Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

UNCLASSIFIED/NON CLASSIFIÉ

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CMD: 25-H101

Date signed/Signé le: 07 MARCH 2025

A Licence Amendment

Ontario Power Generation Inc.

Pickering Waste Management Facility

Hearing in writing based solely on written submissions

Scheduled for:

June 2025

Submitted by:

CNSC Staff

Modification d'un permis

Ontario Power Generation Inc.

Installation de gestion des déchets de Pickering

Audience par écrit fondée uniquement sur des mémoires

Prévue en:

Juin 2025

Soumis par :

Le personnel de la CCSN

e-Doc 7387595 (WORD)
e-Doc 7477343 (PDF)

Summary

This CMD presents information about the following matter of regulatory interest with respect to Ontario Power Generation Incorporated (OPG):

- An application to amend the Pickering Waste Management Facility licence to authorize the construction and operation of the Pickering Component Storage Structure.

CNSC staff recommend the Commission consider taking the following actions:

- Amend the Pickering Waste Management Facility licence to authorize OPG to construct and operate the Pickering Component Storage Structure.
- Delegate authority for administration of licence condition 15.1 as outlined in Part 2 of this CMD.
- Determine whether, taking into consideration the information provided in this CMD and any other relevant information forthcoming, the CNSC, as an agent of the Crown, has upheld the honour of the Crown and fulfilled its obligations to consult and, where appropriate, accommodate Indigenous peoples, pursuant to section 35 of the *Constitution Act*, 1982.

The following items are attached:

- The current Waste Facility Operating Licence WFOL-W4-350.00/2028
- The proposed Waste Facility Operating Licence WFOL-W4-350.01/2028
- The proposed changes to the licence conditions handbook

Résumé

Le présent CMD fournit de l'information sur les questions d'ordre réglementaire suivantes concernant Ontario Power Generation Incorporated (OPG):

- Une demande visant à modifier le permis de l'installation de gestion des déchets de Pickering pour autoriser la construction et l'exploitation de la structure de stockage des composants de Pickering.

Le personnel de la CCSN recommande à la Commission de considérer prendre les mesures suivantes:

- Modifier le permis de l'installation de gestion des déchets de Pickering pour autoriser la construction et l'exploitation de la structure de stockage des composants de Pickering
- Déléguer le pouvoir pour d'administration de la condition de permis 15.1, comme indiqué dans la partie 2 du présent CMD.
- Déterminer si, compte tenu des informations fournies dans le présent CMD et de toute autre information pertinente à venir, la CCSN, en tant en tant qu'agent de la Couronne, a défendu l'honneur de la Couronne et rempli ses obligations de consulter et, le cas échéant, d'accommoder les peuples autochtones, conformément à l'article 35 de la Loi constitutionnelle de 1982.

Les pièces suivantes sont jointes :

- Le permis d'exploitation d'une installation de déchets en vigueur WFOL-W4-350.00/2028
- Le permis d'exploitation d'une installation de déchets proposé WFOL-W4-350.01/2028
- Les modifications proposées au manuel des conditions de permis

Signed/Signé le

07 March 2025 / 07 mars 2025

Greencorn, Nancy

Digitally signed by Greencorn, Nancy
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Nancy Greencorn on behalf of Luc Sigouin

Director General

Directorate of Nuclear Cycle and Facilities Regulation

Directeur générale de la

Direction de la règlementation du cycle et des installations nucléaires

TABLE OF CONTENTS

Land Acknowledgement

The Pickering Waste Management Facility is located on the site of the Pickering Nuclear Generating Station on the north shore of Lake Ontario, in the city of Pickering, Ontario and lies within the traditional territory of the Michi Saagiig Anishinaabe people. These lands are covered by the Williams Treaty between Canada and the Mississauga and Chippewa Nations.

Plain Language Summary

Ontario Power Generation Incorporated (OPG) owns and operates the Pickering Waste Management Facility (PWMF) under a Class IB waste facility operating licence (WFOL). At the PWMF, OPG processes and stores dry storage containers containing used nuclear fuel. Intermediate-level waste from the refurbishment of Pickering Nuclear Generating Station (PNGS) Units 1 to 4 is also stored in dry storage modules.

On May 31, 2024, OPG submitted an application to amend the PWMF licence to authorize the construction and operation of a new structure identified as the Pickering Component Storage Structure (PCSS). OPG has stated that this structure is required for the storage of low- and intermediate-level waste resulting from the proposed refurbishment activities of PNGS Units 5 to 8 and future PNGS decommissioning activities. Authorization to perform refurbishment activities is not within the scope of this application or CNSC staff's Commission member document (CMD). OPG must submit a separate application requesting authorization from the Commission to perform refurbishment activities – a process that is not influenced by a decision on this application to construct and operate the proposed PCSS.

OPG's application included an evaluation of the safety impact of the proposed changes through a safety assessment and a predictive environmental risk assessment. The following is a summary of the pertinent information provided by OPG in those documents:

- The base case for the safety analysis considered a PCSS design based on the Darlington Waste Management Facility Retube Waste Storage Building and the Western Waste Management Facility Retube Waste Containers (RWCs).
- The estimated waste quantities that would be stored within the proposed PCSS include 48 steam generators stored on saddles (not size reduced) and 140 RWCs (to contain pressure tubes, feeders, calandria tubes, and end fittings). Each RWC has a storage capacity of approximately 1.78 cubic meters.
- The construction and operation of the proposed PCSS will not result in any unacceptable risks to human and ecological receptors located in the vicinity of the Pickering nuclear site.
- The construction and operation of the proposed PCSS will have a negligible effect on the safe operation of the PWMF, and the safety of the public and workers.
- Doses to workers and the public resulting from credible malfunction/accident scenarios are estimated to be less than the applicable dose acceptance criteria.

- Should the licence amendment be granted, OPG expects the proposed PCSS to be operational by April 2027, and all required staff working at the PCSS would be fully trained before waste is received and stored in the PCSS.

The purpose of this CMD is to outline CNSC's staff review of OPG's application, including their conclusions and recommendations, in order to inform the Commission's decision on OPG's request to amend the PWMF licence.

The public, Indigenous Nations and communities, and other interested parties were invited to participate in this regulatory process. The CNSC Participant Funding Program provided up to $75,000 to enable participation.

CNSC staff conclude that:

- OPG has demonstrated that the design considerations for the construction of the proposed PCSS meet the regulatory requirements.
- OPG has adequately assessed the hazards associated with the proposed activities through safety assessments and has demonstrated an adequate level of protection of workers, the public, and the environment.
- OPG remains qualified to carry on the activities authorized in the WFOL and continues to make adequate provisions for the protection of workers, people and the environment.

Therefore, CNSC staff recommend that the Commission amend the PWMF WFOL to authorize OPG to construct and operate the proposed PCSS.

Referenced documents in this CMD are available to the public upon request, subject to confidentiality considerations.

CMD STRUCTURE

This Commission Member Document (CMD) is presented in 2 parts.

Part 1 of this CMD includes:

1. an overview of the matter being presented;
2. overall conclusions and overall recommendations;
3. general discussion pertaining to the safety and control areas (SCAs) that are relevant to this submission;
4. discussion about other matters of regulatory interest; and
5. appendices material that complements items 1 through 4.

Part 2 of this CMD provides all available information pertaining directly to the current licence, proposed changes to the licence and proposed changes to the Licence Conditions Handbook.

1. Overview

1.1 Background

Ontario Power Generation (OPG) owns and operates the Pickering Waste Management Facility (PWMF) under a Class IB Waste Facility Operating Licence (WFOL) WFOL-W4-350.00/2028, valid from April 1, 2018, to August 31, 2028 [1].

At the PWMF, OPG receives, processes, and stores dry storage containers (DSCs) containing used nuclear fuel (high-level radioactive waste) generated at the Pickering Nuclear Generating Station (PNGS). DSCs are processed in the dry storage container processing building and stored in the DSC storage buildings.

OPG also stores intermediate-level radioactive waste from refurbishment of PNGS units 1-4 in dry storage modules (DSMs) at the Retube Component Storage Area (RCSA). The RCSA is closed to the receipt of any new intermediate level radioactive waste and the DSMs undergo periodic inspections, as well as regular monitoring and maintenance. No waste has been added to the RCSA since 1993.

1.2 PWMF Location and Layout

The PWMF is in the Province of Ontario on the North shore of Lake Ontario, in the city of Pickering and the regional municipality of Durham and lies within the traditional territory of the Michi Saagiig Anishinaabe people. These lands are covered by the Williams Treaty between Canada and the Mississauga and Chippewa Nations. The facility lies 32 km northeast of downtown Toronto and 21 km southwest of Oshawa.

The PWMF spans over two areas, Phase I and Phase II, as pictured in Figure 1. Phase I is located within the protected area of the PNGS and consists of one DSC processing building, two DSC storage buildings (SB) (SB#1 and SB#2) and the RCSA. Phase II of the PWMF is located north-east of Phase I and is contained within its own protected area, separate from the protected area of the PNGS, but within the Pickering site. Phase II contains SB#3 and SB#4. The PWMF WFOL currently authorizes OPG to construct two additional DSC SBs, SB#5 and SB#6.

Figure 1 - Aerial view of the PWMF

1.3 Highlights

On May 31, 2024, OPG submitted an application [2] to amend the PWMF licence to authorize the construction and operation of a new structure identified as the Pickering Component Storage Structure (PCSS). These activities are not within the current licensing basis. In November 2024, revised documents that became an addendum to OPG's application [3] were submitted by OPG in response to Canadian Nuclear Safety Commission (CNSC) staff comments on the application. The addendum captured updates to the safety assessment and predictive environmental risk assessment (PERA).

OPG has stated that the proposed PCSS is required for the storage of low- and intermediate-level waste (L&ILW) resulting from proposed refurbishment activities of Pickering Units 5 to 8 and future PNGS decommissioning activities. Authorization to perform refurbishment activities is not within the scope of this PWMF licence amendment application or CNSC staff's Commission member document (CMD). OPG must submit a separate application requesting authorization from the Commission to perform refurbishment activities – a process that is not influenced by a decision on this application to construct and operate the proposed PCSS.

OPG's application included an evaluation of the safety impact of the proposed changes through a safety assessment and PERA. The following is a summary of pertinent information provided by OPG in those documents:

- The base case for the safety analysis considered a PCSS design based on the Darlington Waste Management Facility (DWMF) Retube Waste Storage Building and on the Western Waste Management Facility (WWMF) Retube Waste Containers (RWCs).
- The estimated waste quantities that would be stored in the proposed PCSS include 48 steam generators stored on saddles (not size reduced) and 140 RWCs (to contain pressure tubes, feeders, calandria tubes, and end fittings). Each RWC has a storage capacity of approximately 1.78 cubic meters.
- The construction and operation of the proposed PCSS will not result in any unacceptable risks to human and ecological receptors located in the vicinity of the Pickering nuclear site.
- The construction and operation of the proposed PCSS will have a negligible effect on the safe operation of the PWMF, and the safety of the public and workers.
- Doses to workers and the public resulting from credible malfunction/accident scenarios are estimated to be less than the applicable dose acceptance criteria.
- Should the licence amendment be granted, OPG expects the proposed PCSS to be operational by April 2027, and all required staff working at the PCSS would be fully trained before waste is received and stored in the PCSS.

