	Licence Condition
LCH	Licence Conditions Handbook
NGS	Nuclear Generating Station
OPG	Ontario Power Generation
PNGS	Pickering Nuclear Generating Station
PROL	Power Reactor Operating Licence

A. PROPOSED CHANGES TO THE LICENCE CONDITIONS HANDBOOK

Should the Commission approve OPG's request for a 6-month extension for the PSR reassessment and application deadline required under LC 15.1 and 15.4, CNSC staff will update the corresponding sections of the LCH to reflect this decision. The proposed changes to LCH sections 15.1 and 15.4 are provided below (relevant paragraphs only). New text is in bold and deleted text is in strikethrough.

A.1 LCH Section 15.1 – Periodic Safety Review Integrated Implementation Plan

Licence Condition 15.1:

The licensee shall implement the Integrated Implementation Plan.
--

Preamble:

...

Compliance Verification Criteria:

Licensee Documents that Require Notification of Change		
Document #	Title	Prior Notification
P-REP-03680-00031	Pickering NGS Periodic Safety Review 2 (PSR2) Integrated Implementation Plan	Yes
P-INS-03680-00001	Pickering IIP Administration	Yes

Licensing Basis Publications				
Org	Document #	Title	Version	Effective Date
CNSC	REGDOC-2.3.3	Periodic Safety Reviews	2008	2018-09-01

...

Detailed criteria for implementing the results of the PSR are as follows:

...

6. **As detailed in the Record of Decision (e-doc xxxxxxxx)**, for any of the Pickering units to operate beyond December 31, 2024, the licensee shall perform and complete by or before ~~December 31, 2022~~ **June 30, 2023** a reassessment of the continued validity of the PSR results and, as a minimum, shall:
- a. Reassess the results of the global assessment included in the PSR *Global Assessment Report* (GAR);
 - b. Include new or revised requirements, expectations and practices that became available since the freeze-date of the PSR stated in P-REP-03680-0001, *Pickering NGS Periodic Safety Review 2 (PSR2) Basis Document*;
 - c. For any newly identified findings, utilize the consolidation, prioritization and ranking methods employed in performing the PSR global assessment to formulate new global issues and resolutions plans;
 - d. Evaluate the continued validity of conclusions reached in PSR; and
 - e. Revise the IIP by ~~incorporation~~ **incorporating** the results of the reassessment as new or modified IIP actions, and submit the revised IIP for CNSC acceptance.

A.2 LCH SECTION 15.4 – END OF COMMERCIAL OPERATION

Licence Condition 15.4:

The licensee shall implement and maintain plans for end of commercial operations of all Pickering units.

Preamble:

...

Compliance Verification Criteria:

Licensee Documents that Require Notification of Change		
Document #	Title	Prior Notification
P-PLAN-09314-00003	Pickering Site Strategic Plan	No

CNSC regulatory requirements and expectations for the systematic preparation for the end of commercial operation of Pickering NGS are detailed in CNSC letter, e-doc 5307950, dated August 2, 2017.

End of Commercial Operation - General Requirements

- The licensee shall notify the CNSC, in writing and no later than December 31, 2022, of its intent to operate any reactor unit of Pickering NGS beyond December 31, 2024 and provide as a minimum the following:
 - Changes to OPG P-PLAN-09314-00003, *Pickering Site Strategic Plan*;
 - Revised dates for end of commercial operation of each Pickering operating reactor units;
- **As detailed in the Record of Decision (e-doc xxxxxxx), OPG shall provide no later than June 30, 2023:**
 - The reassessment of the impact of operations beyond 2024, based on the global assessment included in P-REP-03680-00032, *Pickering NGS PSR2 Global Assessment Report*, and the consequential impact on identifying new findings that could result in new IIP actions (See also LC 15.1); and
 - Request for CNSC acceptance, by a specific date, of potential new or revised actions in the *Pickering NGS Periodic Safety Review 2 (PSR2) Integrated Implementation Plan* (See LC 15.1 for WN of the IIP).