In the current licence, OPG is authorized to construct two additional DSC storage buildings (SB5 and SB6). There are licence conditions specific to the DSC storage buildings requiring that, prior to construction and operation, OPG provide specific documents that are acceptable by the Commission, or a person authorized by the

Commission. Should the licence be amended, OPG has committed to submitting the following documents for the PCSS to align with these same licence conditions as follows:

- Prior to the commencement of construction activities, OPG will provide to CNSC staff for review and acceptance by the Commission, or a person authorized by the Commission, the design requirements, environmental management plan, and construction verification plan in accordance with licence condition 15.1.
- Prior to the commencement of operation, OPG will provide to CNSC staff for their review and acceptance by the Commission, or a person authorized by the Commission, a final commissioning report in accordance with licence condition 15.2.

This CMD includes information on CNSC staff's review of OPG's application and supporting documents, with information on:

1. The environmental protection review performed by CNSC staff.
2. CNSC staff performance assessments in safety and control areas (SCAs) relevant to the proposal during the current licence period, including OPG's safety case.
3. Engagement with the public and Indigenous Nations and communities.

1.4 Overall Conclusions

CNSC staff's assessment of OPG's application, including the supporting documents, concludes the following:

1. OPG has demonstrated that design considerations for the construction of the proposed PCSS meet regulatory requirements.
2. OPG has adequately assessed the hazards associated with proposed activities through safety assessments and demonstrated an adequate level of protection of the workers, the public, and the environment.
3. OPG remains qualified to carry on the activities authorized in the WFOL and continues to make provisions to protect workers, people, and the environment.

1.5 Overall Recommendations

CNSC staff recommend that the Commission:

1. **Conclude,** pursuant to paragraphs 24(4)(a) and (b) of the *Nuclear Safety and Control Act* (*NSCA*) that the licensee:

   a) **Is qualified** to carry out the activities authorized by the licence.

   b) **Will make adequate provision** for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

2. **Amend** the PWMF licensing basis to authorize OPG to construct and operate the PCSS.

3. **Amend** the PWMF licence WFOL-W4-350.00/2028 to:
   a) **Add** the PCSS under paragraph (iv) of Part IV for Licensed Activities (see Part 2 of this CMD).
   b) **Add** the requirement for prior acceptance of construction documents by the Commission, or a person designated by the Commission, within licence condition 15.1 (see Part 2 of this CMD).
4. **Delegate** authority for administration of licence condition 15.1 as outlined in Part 2 of this CMD.
5. **Determine** whether, taking into consideration the information provided in this CMD and any other relevant information forthcoming, the CNSC, as an agent of the Crown, has upheld the honour of the Crown and fulfilled its obligations to consult and, where appropriate, accommodate Indigenous peoples, pursuant to section 35 of the Constitution Act, 1982.

Should the Commission accept CNSC staff's recommendation,

a. CNSC staff will revise the PWMF Licence Conditions Handbook (LCH) [4] as specified in Part 2 of this submission.

b. Prior to the commencement of PCSS construction activities, OPG will submit the design requirements, environmental management plan, and construction verification plan in accordance with licence condition 15.1.

c. Prior to the commencement of PCSS operation, OPG will provide submit a final commissioning report in accordance with licence condition 15.2.

2. ENVIRONMENTAL PROTECTION REVIEW

CNSC staff reviewed the licence application to identify which type of environmental review was required to be conducted, if applicable. As part of this process, CNSC staff must assess whether an integrated impact assessment or a federal lands review under the *Impact Assessment Act* (IAA) is required. For this licence amendment application, neither are required because the licence amendment application does not include activities listed in the IAA or *Physical Activities Regulations* that require an impact assessment, or that meet the definition of a project on federal lands.

CNSC staff conduct environmental protection reviews (EPRs) for all licence applications with potential environmental interactions, in accordance with the CNSC's mandate under the NSCA and associated Regulations. The EPR informs the Commission's conclusion on whether the proposal provides adequate protection of the environment and the health of people.

An EPR was conducted for this application. CNSC staff's assessment included a review of the application and supporting documents, including the environmental risk assessment, the PERA, annual compliance monitoring reports, and past environmental performance for the facility. As mentioned in section 3.6, CNSC staff have found that the information provided by OPG regarding environmental protection is sufficient to meet the applicable regulatory requirements under the NSCA and associated Regulations.

Additionally, CNSC staff prepared an EPR report for the Pickering Nuclear Site that summarizes the environmental performance of the PNGS and the PWMF from 2016-2022. The report is available on the CNSC website.

CNSC staff will continue to verify and ensure that, through ongoing licencing and compliance activities and reviews, the environment and the health of persons are and will continue to be protected.

3. GENERAL ASSESSMENT OF SCAS

CNSC staff review and assess an applicant's proposed measures and controls, and if applicable, a licensee's past performance in each SCA. Although CNSC's staff assessment of the application considers all SCAs, only those that are most relevant in providing a good overall indication of how regulatory requirements will be met by applicants and the past safety performance of the licensees are covered in this CMD. OPG's proposed licence amendment to authorize the construction and operation of the PCSS did not trigger significant changes to certain OPG governance and program documents, meaning there were either no impacts or negligible impacts on certain SCAs and, therefore, those SCAs have been excluded in this CMD.

This section provides information, organized by SCA, regarding CNSC staff's assessment of OPG's PWMF licence amendment application requesting Commission authorization to construct and operate the proposed PCSS. CNSC staff's assessment also considered information gathered over the past five years of the current licence period, from 2019 through to the end of 2023. The sources of this information included inspections and desktop reviews.

Functional Area	Safety and Control Area	Relevant to this CMD?
Management	Management System	No
	Human Performance Management	No
	Operating Performance	Yes
Facility and Equipment	Safety Analysis	Yes
	Physical Design	Yes
	Fitness for Service	Yes
Core Control Processes	Radiation Protection	Yes
	Conventional Health and Safety	No
	Environmental Protection	Yes
	Emergency Management and Fire Response	No
	Waste Management	Yes
	Security	No
	Safeguards and Non-Proliferation	No
	Packaging and Transport	No

The following table identifies other matters that are relevant to this CMD.

Other Matters of Regulatory Interest	
Area	**Relevant to this CMD?**
Indigenous Consultation and Engagement	Yes
Other Consultation	No
Cost Recovery	No
Financial Guarantees	Yes
Improvement Plans and Significant Future Activities	No
Licensee's Public Information Program	Yes
Nuclear Liability Insurance	No

3.1 Operating Performance

The operating performance SCA includes an overall review of the conduct of the licensed activities and the activities that enable effective performance.

The specific areas (SpAs) comprising this SCA that are relevant to this CMD include:

- Conduct of licensed activity
- Procedures
- Reporting and trending

3.1.1 Discussion

OPG is required by its licence to implement and maintain an operating program, which includes a set of operating limits. The operating limits and conditions for the PWMF are contained in the safety report. OPG has policies, programs, methods and procedures in place for the safe operation and maintenance of its licensed nuclear facility. OPG provides a summary of compliance against these operating limits and conditions as part of their annual reports to the CNSC.

At the PWMF, OPG has safely handled and stored radioactive wastes generated at the PNGS. OPG has experience constructing and operating structures for storage of refurbishment wastes at its other licensed waste management facilities, such as the Darlington Retube Waste Storage Building. Thus, although construction and operation of the proposed PCSS is not within the current PWMF licensing basis, the process of handling and storing wastes is similar to OPG's current licensed activities.

OPG's application provides that the impact to procedures at the PWMF and licensing basis documents is expected to be minimal [2]. CNSC staff review procedural-level documents as part of ongoing compliance verification activities to ensure proper maintenance of procedures to reflect actual practices as well as procedural adherence by OPG personnel.

OPG has a requirement in the existing PWMF LCH to ensure that procedures are current, periodically reviewed and updated, and complied with at all times. In consideration of this requirement and the impact of this proposed amendment, OPG has committed to undertaking the following:

- Updating the licensing basis document "Operating Policies and Principles, Pickering Waste Management Facility" prior to the operation of the proposed PCSS.
- Updating the licensing basis document "Pickering Waste Management Facility – Safety Report" at the time of its next scheduled review in 2028.
- Updating the licensing basis document "Preliminary Decommissioning Plan – Pickering Waste Management Facility" and the associated Financial Guarantee (FG) at the time of the next scheduled FG submission in 2027. Note that in accordance with licence condition G.3, the impact of PCSS must be considered in OPG's annual report to the CNSC demonstrating that adequate funding is in place to cover decommissioning costs. OPG has reported their Decommissioning Segregated Fund as being overfunded with enough surplus to conservatively accommodate expected costs associated with PCSS decommissioning.

- Developing a Waste Acceptance Criteria (WAC) document for the proposed PCSS based on operating experience and bounded by criteria in OPG's safety assessment for this application where the WAC in place at another OPG WMF undertaking similar activities was considered.

Should the Commission authorize the licensee's request, prior to construction and operation of the proposed PCSS, OPG has also committed to following existing PWMF licence conditions (see section 1.3) to submit construction and commissioning documentation to CNSC staff for review and acceptance by the Commission, or a person authorized by the Commission. These licence conditions are currently specific to DSC storage buildings; however, Licensed Activities referred to by these conditions will be revised to include the PCSS should the Commission approve this licence amendment.

OPG's request does not impact the reporting regulatory requirements.

3.1.2 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.1.2.1 Past Performance

CNSC staff have assessed OPG's performance under the Operating Performance SCA at the PWMF and conclude that during the licence term to date, OPG has met the applicable regulatory requirements. OPG has experience with managing both steam generator waste and reactor component waste at their other licensed WMFs (Western and Darlington) where compliance with regulatory requirements has been summarized in the CNSC's Nuclear Power Generating Sites Regulatory Oversight Reports.

3.1.2.2 Regulatory Focus

CNSC staff will continue to verify OPG performance and compliance in all aspects of the Operating Performance SCA through regulatory oversight activities including inspections and desktop reviews of relevant program documentation.

3.1.2.3 Proposed Improvements

CNSC staff did not identify any improvements related to the Operating Performance SCA with respect to this proposed amendment.

3.1.3 Conclusion

CNSC staff conclude that OPG has adequately assessed impacts of the proposed licence amendment upon the Operating Performance SCA. Based on CNSC staff assessment of OPG's application including supporting documents and past performance, OPG's operating program is adequate for the proposed licence amendment.

3.2 Safety Analysis

The Safety Analysis SCA covers the maintenance of the safety analysis that supports the overall safety case for the facility. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventative measures and strategies in reducing the effects of such hazards.

The SpAs comprising this SCA that are relevant to this CMD include:

- Deterministic safety analysis
- Hazard analysis

3.2.1 Discussion

Paragraph 3(1)(i) of the *General Nuclear Safety and Control Regulations* (GNSCR) requires that a description and the results of any test, analysis or calculation performed to substantiate the information included in the application. Paragraph 6(a) of the *Class I Nuclear Facilities Regulations* (CINFR) requires that an application for a licence to operate include a description of the structures at the nuclear facility, including their design and their design operating conditions. Paragraph 6(b) of the CINFR requires that an application for a licence to operate include a description of the systems and equipment at the nuclear facility, including their design and their design operating conditions. Paragraph 6(c) requires that an application for a licence to operate include a final safety analysis report (SAR).

The purpose of the SAR is to confirm that the consequences of a range of events are acceptable. It includes an integrated assessment of the facility to demonstrate, among other things, adequate safety for external events such as fires, floods, and tornados, and adequate protective features to ensure the effects of an event do not impair safety related systems, structures, and components.

Conditions in the PWMF LCH require that OPG review, revise as necessary, and submit their SAR at a minimum of once every five years. In November 2023, OPG submitted the latest revision of the document which became a part of the licensing basis.

OPG's application for this proposed licence amendment included a safety assessment that demonstrated the safety case through defence in depth. OPG assessed the impact of the proposed licenced activities, and performed re-analyses where needed. OPG also assessed the impact on their hazards analysis and determined that there is no change in the results.

In the safety assessment, OPG applied several assumptions, including:

- The only types of waste expected to be stored at the PCSS are steam generators and fuel channel components from the Pickering Nuclear Generating Station.
- The geometry, materials, layouts, and fuel (inside DSCs) decay times used in this assessment have been previously assumed in existing SAR for the modelling of SB 3/4/5. Due to the close proximity of the proposed PCSS site to DSC storage buildings, DSCs are considered for their impact on the doses in order to ensure workers are protected.

- The list of radionuclides considered in the malfunction and accident assessment is consistent with those in a previous submission related to a similar project at the WWMF.
- The steam generator radionuclide inventory was based on direct measurements of Co-60 activity. Other radionuclide activities were quantified by applying scaling factors to the direct measurements.

CNSC staff evaluated OPG's application and the existing SAR against REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities*. With respect to normal operation, the results of the safety assessment are consistent with operating experience from similar work that OPG has carried out at WWMF. There are no significant changes of safety related parameters during normal operations compared to currently authorized activities. However, OPG has been asked to provide more information on the negligible risk of soil liquefaction in the construction and operation of the proposed PCSS, which CNSC staff would consider prior to recommending the commencement of construction activities under the aforementioned licence condition 15.1.

3.2.2 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.2.2.1 Past Performance

OPG has performed several safety assessments to ensure the safety of its operations. CNSC staff have reviewed these safety assessments and found that they meet regulatory requirements.

OPG utilized a probabilistic approach to establish a list of credible accident conditions. Assessment of the consequences of credible accident conditions was performed using deterministic approach. Both probabilistic and deterministic approaches were established and maintained by OPG in a consistent manner during the current licensing period.

3.2.2.2 Regulatory Focus

CNSC staff continue to monitor OPG's performance in this area through regulatory oversight activities including desktop reviews and inspections of OPG's compliance reporting, and revisions to relevant program documentation pertaining to this SCA.

OPG has committed to submitting supporting information on the negligible risk of soil liquefaction, and this will be reviewed by CNSC staff prior to commencement of construction activities under licence condition 15.1.

3.2.2.3 Proposed Improvements

REGDOC-2.4.4, *Safety Analysis for Class IB Nuclear Facilities*, was approved by the Commission in June 2022. A formal gap analysis of the safety analysis program and safety analysis was performed by OPG with respect to requirements for conduct of safety analysis, periodic reviews, clear regulatory expectations on SAR documentation and application of the graded approach. Full implementation in the SAR is expected to be completed by December 2028.

3.2.3 Conclusion

CNSC staff conclude that the licensee has demonstrated an adequate level of protection over a broad range of operating conditions. OPG's assumptions in the safety assessment for the proposed PCSS are based on proven and/or verified sources of data and that there are no significant changes of safety related parameters during normal operations compared to currently authorized activities. OPG will submit supporting information to CNSC staff on the negligible risk of soil liquefaction, which will be reviewed prior to staff making a recommendation to commence construction activities under licence condition 15.1.

3.3 Physical Design

The Physical Design SCA covers activities that impact the ability of structures, systems and components to meet and maintain their design basis given new information arising over time and taking changes in the external environment into account.

The SpAs comprising this SCA that are relevant to this CMD include:

- Design governance
- Facility design
- Structure design

3.3.1 Discussion

Section 3 of the CINFR requires a licence application to include (a) a description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone, (b) plans showing the location, perimeter, areas, structures and systems of the nuclear facility; and that Applications for a Licence to Operate include a description of the structures at the nuclear facility, including their design and their design operating conditions.

Conditions in the current PWMF LCH require that:

- Facility design and changes to facility design be accurately reflected in the safety analysis,
- The licensee ensures that design modifications of the facility are controlled, maintaining the facility within its design basis and licensing basis,
- The design modifications of the facility comply with applicable codes, standards, and regulations including adequate consideration for human factors, and
- OPG comply with CSA N393-13, "Fire protection for facilities that process, handle or store nuclear substances", the National Building Code of Canada (2015), and the National Fire Code of Canada (2015).

CNSC staff require that the impacts of design changes be fully assessed, addressed, and accurately reflected in the safety analysis prior to implementation.

In accordance with licence condition 15.1 in the PWMF LCH, OPG has committed to submitting, prior to commencing construction activities, a document package containing design requirements, an environmental management plan, and a construction verification plan. This document package will be reviewed by CNSC staff to confirm that appropriate design requirements have been developed and that the proposed design and construction will remain within the licensing basis. A person authorized by the Commission must then accept the document package in accordance with licence condition 15.1.

OPG's application considered the conclusions of a fire hazard assessment (FHA) for a similar structure at another OPG site, WWMF, where RWCs and steam generators are stored. This consideration was made on the basis that the proposed PCSS will be built similarly to the structure at the WWMF. OPG further indicated that these FHA conclusions will be confirmed by the PCSS FHA when it is available. CNSC staff expect to review the PCSS-specific FHA as part of the documentation required by licence condition 15.1, prior to commencing construction activities for the proposed PCSS.

A Licence Impact Assessment and a safety assessment were included in OPG's application, which describe the design changes to the facility. The proposed PCSS will be located adjacent to the northern boundary of the NSS-PWMF Phase II site within the Pickering Site East Complex.

OPG drew from existing experience from similar projects at their other sites to make design assumptions for the proposed PCSS. In evaluating different shielding design options, multiple configurations were considered in the safety assessment. The base case for the PCSS design is based on the DWMF Retube Waste Storage Building (RWSB), with concrete shielding panels around the entire building. Above the shielding panels is an industrial roof with rockwool insulation between steel sheets. The floor of the building was modelled as 30 cm thick concrete. The total length of the building modelled was 60 m, and the total width modelled was 55 m.

Considering the results of different sensitivity analyses, OPG chose to pursue a design described as "Steam Generator Scenario 2 + RWC Case 2 + DSC Case 2". The different "case" numbers of the design represent different characteristics for steam generators and RWCs, and different layouts of DSCs in adjacent DSC storage buildings. The design of the RWCs is similar the WWMF storage containers.

CNSC staff evaluated the design information presented in OPG's application against regulatory requirements and are satisfied with the level of detail provided. The detailed design will be evaluated upon OPG's submission of additional documentation in accordance with the aforementioned licence condition 15.1.

3.3.2 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.3.2.1 Past Performance

OPG has implemented and maintained an effective design program, implementing design modifications using established engineering change control processes during the current and previous licensing periods. OPG has experience implementing design modifications at three WMF sites (e.g. construction of multiple additional waste storage buildings).

3.3.2.2 Regulatory Focus

CNSC staff will continue to verify OPG's performance and compliance in all aspects of the Physical Design SCA.

Should the Commission authorize this licence amendment, OPG has committed to preparing and submitting a construction notification document package that will contain:

- Design requirements,
- An environmental management plan, and
- A construction verification plan.

CNSC staff review these documents provide a recommendation to a person authorized by the Commission on whether to provide written acceptance to OPG to commence construction activities in accordance with licence condition 15.1.

3.3.2.3 Proposed Improvements

CNSC staff did not identify any improvements related to the Physical Design SCA with respect to this proposed amendment.

3.3.3 Conclusion

CNSC staff conclude that OPG's application has clearly described the proposed activities, its location, and the design modifications to the facility. OPG applied an established engineering change control process to implement the facility design modification and has demonstrated that the design considerations for the proposed PCSS comply with applicable regulatory requirements.

3.4 Fitness for Service

The Fitness for Service SCA covers activities that impact the physical condition of structures, systems, and components to ensure that they remain effective over time. This area includes an integrated set of programs that ensure all equipment is available to perform its intended design function when called upon to do so.

The SpAs comprising this SCA that are relevant to this CMD include:

- Aging management

3.4.1 Discussion

In their application, OPG has committed to continued compliance with REGDOC-2.6.3, *Aging Management*, and leveraged existing operating experience from other OPG facilities involving management of the proposed waste forms. Additionally, the application references that the impact of construction and operation of the proposed PCSS would not result in any changes to existing OPG licensing basis documents under the Fitness for Service SCA.

3.4.2 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.4.2.1 Past Performance

Steam generators are new waste forms to the PWMF, as is the use of RWCs to store reactor component waste; however, OPG has experience with managing both steam generator waste and reactor component waste at their other licensed WMFs (WWMF and DWMF) where compliance with regulatory requirements has been summarized in the CNSC's Nuclear Power Generating Sites Regulatory Oversight Reports.

3.4.2.2 Regulatory Focus

The introduction of new waste forms and a new waste storage container (RWC) at the PWMF is a notable aspect of OPG's proposed licence amendment. OPG leveraged prior analysis, unified processes, and operating experience from other OPG WMFs (where applicable) to support their proposal. CNSC staff did not identify material differences between OPG's current approach to management of RWCs and ex-service steam generators at other WMFs versus OPG's proposed approach for the PWMF.

CNSC staff continue to monitor OPG's performance in this area through regulatory oversight activities including desktop reviews and inspections of OPG's compliance reporting, and revisions to relevant program documentation pertaining to this SCA.

3.4.2.3 Proposed Improvements

CNSC staff did not identify any improvements related to the Fitness for Service SCA with respect to this proposed amendment.

3.4.3 Conclusion

CNSC staff conclude that OPG has adequately assessed proposed licensed activities against regulatory requirements associated with the Fitness for Service SCA.

3.5 Radiation Protection

The Radiation Protection SCA covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations*. The program must ensure that contamination levels and radiation doses received by individuals are monitored, controlled, and maintained as low as reasonably achievable (ALARA).

The SpAs comprising this SCA that are relevant to this CMD include:

- Application of ALARA
- Worker dose control

- Radiation protection program performance
- Radiological hazard control

3.5.1 Discussion

The *Radiation Protection Regulations* require licensees to establish a radiation protection program to keep exposures ALARA, taking economic and social factors into account, through the implementation of a number of control programs, including:

- Management control over work practices
- Personnel qualification and training
- Control of occupational and public exposures to radiation
- Planning for unusual situations

OPG's radiation protection program and its associated supporting governance documents are designed to address the requirements in the *Radiation Protection Regulations*.

CNSC staff reviewed OPG's application against OPG's radiation protection program and no gaps were identified with regulatory requirements. OPG stated that the radiation protection program will continue to be implemented, which includes work planning, use of radiation exposure permits, dose monitoring, and dose rate monitoring to ensure that doses remain ALARA [2].

Application of ALARA

Based on the information provided in OPG's application, doses to workers would remain well below both the regulatory effective dose limit (50 mSv in a one-year dosimetry period) and OPG's Administrative Control Limit (20 mSv per year).

Should this proposed licence amendment be authorized, OPG will continue to implement its radiation protection program, which includes action levels and administrative limits, to ensure doses to workers are kept ALARA.

Worker Dose Control

All workers at the PWMF are Nuclear Energy Workers (NEWs). OPG has indicated that the projected maximum individual effective dose to a worker at the proposed PCSS over the course of emplacement operations is estimated to be 9.60 mSv. Considering the proposed project schedule and comparison with operational experience, the maximum annual individual effective dose is expected to remain below regulatory limits [3].

OPG's application included consideration of neutron radiation from refurbishment waste and the impact on dose to workers, incorporating operational experience from the 2024 event where neutron dose rates were identified at other OPG waste facilities.

OPG calculated the maximum dose during a postulated accident scenario involving a dropped RWC containing pressure tubes to be 5.0 mSv to a NEW [3]. Based on this analysis, doses to NEWs would be maintained below dose limits for postulated accidents.

Radiological Hazard Control

OPG has indicated that the steam generators and RWCs would be sealed prior to all transfer operations and as such, internal uptakes are expected to be negligible. OPG has also stated that the routine radiation survey program would incorporate loose contamination checks in the PCSS [3].

OPG has stated that shielding of the inner walls and roof of the PCSS has been incorporated into the building design to reduce dose rates on the PCSS building perimeter to ensure that the annual effective dose to a non-NEW is below the regulatory limit [3]. Additionally, each RWC and steam generator received at the PCSS would be inspected and surveyed to confirm that dose rates are within OPG's WAC for this proposed facility.

3.5.2 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.5.2.1 Past Performance

Application of ALARA

OPG's commitment to the ALARA principle has been demonstrated through the implementation of the radiation protection program at the PWMF. OPG's radiation protection program adheres to the ALARA principle by integrating ALARA measures into planning, scheduling, and work control; and by monitoring performance against ALARA targets for work conducted at the PWMF.

Worker Dose Control

OPG's radiation protection program is designed to ensure that doses to workers are controlled and do not exceed regulatory limits. During the licence period, OPG has maintained radiation doses to workers below regulatory dose limits as shown in Table 1.

Table 1: Average and maximum individual effective doses of NEWs at the Pickering Waste Management Facility from 2019-2023

	2019	2020	2021	2022	2023	Regulatory Limit
Average Effective Dose*	0.40 mSv	0.60 mSv	0.50 mSv	0.61 mSv	0.43 mSv	-
Maximum Individual Effective Dose	0.90 mSv	1.30 mSv	1.40 mSv	1.18 mSv	1.38 mSv	50 mSv per one-year dosimetry period

* Arithmetic average dose values are based on the non-zero results only.

OPG uses a CNSC licensed dosimetry service to monitor, assess, record, and report doses of ionizing radiation received by employees, visitors, and contractors as a result of activities at the PWMF. Doses to individuals are reported to the National Dose Registry. The appropriate types of dosimetry, criteria, and procedures are implemented through OPG's radiation protection program.

OPG uses a combination of action levels, staff training and qualification, dose management tools (work planning and management oversight), and personal protective equipment to ensure radiation doses to workers are controlled and kept ALARA. Action levels are established for unplanned dose, and for contamination control. During the current licence period, there have been no action level exceedances related to dose to workers.

Radiation Protection Program Performance

The oversight applied by OPG in implementing and improving its radiation protection program is effective in protecting workers at the PWMF. OPG continually measures the performance of its radiation protection program against industry-established objectives, goals, and targets and it benchmarks its program against industry peers.

Radiological Hazard Control

OPG's radiation protection program requires monitoring and control of all radiological hazards at the PWMF. The program measures related to radiological hazard control include radiological zoning, contamination control, dose rate control, and area and airborne radiation monitoring and control. Radiological hazards are eliminated when possible or controlled with engineered barriers and signage identifying the level and extent of hazard areas. Where possible, radiation fields encountered by workers during operation and maintenance activities are further reduced using temporary shielding. During the current licence period, there have been no contamination control events in which the levels exceeded OPG's contamination control action level for the PWMF.

CNSC staff have assessed OPG's programs under the radiation protection SCA at the PWMF and found that OPG continues to meet regulatory requirements. OPG has maintained satisfactory performance across the specific areas of this SCA during the current licence period.

3.5.2.2 Regulatory Focus

CNSC staff will continue to verify OPG's performance and compliance in all aspects of the radiation protection SCA and verify that the protection of workers is optimized and that worker doses are kept ALARA.

3.5.2.3 Proposed Improvements

CNSC staff did not identify any improvements related to the Radiation Protection SCA with respect to this proposed amendment.

3.5.3 Conclusion

CNSC staff conclude that OPG's existing radiation protection program is expected to be able to maintain doses to workers ALARA and manage the radiological hazards associated with the construction and operation of the proposed PCSS.

3.6 Environmental Protection

The environmental protection SCA covers programs that identify, control, and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities or as the result of licensed activities.

The SpAs comprising this SCA that are relevant to this CMD include:

- Environmental risk assessment
- Effluent and emissions control (releases)
- Assessment and monitoring
- Protection of people
- Environmental management system (EMS)

3.6.1 Discussion

OPG's environmental protection program includes the policies, instructions, method and procedures to identify, control and monitor releases of radioactive nuclear and hazardous substances from the PWMF into the environment and to protect the health and safety of people and the environmental. CNSC staff confirmed that OPG maintains an environmental protection program designed and implemented to meet requirements outlined in REGDOC-2.9.1, *Environmental Protection Policies, Programs and Procedures*. CNSC staff verify the performance of the environmental protection program through compliance activities including technical assessment of reports, event report reviews and inspections.

Additional information on CNSC staff's assessment of OPG's performance in the environmental protection SCA can be found in the EPR report for Pickering Nuclear Generating Station.

Environmental Risk Assessment

Environmental risk assessment (ERA) is a systematic process used by licensees to identify, quantify, and characterize the risk posed by contaminants and physical stressors in the environment on human and other biological receptors, including the magnitude and extent of the potential effects associated with a facility. The ERA serves as the basis for the development of site-specific EP measures and the results from the ERA updates determine whether the facility's effluent and emissions monitoring program and Environmental Monitoring Program (EMP) are effective. The results of these programs, in turn, inform and refine future revisions of the ERA. Pickering Waste Management Facility operations risk to the public and environment are included in the Pickering Site wide ERA.

As per Clause 11.1 of CSA N288.6-22 and Section 4.1.1 of REGDOC-2.9.1, there is a need for a revised PERA when there is a proposed major facility change. The construction and operation of the proposed PCSS triggered a PERA. Therefore, OPG submitted a PERA [2] as part of their licence amendment application, in compliance with CSA N288.6-22 and REGDOC-2.9.1.

OPG's PERA submission included an ecological risk assessment (EcoRA) and a human health risk assessment (HHRA) for nuclear and hazardous contaminants and physical stressors. CNSC staff reviewed OPG's original PERA and raised comments that OPG addressed in a revision [3]. Overall, CNSC staff conclude that the ERA is in compliance with CSA N288.6 requirement.

As part of the PERA, OPG included recommendations based on the assessment results to mitigate any impact to the public and the environment. These recommendations are discussed under the Environmental Management System portion of this CMD subsection.

CNSC staff acknowledge that OPG is engaging with Indigenous Nations and communities regarding this licence amendment application, including information captured in the PERA. CNSC staff have recommended that OPG provide additional detail on the results of their Indigenous engagement in future revisions of the PERA. Please refer to Section 4.1 for additional information on Indigenous consultation and engagement.

Effluent and Emissions Control and Monitoring

OPG continues to control and monitor releases of nuclear and hazardous substances to the environment. OPG's effluent and emissions monitoring program defines the contaminants, frequency and location of samples to be taken. In addition, it includes the methods and procedures for monitoring radioactive nuclear and hazardous substances, identifies and monitors discharge pathways for releases to the environment, and maintains releases below regulatory limits and action levels. During normal operation of the PWMF, releases to the atmosphere have historically been very low. More information on releases can be found in the Pickering EPR on the CNSC webpage.

The proposed construction and operation of the PCSS has the potential to impact various components of the environment. The PERA identified interactions across several project phases: site preparation, construction, and operations and maintenance.

The site preparation and construction phases of the project may result in airborne dust, particulate matter, exhaust emissions, and noise. Surface water would require management but is not expected to be contaminated. OPG's Environmental Management Plan would outline procedures related to air and water management, noise control, contaminated and excess soil management and general wildlife management.

No new releases to air or water are expected as a result of the operation of the PCSS. OPG currently measures gamma dose rates at several locations on the fence line of the PWMF to ensure that dose rates remain below the dose rate target. OPG has a tracked commitment to install thermoluminescent dosimeters (TLDs) to monitor ambient dose rates at the fence line around the proposed PCSS should it become operational. The results of the monitoring would be summarized and included in OPG's annual report for the PWMF.

Assessment and Monitoring

OPG's environmental monitoring program is designed to measure environmental radioactivity and radiation in the vicinity of the Pickering site which includes the waste facility. Based on this program, environmental samples from different pathways of the food chain are collected from various offsite locations and analyzed. Data from the program are also used to assess public doses resulting from the routine operation of the Pickering Site, and to verify predictions made in environmental risk

assessments. No required changes to the environmental monitoring program were identified in the PERA.

Note that excess soil that may be generated during site preparation. This soil would require sampling under the Ministry of Environment, Conservation and Parks Management of Excess Soil Guideline. Procedures are expected to be included in the Environmental Management Plan.

Protection of People

This specific area within the environmental protection SCA is related to ensuring that members of the public are not exposed to unreasonable risk with respect to nuclear and hazardous substances released from the facility.

Review of OPG's results of the environmental monitoring programs reports for the period of 2019-2023 shows that the concentration of radionuclides in the environment resulted in dose to the public that are well below regulatory limits.

As part of the PERA, OPG conducted a human health risk assessment. The human health risk assessment calculated the incremental increase in dose to the closest receptor, the sports fisher, as a result of the operation of the proposed PCSS. There were several conservative assumptions made in the calculation. The assessment concluded that as a result of the operation of the proposed PCSS, the sports fisher may receive a dose of 4.38 µSv/a. This level is well below the public dose limit.

The human health risk assessment concluded that there were no impacts to human health anticipated as a result of the hazardous substances (dust, vehicle exhaust, particulate matter, noise) that may be released to the environment during site preparation and construction activities.

Environmental Management System

OPG has established and implemented an EMS in accordance with CNSC REGDOC-2.9.1 and is registered and certified under the CSA ISO 14001 Standard, *Environmental Management Systems – Requirements with Guidance for Use*.

An Environmental Management Plan outlining procedures relating to air (dust) and water management, noise control, contaminated and excess soil management, and general wildlife management would be prepared and submitted to CNSC staff for review in accordance with licence condition 15.1. OPG committed to employ best practices for environmental management which would be outlined in the Environmental Management Plan. A Stormwater Management Plan would also accompany the Environmental Management Plan submitted to CNSC staff under licence condition 15.1.

OPG's EMS and its supporting governing documents establish the provision of the protection of the environment at the Pickering Site and continual improvement of environmental performance as required by CNSC REGDOC-2.9.1. CNSC staff do not foresee OPG's request to construct and operate the proposed PCSS having a negative impact on OPG's EMS.

3.6.2 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.6.2.1 Past Performance

Review of OPG's results of the environmental monitoring programs reports for the period of 2019-2023 shows that the concentration of radionuclides in the environment resulted in dose to the public that are well below regulatory limits. The following table provides the doses to the public from the Pickering Site over the current licensing period:

Table 2: Maximum Effective Dose to a Member of the Public

Dose Statistic	2019	2020	2021	2022	2023	Regulatory Limit
Maximum Effective Dose (mSv)[1]	0.0017	0.0012	0.0020	0.0019	0.0015	1 mSv/year

1. OPG does not calculate individual public dose for PMWF. It calculates an annual site public dose which is reported annually in OPG's Annual Environmental Monitoring report.

CNSC staff have assessed OPG's programs under the Environmental Protection SCA for the PWMF and conclude that during the licence term to date, OPG has met the applicable regulatory requirements.

3.6.2.2 Regulatory Focus

CNSC staff will continue to verify OPG's performance and compliance in all aspects of the Environmental Protection SCA.

OPG has committed to preparing and submitting to CNSC staff for review, prior to commencing construction activities, an Environmental Management Plan, and a Stormwater Management Plan. OPG has also been asked to provide more information on the negligible risk of soil liquefaction in the construction and operation of the proposed PCSS, which CNSC staff will consider prior to issuing a recommendation on commencement of construction activities.

3.6.2.3 Proposed Improvements

CNSC staff have recommend to OPG, through review of this application, that submission of updated PERAs be considered following Indigenous engagement activities.

3.6.3 Conclusion

CNSC staff conclude that OPG has implemented and maintains an effective environmental protection program at the PWMF that meets regulatory requirements and continues to ensure that people and the environment are protected.

3.7 Waste Management

The waste management SCA covers internal waste-related programs that form part of the facility's operations up to the point where the waste is removed from the facility to a separate waste management facility. This also covers the planning for decommissioning.

The SpAs comprising this SCA that are relevant to this CMD include:

- Waste Characterization
- Waste Management Practices
- Decommissioning Plans

3.7.1 Discussion

OPG's waste management program documentation describes how waste is managed throughout its lifecycle to the point of disposal. This includes waste generation, storage, processing, recycling, and removal/transfer activities. CNSC staff verified that OPG has implemented and maintained a program at the PWMF for waste management to minimize the generation of waste at the facility and dispose of wastes and by-products in accordance with CNSC regulatory requirements. CNSC staff further verified that OPG's waste management program for the PWMF complies with the requirements of REGDOC-2.11.1 Volume I: *Management of Radioactive Waste*, CSA N292.0-19, *General principles for the management of radioactive waste and irradiated fuel* and N292.3-08, *Management of low- and intermediate-level radioactive waste*. OPG has stated in their application that the interim storage in the proposed PCSS of L&ILW resulting from refurbishment and decommissioning activities would continue to be in compliance with these regulatory requirements. As part of licence condition 15.2 with respect to commissioning, CNSC staff would verify that the WAC meets regulatory requirements and is consistent with the PCSS safety assessment.

Waste Management Practices and Waste Characterization

OPG states in their application that wastes accepted into the proposed PCSS would be managed similar to those at other OPG WMFs with steam generators stored on saddles (not size reduced) and smaller reactor component wastes stored in RWCs. The application also states that the current PWMF waste management program would continue to be in compliance with regulatory requirements as a result of the construction and operation of the proposed PCSS. Further, the PWMF WAC would be updated to account for the characteristics of the waste that would be accepted for storage in the proposed PCSS. The WAC would include limits on the total dose rates (gamma plus neutron) for each steam generator and RWC to be received and stored in the proposed PCSS.

OPG further states that the current waste characterization program accounts for the activities of the wastes that will be stored in the proposed PCSS. Although wastes received by the PWMF are expected to be characterized prior to receipt, the need may arise for future re-characterization efforts at the PWMF. Operational wastes generated within the proposed PCSS would also be subject to characterization.

Decommissioning Plans

Paragraph 3(k) of the CINFR requires any application to include a preliminary decommissioning plan (PDP) commensurate with the proposed licensed activities in each phase of the lifecycle of the facility. All licensees are required to maintain a PDP that sets out how the facility will be decommissioned and sets out the decommissioning strategy and end-state. The PDP must also be kept current to reflect any changes in the site or facility and provide a credible basis for estimating the decommissioning cost. The requirements and guidance for planning for decommissioning are outlined in REGDOC-2.11.2, *Decommissioning*.

OPG maintains PDPs for all OPG operated nuclear facilities in Ontario including the PWMF. The PDPs for OPG operated facilities were last updated in and reviewed by CNSC staff in 2022. They meet the requirements of CSA N294-19 (2019), *Decommissioning of Facilities Containing Nuclear Substances*. The PDP is updated every five years, with the next update scheduled for submission to CNSC staff in 2027. In the next update of PWMF PDP, OPG has committed to capturing the implementation of REGDOC-2.11.2 and the addition of the proposed PCSS.

3.7.2 Summary

A summary of the licensee's past performance, challenges and proposed improvements are presented in the following subsections.

3.7.2.1 Past Performance

CNSC staff have assessed OPG's programs under the Waste Management SCA at the PWMF and conclude that during the licence term to date, OPG has met the applicable regulatory requirements.

3.7.2.2 Regulatory Focus

CNSC staff will continue to verify OPG performance and compliance in all aspects of the Waste Management SCA.

3.7.2.3 Proposed Improvements

CNSC staff did not identify any improvements related to the Waste Management SCA with respect to this proposed amendment.

3.7.3 Conclusion

CNSC staff conclude that OPG has adequately assessed the Waste Management SCA impacts that would result from construction and operation of the proposed PCSS. OPG continues to implement and maintain a waste management program in accordance with regulatory requirements.

4. Indigenous and Public Consultation and Engagement

4.1 Indigenous Consultation and Engagement

The common-law duty to consult with Indigenous Nations and communities applies when the Crown contemplates actions that may adversely affect potential or established Indigenous and/or treaty rights. The CNSC ensures that all of its licence decisions under the NSCA uphold the honour of the Crown and uphold Indigenous peoples' potential or established Indigenous and/or treaty rights pursuant to section 35 of the *Constitution Act, 1982*. CNSC staff's considerations include but are not limited to Indigenous Nations and communities established or potential rights pertaining to lands and waters in relation to the facility and the expected and/or potential impacts of the activities conducted on the site in accordance with a CNSC issued licence.

REGDOC-3.2.2, *Indigenous Engagement*, sets out requirements and guidance for licensees whose proposed projects may raise the Crown's duty to consult. While the CNSC cannot delegate its obligation, it can delegate procedural aspects of the consultation process to licensees, where appropriate. The information collected and measures proposed by licensees to avoid, mitigate, or offset potential adverse impacts from the proposed licence amendment may be used by CNSC staff in meeting its consultation obligations.

Based on the information in OPG's application, CNSC staff found that the licence amendment is unlikely to cause new adverse impacts to the exercise of potential or established Indigenous and/or Treaty rights as it would not change the PWMF site characterization or lead to new off-site impacts. However, as the licence amendment would permit the construction of a new storage structure, there remains a low potential for adverse impacts on Indigenous and/or Treaty rights, and thus the requirements in REGDOC-3.2.2 must be followed, and the project raises the Crown's Duty to Consult and accommodate obligations.

4.1.1 Discussion

CNSC Staff's Consultation and Engagement Activities

CNSC staff remain committed to building long-term relationships with Indigenous Nations and communities who have interest in CNSC-regulated facilities within their traditional and/or treaty territories. The CNSC's Indigenous engagement practices include sharing information, discussing topics of interest, seeking feedback and input on CNSC processes, and providing opportunities to participate in environmental monitoring programs, such as the CNSC's Independent Environmental Monitoring Program. The CNSC also provides funding support, through its Participant Funding Program (PFP) and Indigenous and Stakeholder Capacity Fund, for Indigenous peoples to meaningfully participate in Commission proceedings and ongoing regulatory activities.

CNSC staff identified several Indigenous Nations and communities that may have an interest in OPG's licence amendment application, due to the proximity of their communities, treaty areas and territories to the PWMF in Pickering, Ontario, or due to previously expressed interest in being informed of CNSC licenced activities occurring in or proximal to their territories or communities.

The Indigenous Nations and communities listed below have been identified based on analysis conducted by CNSC staff using Crown Indigenous Relations and Northern Affairs Canada's Aboriginal and Treaty Rights Information System and other mapping tools, as well as through a review of existing CNSC and open resources including records of Indigenous Nations and communities who may have expressed interest in the PWMF facility in the past. Should other Indigenous Nations and communities not included in the list identify interest in the licence application moving forward, they will be added as appropriate.

Indigenous Nations and communities with rights in relation to the Pickering Waste Management facility licence include:

- Alderville First Nation,
- Curve Lake First Nation,
- Hiawatha First Nation,
- Mississaugas of Scugog Island First Nation,
- Chippewas of Beausoleil First Nation,
- Georgina Island First Nation,
- Mnjikaming (Chippewas of Rama First Nation)

Indigenous Nations and communities with a potential interest in the Pickering Waste Management Facility include:

- Mohawks of the Bay of Quinte,
- Métis Nation of Ontario Region 8,
- Six Nations of the Grand River,
- Mississaugas of the Credit First Nation

The CNSC has signed Terms of References (TORs) for long-term engagement with Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation and the Métis Nation of Ontario. The CNSC also has regular engagement and meetings with Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation and the Métis Nation of Ontario and has integrated discussions on OPG's licence amendment application as part of regular meetings and discussions, consultation and engagement activities on OPG's licence amendment application as part of regular meetings and discussions with each Nation. The CNSC is open to developing a TOR for long-term engagement with other Indigenous Nations and communities as appropriate.

A project notification letter was sent to identified Indigenous Nations and communities in September 2024. These letters provided information regarding the licence amendment application, opportunities to participate in the Commission's hearing process, and information about the CNSC's PFP to facilitate participation in the hearing and regulatory review process.

CNSC staff offered to meet with all identified Indigenous Nations and communities to discuss the application and raised OPG's application in regular meetings with Curve Lake First Nation, Mississaugas of Scugog First Nation, Hiawatha First Nation and the Métis Nation of Ontario.

CNSC staff followed-up with interested Indigenous Nations and communities via phone calls to discuss intervention deadlines and hearing details and to answer any questions about the licence amendment application.

All of the identified Indigenous Nations and communities were encouraged to participate in the regulatory review process and in the Commission hearing through written interventions to advise the Commission directly of any concerns they may have in relation to this licence amendment application. Mississaugas of Scugog Island First Nation and Curve Lake First Nation have applied for Participant Funding to intervene in the hearing.

OPG's application for a license amendment was discussed with the Missisaugas of Scugog Island First Nation, Hiawatha First Nation, Curve Lake First Nation during regular meetings in 2024 and 2025. At the time of drafting this CMD, specific topics of interest that were discussed in relation OPG's licence amendment application with CNSC staff include:

- Mississaugas of Scugog Island First Nation expressed concern that OPG is increasing their capacity for nuclear waste storage before having received approval from the CNSC to continue operating Units 5 to 8 until 2026, or approval for refurbishing units at the PNGS.
    - CNSC staff responded in a regular meeting with Missisaugas of Scugog Island First Nation that the proposed PCSS is intended for the storage of low and intermediate level waste from future decommissioning activities of PNGS units 1-4 as well as from proposed refurbishment activities of Pickering units 5-8. For PNGS refurbishment wastes to be transferred for storage in the proposed PCSS, OPG would first require separate authorization from the Commission to generate those wastes under the PNGS power reactor operating licence.

Based on the consultation and engagement activities to date, CNSC staff have not been made aware of any specific concerns with regards to potential new impacts to the exercise of rights and interests as a result of the proposed project. However, the identified Indigenous Nations and communities have been encouraged to notify CNSC staff and the Commission with regards to their position and any concerns in relation to the licence amendment application through their intervention. CNSC staff are committed to working with each Nation to ensure any concerns are addressed through our ongoing engagement and collaboration.

OPG's Engagement Activities

In accordance with the requirements of REGDOC 3.2.2, OPG has submitted an Indigenous Engagement Report to help inform CNSC staff's consultation process and obligations. In addition to OPG's Indigenous engagement policy and activities, OPG's engagement specific to this licence amendment has consisted of:

- Sharing a draft Indigenous Engagement Plan for review with with Alderville First Nation, Beausoleil First Nation, Curve Lake First Nation, Georgina Island First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation, Rama First Nation.
- Drafting Memorandum of Understanding (MoU) for engagement with Allderville First Nation, Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation.
- Drafting Terms of Reference with Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Islands First Nation, Alderville First Nation.
- Providing updates on the purpose of the proposed new facility, the application submission and project timelines.
- Providing information on waste, transport of waste, and the application process.

CNSC staff have reviewed and assessed OPG's Indigenous Engagement Report and are satisfied with OPG's engagement activities to date and encourage OPG to continue to engage with the identified Nations in relation to this licence amendment application and activities at the PWMF site.

4.1.2 Conclusion

CNSC staff have conducted consultation and engagement activities with the identified Indigenous Nations and communities including project application notification, opportunities to meet and discuss, opportunities to apply for funding, oversight of OPG's engagement activities and encouragement, and support for participating in the Commission hearing process via written interventions. Based on CNSC staff's engagement activities to date, CNSC staff have not identified any concerns with respect to potential new impacts to Indigenous and/or treaty rights in relation to the licence amendment application.

CNSC staff are committed to ongoing engagement and collaboration with interested Indigenous Nations and communities and will continue to provide opportunities for meaningful long-term engagement and collaboration with respect to OPG's projects and activities in relation to the PWMF. CNSC staff have also encouraged OPG to continue engagement with Indigenous Nations and communities regarding their ongoing operations at the PWMF.

CNSC staff recommend that the Commission find that the Crown's Duty to Consult and Accommodate obligations have been met for OPG's licence amendment application.

4.2 CNSC Public Disclosure, Consultation and Engagement

The NSCA mandates the CNSC to disseminate objective scientific, technical and regulatory information to the public concerning its activities and the activities it regulates. CNSC staff fulfill this mandate in a variety of ways, including hosting in-person and virtual information sessions and through annual regulatory reports.

In accordance with section 17 of the *Canadian Nuclear Safety Commission Rules of Procedure*, a Notice of Hearing in Writing was issued and posted on the CNSC website inviting written submissions to the Commission regarding OPG's application.

CNSC staff continue to inform the public and Indigenous communities of our regulatory activities through regular website updates, publicly webcast Commission proceedings, social media, public webinars, mail drops and frequent discussion with key audiences near the facility. CNSC staff encourage the public and Indigenous communities to participate in the Commission's hearing in writing.

4.3 Licensee Public Information and Engagement

The CNSC requires licensees to maintain and implement public information and disclosure programs, in accordance with CNSC's REGDOC-3.2.1, *Public Information and Disclosure*. These programs are supported by disclosure protocols that outline the type of facility's information to be shared with the public as well as details on how that information is to be disseminated. This ensures that timely information about the health, safety and security of persons and the environment, and other issues associated with the lifecycle of nuclear facilities, is effectively communicated to the public.

CNSC staff monitor OPG's implementation of its public information and disclosure program to verify that it communicates regularly with its audiences in a way that is open, transparent, and meaningful to them.

4.3.1 Discussion

OPG has a public information and disclosure program that includes regular meetings with the Pickering Community Advisory Council, having a representative on the Durham Nuclear Health Committee, and providing a community newsletter called "Neighbours" on a quarterly basis that is circulated by mail to residents throughout Durham Region (specific to the PWMF). This provides an update of activities and events that occur at the respective stations.

4.3.2 Conclusion

Through the methods listed above, OPG provides an opportunity for public engagement and information exchange regarding their application to construct and operate the PCSS. CNSC staff encourage OPG to continue to leverage their website and various social media platforms, conduct outreach and engagement with the public on this licensing basis amendment and other ongoing activities of interest at the PWMF.

4.4 Participant Funding Program

The CNSC made available up to $75,000 through its PFP to support Indigenous Nations and Communities, members of the public and stakeholders in providing value-added information to the Commission through informed and topic-specific interventions. This funding was offered to review OPG's application and associated documents and to prepare written submissions for the Commission's hearing in writing. The deadline for applications was November 15, 2025.

4.4.1 Discussion

A Funding Review Committee (FRC), independent from CNSC staff, reviewed the funding applications received, and made recommendations on the allocation of funding to eligible applicants. Based on recommendations from the FRC, the CNSC awarded a total of $51,920 distributed amongst the following recipients:

- Canadian Association of Nuclear Host Communities
- Curve Lake First Nation
- Mississaugas of Scugog Island First Nation

4.4.2 Conclusion

The CNSC continues to actively promote ongoing communication and dissemination of regulatory and scientific information through social media channels, webinars, outreach in the local communities and postings on the CNSC web site. The CNSC has various mechanisms and processes such as the PFP and notifications on the CNSC website to encourage the public to participate in the Commission's hearing process, as described above. The CNSC has offered assistance to interested members of the public, Indigenous groups, and other stakeholders, through the PFP, to prepare for and participate in the Commission's hearing process for this licence amendment application.

5. Other Matters of Regulatory Interest

5.1 Financial Guarantees

Under subsection 24(5) of the NSCA, the licensee is required to provide a financial guarantee in a form that is acceptable to the Commission. *General Nuclear Safety and Control Regulations*, paragraph 3(1)(l) stipulates that, "an application for a licence shall contain a description of any proposed financial guarantee related to the activity for which a licence application is submitted." The FG for decommissioning is established to fund the activities described in the PDP. These requirements are found in REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*.

5.1.1 Discussion

OPG maintains a consolidated FG for decommissioning of all OPG operated nuclear facilities in Ontario. The PWMF is covered under the OPG consolidated financial guarantee. The consolidated FG currently in place covers the five-year review period 2022-2027 and was approved by the Commission in 2022.

In this application, OPG has committed to including the financial impact related to the PCSS in the next FG submission due in 2027. As per requirements of PWMF Licence Condition G.3, OPG will continue to report annually on the status of the consolidated FG. OPG has reported their Decommissioning Segregated Fund as being overfunded with enough surplus to conservatively accommodate expected costs associated with PCSS decommissioning.

5.1.2 Conclusion

CNSC staff conclude that OPG's consolidated financial guarantee for decommissioning of all OPG operated nuclear facilities in Ontario is adequate.

6. Overall Conclusions and Recommendations

CNSC staff's assessment of OPG's application, including the supporting documents, concludes the following:

1. OPG has demonstrated that design considerations for the construction of the proposed PCSS meet regulatory requirements.
2. OPG has adequately assessed the hazards associated with proposed activities through safety assessments and demonstrated an adequate level of protection of the workers, the public, and the environment.
3. OPG remains qualified to carry on the activities authorized in the WFOL and continues to make provisions to protect workers, people, and the environment.

CNSC staff recommend that the Commission:

1. **Conclude,** pursuant to paragraphs 24(4)(a) and (b) of the NSCA that the licensee:
   a) **Is qualified** to carry out the activities authorized by the licence.
   b) **Will make adequate provision** for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.
2. **Amend** the PWMF licensing basis to authorize OPG to construct and operate the PCSS.
3. **Amend** the PWMF licence WFOL-W4-350.00/2028 to:
   a) **Add** the PCSS under paragraph (iv) of Part IV for Licensed Activities (see Part 2 of this CMD).
   b) **Add** the requirement for prior acceptance of construction documents by the Commission, or a person authorized by the Commission, within licence condition 15.1 (see Part 2 of this CMD).
4. **Delegate** authority for administration of licence condition 15.1 as outlined in Part 2 of this CMD.
5. **Determine** whether, taking into consideration the information provided in this CMD and any other relevant information forthcoming, the CNSC, as an agent of the Crown, has upheld the honour of the Crown and fulfilled its obligations to consult and, where appropriate, accommodate Indigenous peoples, pursuant to section 35 of the Constitution Act, 1982.

Should the Commission accept CNSC staff's recommendation,

a. CNSC staff will revise the PWMF LCH as specified in Part 2 of this submission.

b. Prior to the commencement of PCSS construction activities, OPG will submit the design requirements, environmental management plan, and construction verification plan in accordance with licence condition 15.1.

c. Prior to the commencement of PCSS operation, OPG will submit a final commissioning report in accordance with licence condition 15.2.

References

[1] Pickering Nuclear Waste Facility: Waste Facility Operating Licence, February 6, 2018, e-Doc 5188230.

[2] OPG Letter, K. Aggarwal to C. Salmon, "Pickering Waste Management Facility - Application for Waste Facility Operating Licence WFOL-W4-350.00/2028 Amendment to Construct and Operate the Pickering Component Storage Structure", May 31, 2024, CD # 92896-CORR-00531-01544 P, e-Doc 7293912. **(Protected B)**

[3] OPG Letter, K. Aggarwal to C. Salmon, "Pickering Waste Management Facility - Pickering Component Storage Structure, Waste Facility Operating Licence WFOL-W4-350.00/2028 Amendment Commission Member Document", May 31, 2024, CD # 92896-CORR-00531-01606 P, e-Doc 7469184.

[4] Pickering Waste Management Facility Licence Conditions Handbook: LCH-W4-350.00/2028 Revision 3, March 7, 2025, e-Doc 7477093.

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 NSCA 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.

ALARA	As Low As Reasonably Achievable
CINFR	*Class I Nuclear Facilities Regulations*
CMD	Commission Member Document
CNSC	Canadian Nuclear Safety Commission
CSA	Canadian Standards Association
DSC	Dry Storage Container
DSM	Dry Storage Modules
DWMF	Darlington Waste Management Facility
EcoRA	Ecological Risk Assessment
EMP	Environmental Monitoring Program
EMS	Environmental Management System
EPR	Environmental Protection Review
ERA	Environmental Risk Assessment
FG	Financial Guarantee
FHA	Fire Hazard Assessment
FRC	Funding Review Committee
GNSCR	*General Nuclear Safety and Control Regulations*
HHRA	Human Health Risk Assessment
IAA	*Impact Assessment Act*
LCH	Licence Conditions Handbook
L&ILW	Low and Intermediate Level Waste
NEW	Nuclear Energy Worker
NSCA	*Nuclear Safety and Control Act*
OPG	Ontario Power Generation
PCSS	Pickering Component Storage Structure

PDP	Preliminary Decommissioning Plan
PERA	Predictive Environmental Risk Assessment
PFP	Participant Funding Program
PNGS	Pickering Nuclear Generating Station
PWMF	Pickering Waste Management Facility
RCSA	Retube Component Storage Area
RWC	Retube Waste Container
RWSB	Retube Waste Storage Building
SAR	Safety Analysis Report
SB	Storage Building
SCA	Safety and Control Area
SpA	Specific Area
TLD	Thermoluminescent Dosimeter
TOR	Terms of Reference
WAC	Waste Acceptance Criteria
WFOL	Waste Facility Operating Licence
WMF	Waste Management Facility
WWMF	Western Waste Management Facility

A. Basis for Recommendation

A.1 Detailed Summary of CNSC Assessment of Application

CNSC's staff assessment of OPG's licence application included a completeness check, a sufficiency check, and a technical assessment against regulatory requirements. The completeness check verified whether the application included the prescribed information in accordance with the NSCA and applicable Regulations. For all facilities (i.e., Class I and Class II facilities), it is important to consider and address all licence application requirements within the applicable CNSC regulations. As an application for a licence amendment, OPG's application is subject to the requirements pursuant to sections 3 and 6 of the GNSCR, as well as sections 3, 5, and 6 of the CINFR.

The sufficiency check verified whether the application included sufficient and quality information for CNSC staff to conduct the technical assessment. The technical assessment verified whether the application included adequate safety and control measures to address CNSC requirements. Documents originally submitted as part of the application may have been revised, updated, or replaced over the course of the assessment to address CNSC requirements.

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
GNSCR Section 3 (1) An application for a licence shall contain the following information:				
(a) the applicant's name and business address;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act and Associated Regulations*	Yes	Yes	Yes
(b) the activity to be licensed and its purpose;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act and Associated Regulations*	Yes	Yes	Yes
(c) the name, maximum quantity, and form of any nuclear substance to be encompassed by the licence;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act and Associated Regulations*	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(d) a description of any nuclear facility, prescribed equipment, or prescribed information to be encompassed by the licence;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(e) the proposed measures to ensure compliance with the *Radiation Protection Regulations*, the *Nuclear Security Regulations* and the *Packaging and Transport of Nuclear Substances Regulations, 2015;*	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(f) any proposed action level for the purpose of section 6 of the *Radiation Protection Regulations*;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes
(g) the proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment, or prescribed information;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes
(h) the proposed measures to prevent loss or illegal use, possession, or removal of the nuclear substance, prescribed equipment, or prescribed information;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(i) a description and the results of any test, analysis or calculation performed to substantiate the information included in the application;	OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment	Yes	Yes	Yes
(j) the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed, or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes
(k) the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the [NSCA] and the regulations made under it, including the internal allocation of functions, responsibilities and authority;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes
(l) a description of any proposed financial guarantee relating to the activity to be licensed;	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(m) any other information required by the [NSCA] or the regulations made under it for the activity to be licensed and the nuclear substance, nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence.	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes
GNSCR Section 6 An application for the amendment, revocation, or replacement of a licence shall contain the following information:				
(a) a description of the amendment, revocation or replacement and of the measures that will be taken and the methods and procedures that will be used to implement it;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(b) a statement identifying the changes in the information contained in the most recent application for the licence;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(c) a description of the nuclear substances, land, areas, buildings, structures, components, equipment and systems that will be affected by the amendment, revocation or replacement and of the manner in which they will be affected; and	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes
(d) the proposed starting date and the expected completion date of any modification encompassed by the application.	OPG's application, Attachment 1, Licence Compliance Matrix – *Nuclear Safety Control Act* and Associated Regulations	Yes	Yes	Yes
CINFR Section 3 An application for a licence in respect of a Class I nuclear facility, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the General Nuclear Safety and Control Regulations:				

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(a) a description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(b) plans showing the location, perimeter, areas, structures and systems of the nuclear facility;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(c) evidence that the applicant is the owner of the site or has authority from the owner of the site to carry on the activity to be licensed;	N/A (amendment)	N/A	N/A	N/A
(d) the proposed management system for the activity to be licensed, including measures to promote and support safety culture;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(d.1) the proposed human performance program for the activity to be licensed, including measures to ensure workers' fitness for duty.	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by OPG	Complete?	Sufficient?	Adequate?
(e) the name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on;	N/A (negligible for application scope)	N/A	N/A	N/A
(f) the proposed worker health and safety policies and procedures;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(g) the proposed environmental protection policies and procedures;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility To be further considered under licence condition 15.1 submission.	Yes	Yes	Yes
(h) the proposed effluent and environmental monitoring programs;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(i) if the application is in respect of a nuclear facility referred to in paragraph 2(b) of the Nuclear Security Regulations, the information required by section 3 of those Regulations;	N/A	N/A	N/A	N/A
(j) the proposed program to inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the activity to be licensed; and	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(k) the proposed plan for the decommissioning of the nuclear facility or of the site.	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
CINFR Section 5 An application for a licence in respect of a Class I nuclear facility, other than a licence to abandon, shall contain the following information in addition to the information required by section 3 of the General Nuclear Safety and Control Regulations:				

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by OPG	Complete?	Sufficient?	Adequate?
(a) a description of the proposed design of the nuclear facility, including the manner in which the physical and environmental characteristics of the site are taken into account in the design;	OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes
(b) a description of the environmental baseline characteristics of the site and the surrounding area;	OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes
(c) the proposed construction program, including its schedule;	To be considered under licence condition 15.1 submission.	N/A	N/A	N/A
(d) a description of the structures proposed to be built as part of the nuclear facility, including their design and their design characteristics;	OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by OPG	Complete?	Sufficient?	Adequate?
(e) a description of the systems and equipment proposed to be installed at the nuclear facility, including their design and their design operating conditions;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment To be further considered under licence condition 15.1 submission.	Yes	Yes	Yes
(f) a preliminary safety analysis report demonstrating the adequacy of the design of the nuclear facility;	OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment	Yes	Yes	Yes
(g) the proposed quality assurance program for the design of the nuclear facility;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(h) the proposed measures to facilitate Canada's compliance with any applicable safeguards agreement;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(i) the effects on the environment and the health and safety of persons that may result from the construction, operation and decommissioning of the nuclear facility, and the measures that will be taken to prevent or mitigate those effects;	OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes
(j) the proposed location of points of release, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including their physical, chemical and radiological characteristics;	OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes
(k) the proposed measures to control releases of nuclear substances and hazardous substances into the environment;	OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes
(l) the proposed program and schedule for recruiting, training and qualifying workers in respect of the operation and maintenance of the nuclear facility; and	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(m) a description of any proposed full-scope training simulator for the nuclear facility.	N/A	N/A	N/A	N/A
CINFR Section 6 An application for a licence to operate a Class I nuclear facility shall contain the following information in addition to the information required by section 3:				
(a) a description of the structures at the nuclear facility, including their design and their design operating conditions;	OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment	Yes	Yes	Yes
(b) a description of the systems and equipment at the nuclear facility, including their design and their design operating conditions;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment To be further considered under licence condition 15.1 submission.	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by OPG	Complete?	Sufficient?	Adequate?
(c) a final safety analysis report demonstrating the adequacy of the design of the nuclear facility;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment	Yes	Yes	Yes
(d) the proposed measures, policies, methods and procedures for operating and maintaining the nuclear facility;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(e) the proposed procedures for handling, storing, loading and transporting nuclear substances and hazardous substances;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(f) the proposed measures to facilitate Canada's compliance with any applicable safeguards agreement;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by OPG	Complete?	Sufficient?	Adequate?
(g) the proposed commissioning program for the systems and equipment that will be used at the nuclear facility;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(h) the effects on the environment and the health and safety of persons that may result from the operation and decommissioning of the nuclear facility, and the measures that will be taken to prevent or mitigate those effects;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR **Licences – General Application Requirements**	**Location in Application or Supporting Document(s) as Noted by OPG**	**Complete?**	**Sufficient?**	**Adequate?**
(i) the proposed location of points of release, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including their physical, chemical and radiological characteristics;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility OPG's application, Enclosure 1, Pickering Component Storage Structure Safety Assessment OPG's application, Enclosure 2, Predictive Environmental Risk Assessment for the Pickering Component Storage Structure	Yes	Yes	Yes
(j) the proposed measures to control releases of nuclear substances and hazardous substances into the environment;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility To be further considered under licence condition 15.1 submission.	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by OPG	Complete?	Sufficient?	Adequate?
(k) the proposed measures to prevent or mitigate the effects of accidental releases of nuclear substances and hazardous substances on the environment, the health and safety of persons and the maintenance of national security, including measures to (i) assist off-site authorities in planning and preparing to limit the effects of an accidental release, (ii) notify off-site authorities of an accidental release or the imminence of an accidental release, (iii) report information to off-site authorities during and after an accidental release, (iv) assist off-site authorities in dealing with the effects of an accidental release, and (v) test the implementation of the measures to prevent or mitigate the effects of an accidental release;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(l) the proposed measures to prevent acts of sabotage or attempted sabotage at the nuclear facility, including measures to alert the licensee to such acts;	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

Pursuant to Section 3 and 6 of the GNSCR and CINFR Licences – General Application Requirements	Location in Application or Supporting Document(s) as Noted by OPG	Complete?	Sufficient?	Adequate?
(m) the proposed responsibilities of and qualification requirements and training program for workers, including the procedures for the requalification of workers; and	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes
(n) the results that have been achieved in implementing the program for recruiting, training and qualifying workers in respect of the operation and maintenance of the nuclear facility.	OPG's application, Attachment 2, Licence Impact Assessment in Support of Construction and Operation of the Pickering Component Storage Structure at Pickering Waste Management Facility	Yes	Yes	Yes

A.2 Technical Basis

The technical basis for the recommendations presented in this CMD includes regulatory documents and national standards specified in the applicable sections of the PWMF LCH [4].

B. Safety and Control Area Framework

B.1 Safety and Control Areas Defined

The safety and control areas identified in section 3, and discussed in summary in sections 3.1 through 3.6, are comprised of specific areas of regulatory interest which vary between facility types.

The following table provides a high-level definition of each SCA impacted by this licence amendment application. The specific areas within each SCA are to be identified by the CMD preparation team in the respective areas within section 3 of this CMD.

SAFETY AND CONTROL AREA FRAMEWORK		
Functional Area	**Safety and Control Area**	**Definition**
Management	Operating Performance	Includes an overall review of the conduct of the licensed activities and the activities that enable effective performance.
Facility and Equipment	Safety Analysis	Covers maintenance of the safety analysis that supports that overall safety case for the facility. Safety analysis is a systematic evaluation of the potential hazards associated with the conduct of a proposed activity or facility and considers the effectiveness of preventive measures and strategies in reducing the effects of such hazards.
	Physical Design	Relates to activities that impact on the ability of systems, components and structures to meet and maintain their design basis given new information arising over time and taking changes in the external environment into account.
	Fitness for Service	Covers activities that impact on the physical condition of systems, components and structures to ensure that they remain effective over time. This area includes programs that ensure all equipment is available to perform its intended design function when called upon to do so.
Core Control Processes	Radiation Protection	Covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations*. This program must ensure that contamination levels and radiation doses received by individuals are monitored and controlled and maintained ALARA.

SAFETY AND CONTROL AREA FRAMEWORK		
Functional Area	**Safety and Control Area**	**Definition**
	Environmental Protection	Covers programs that identify, control and monitor all releases of radioactive and hazardous substances and effects on the environment from facilities or as the result of licensed activities.
	Waste Management	Covers internal waste-related programs which form part of the facility's operations up to the point where the waste is removed from the facility to a separate waste management facility. This area also covers the planning for decommissioning.

B.2 Specific Areas for this Facility Type

The following table identifies the specific areas impacted under relevant SCAs for this licence amendment application:

SPECIFIC AREAS FOR THIS FACILITY TYPE		
Functional Area	**Safety and Control Area**	**Specific Areas**
Management	Operating Performance	▪ Conduct of Licensed Activity ▪ Procedures ▪ Reporting and Trending
Facility and Equipment	Safety Analysis	▪ Deterministic Safety Analysis ▪ Hazard Analysis
	Physical Design	▪ Design Governance ▪ Facility Design ▪ Structure Design
	Fitness for Service	▪ Aging Management
Core Control Processes	Radiation Protection	▪ Application of ALARA ▪ Worker Dose Control ▪ Radiation Protection Program Performance ▪ Radiological Hazard Control
	Environmental Protection	▪ Effluent and Emissions Control (releases) ▪ Environmental Management System (EMS) ▪ Assessment and Monitoring ▪ Protection of People ▪ Environmental Risk Assessment
	Waste Management	▪ Waste Characterization ▪ Waste Management Practices ▪ Decommissioning Plans

PART 2

Part 2 of this CMD provides all relevant information pertaining directly to the licence, including:

1. The current licence;
2. The proposed licence; and
3. The draft licence conditions handbook.

Current Licence

The current PWMF licence (WFOL-W4-350.00/2028) is provided in the document indicated below.

Word: e-Doc 5156473	PDF: e-Doc 5188230

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

PDF Ref.: e-Doc 5188230
Word Ref.: e-Doc 5156473
File/Dossier: 2.05

WASTE FACILITY OPERATING LICENCE

PICKERING WASTE MANAGEMENT FACILITY

I) LICENCE NUMBER: **WFOL-W4-350.00/2028**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Ontario Power Generation Inc.
700 University Avenue
Toronto, Ontario
M5G 1X6

III) LICENCE PERIOD: This licence is valid from **April 1, 2018** to **August 31, 2028** unless suspended, amended, revoked, replaced, or transferred.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Pickering Waste Management Facility ("the facility") located at the Pickering Nuclear Generating Station, City of Pickering, Regional Municipality of Durham, Province of Ontario;

(ii) possess, transfer, use, process, package, manage, and store nuclear substances that are required for, associated with or arise from the activities described in (i);

(iii) transport Category II nuclear materials that are associated with the activities described in (i) on the site of the Pickering Nuclear Generating Station;

(iv) carry out the site preparation, construction, or construction modifications at the facility associated with the authorized additional processing and storage buildings, when on completion will result in a total of no more than 1 dry storage container processing building and no more than 6 used fuel dry storage buildings; and,

(v) possess and use prescribed equipment and prescribed information that are required for, associated with or arise from the activities described in (i), (ii), (iii), and (iv).

V) EXPLANATORY NOTES:

(i) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(ii) The Pickering Waste Management Facility licence conditions handbook (LCH) provides compliance verification criteria used to meet the conditions of this licence. The LCH also provides information on delegation of authority and document version control.

VI) CONDITIONS:

G GENERAL

G.1 Licensing Basis for Licensed Activities

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;

(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

G.2 Notification of Changes

The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 Financial Guarantee

The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.4 Public Information and Disclosure

The licensee shall implement and maintain a public information and disclosure program.

1 MANAGEMENT SYSTEM

1.1 Management System

The licensee shall implement and maintain a management system.

1.2 Management of Contractors

The licensee shall ensure that every contractor working at the facility complies with this licence.

2 HUMAN PERFORMANCE MANAGEMENT

2.1 Human Performance Program

The licensee shall implement and maintain a human performance program.

2.2 Training Program

The licensee shall implement and maintain a training program.

3 OPERATING PERFORMANCE

3.1 Operations Program

The licensee shall implement and maintain an operating program, which includes a set of operating limits.

3.2 Reporting Requirements

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

4 SAFETY ANALYSIS

4.1 Safety Analysis Program

The licensee shall implement and maintain a safety analysis program.

5 PHYSICAL DESIGN

5.1 Design Program

The licensee shall implement and maintain a design program.

5.2 Pressure Boundary

The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

6 FITNESS FOR SERVICE

6.1 Fitness for Service Program

The licensee shall implement and maintain a fitness for service program.

7 RADIATION PROTECTION

7.1 Radiation Protection

The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8 CONVENTIONAL HEALTH AND SAFETY

8.1 Conventional Health and Safety Program

The licensee shall implement and maintain a conventional health and safety program.

9 ENVIRONMENTAL PROTECTION

9.1 Environmental Protection

The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

9.2 Environmental Assessment Follow-up Program

The licensee shall implement an environment assessment follow-up program.

10 EMERGENCY MANAGEMENT AND FIRE PROTECTION

10.1 Emergency Preparedness Program

The licensee shall implement and maintain an emergency preparedness program.

10.2 Fire Protection Program

The licensee shall implement and maintain a fire protection program.

11 WASTE MANAGEMENT

11.1 Waste Management Program

The licensee shall implement and maintain a waste management program.

11.2 Decommissioning Plan

The licensee shall maintain a decommissioning plan.

12 SECURITY

12.1 Security Program

The licensee shall implement and maintain a security program.

12.2 Construction

The licensee shall not carry out the activities referred to in paragraph (ii) of Part IV of this licence that relate to completed construction activities in paragraph (iv) of Part IV of this licence until the submission of the proposed security arrangements and measures for the new building, or any potential modifications to the protected area that may be associated with this new building, that is acceptable to the Commission or a person authorized by the Commission.

13 SAFEGUARDS AND NON-PROLIFERATION

13.1 Safeguards Program

The licensee shall implement and maintain a safeguards program.

14 PACKAGING AND TRANSPORT

14.1 Packaging and Transport Program

The licensee shall implement and maintain a packaging and transport program.

15 FACILITY-SPECIFIC

15.1 Construction Plans

The licensee shall submit an environmental management plan, a construction verification plan and the project design requirements prior to the commencement of construction activities described in paragraph (iv) of Part IV of this licence.

15.2 Commissioning Report

The licensee shall not carry out the activities referred to in paragraph (ii) of Part IV of this licence that relate to completed construction activities in paragraph (iv) of Part IV of this licence until the submission of a commissioning report that is acceptable to the Commission or a person authorized by the Commission.

SIGNED at OTTAWA, this 6th day of February, 2018

M. Binder

Michael Binder, President
On behalf of the Canadian Nuclear Safety Commission

Proposed Licence Changes

Overview

One proposed change to wording of an existing licensed activity would impact the PWMF WFOL by expanding activities related to new construction to include the proposed PCSS.

A second proposed change to wording of an existing licence condition covering construction plans would impact the PWMF WFOL. The amended wording standardizes the licence condition language with that of another OPG WMF while also clarifying the requirement of the Commission, or a person authorized by the Commission, to accept documentation submitted by the licensee in support of construction before construction activities commence.

Licence Conditions

CNSC staff recommend amending paragraph (iv) of Part IV and licence condition 15.1 of the WFOL.

PROPOSED LICENCE CHANGES	
Existing WFOL	**Proposed WFOL**
IV) Licensed Activities: … (iv) carry out the site preparation, construction, or construction modifications at the facility associated with the authorized additional processing and storage buildings, when on completion will result in a total of no more than 1 dry storage container processing building and no more than 6 used fuel dry storage buildings;	IV) Licensed Activities: … (iv) carry out the site preparation, construction, or construction modifications at the facility associated with the authorized **low & intermediate-level waste storage building**, and authorized additional used fuel processing and storage buildings, when completion will result in a total of no more than **1 low & intermediate-level waste storage building**, 1 dry storage container processing building, and 6 used fuel dry storage buildings;
15.1 The licensee shall submit an environmental management plan, a construction verification plan, and the project design requirements prior to the commencement of construction activities described in paragraph (iv) of Part IV of this licence.	15.1 The licensee shall not carry out the activities referred to in paragraph (iv) of Part IV of this licence without the submission of an environmental management plan, a construction verification plan, and the project design requirements**, and without prior written acceptance from the Commission or a person authorized by the Commission.**

Licence Format

No change to the licence format is being requested or recommended.

Licence Period

No change to the licence period is being requested or recommended.

Proposed Licence

The proposed PWMF licence (WFOL-W4-350.01/2028) is provided in the document indicated below.

Word: e-Doc 7425908	PDF: e-Doc 7477327

Canadian Nuclear Safety Commission | Commission canadienne de sûreté nucléaire

PDF Ref.: e-Doc 7477327
Word Ref.: e-Doc 7425908
File/Dossier: 2.05

WASTE FACILITY OPERATING LICENCE

PICKERING WASTE MANAGEMENT FACILITY

I) LICENCE NUMBER: **WFOL-W4-350.01/2028**

II) LICENSEE: Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:

Ontario Power Generation Inc.
700 University Avenue
Toronto, Ontario
M5G 1X6

III) LICENCE PERIOD: This licence is valid from **July XX, 2025** to **August 31, 2028** unless suspended, amended, revoked, replaced, or transferred.

IV) LICENSED ACTIVITIES:

This licence authorizes the licensee to:

(i) operate the Pickering Waste Management Facility ("the facility") located at the Pickering Nuclear Generating Station, City of Pickering, Regional Municipality of Durham, Province of Ontario;

(ii) possess, transfer, use, process, package, manage, and store nuclear substances that are required for, associated with or arise from the activities described in (i);

(iii) transport Category II nuclear materials that are associated with the activities described in (i) on the site of the Pickering Nuclear Generating Station;

(iv) carry out the site preparation, construction, or construction modifications at the facility associated with the authorized low & intermediate-level waste storage building, and authorized additional used fuel processing and storage buildings, when completion will result in a total of no more than 1 low & intermediate-level waste storage building, 1 dry storage container processing building, and 6 used fuel dry storage buildings; and,

(v) possess and use prescribed equipment and prescribed information that are required for, associated with or arise from the activities described in (i), (ii), (iii), and (iv).

V) EXPLANATORY NOTES:

(i) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.

(ii) The Pickering Waste Management Facility licence conditions handbook (LCH) provides compliance verification criteria used to meet the conditions of this licence. The LCH also provides information on delegation of authority and document version control.

VI) CONDITIONS:

G GENERAL

G.1 Licensing Basis for Licensed Activities

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;

(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

G.2 Notification of Changes

The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.

G.3 Financial Guarantee

The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.

G.4 Public Information and Disclosure

The licensee shall implement and maintain a public information and disclosure program.

1 MANAGEMENT SYSTEM

1.1 Management System

The licensee shall implement and maintain a management system.

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The licensee shall ensure that every contractor working at the facility complies with this licence.

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2.1 Human Performance Program

The licensee shall implement and maintain a human performance program.

2.2 Training Program

The licensee shall implement and maintain a training program.

3 OPERATING PERFORMANCE

3.1 Operations Program

The licensee shall implement and maintain an operating program, which includes a set of operating limits.

3.2 Reporting Requirements

The licensee shall implement and maintain a program for reporting to the Commission or a person authorized by the Commission.

4 SAFETY ANALYSIS

4.1 Safety Analysis Program

The licensee shall implement and maintain a safety analysis program.

5 PHYSICAL DESIGN

5.1 Design Program

The licensee shall implement and maintain a design program.

5.2 Pressure Boundary

The licensee shall implement and maintain a pressure boundary program and have in place a formal agreement with an Authorized Inspection Agency.

6 FITNESS FOR SERVICE

6.1 Fitness for Service Program

The licensee shall implement and maintain a fitness for service program.

7 RADIATION PROTECTION

7.1 Radiation Protection

The licensee shall implement and maintain a radiation protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

8 CONVENTIONAL HEALTH AND SAFETY

8.1 Conventional Health and Safety Program

The licensee shall implement and maintain a conventional health and safety program.

9 ENVIRONMENTAL PROTECTION

9.1 Environmental Protection

The licensee shall implement and maintain an environmental protection program, which includes a set of action levels. When the licensee becomes aware that an action level has been reached, the licensee shall notify the Commission within seven days.

9.2 Environmental Assessment Follow-up Program

The licensee shall implement an environment assessment follow-up program.

10 EMERGENCY MANAGEMENT AND FIRE PROTECTION

10.1 Emergency Preparedness Program

The licensee shall implement and maintain an emergency preparedness program.

10.2 Fire Protection Program

The licensee shall implement and maintain a fire protection program.

11 WASTE MANAGEMENT

11.1 Waste Management Program

The licensee shall implement and maintain a waste management program.

11.2 Decommissioning Plan

The licensee shall maintain a decommissioning plan.

12 SECURITY

12.1 Security Program

The licensee shall implement and maintain a security program.

12.2 Construction

The licensee shall not carry out the activities referred to in paragraph (ii) of Part IV of this licence that relate to completed construction activities in paragraph (iv) of Part IV of this licence until the submission of the proposed security arrangements and measures for the new building, or any potential modifications to the protected area that may be associated with this new building, that is acceptable to the Commission or a person authorized by the Commission.

13 SAFEGUARDS AND NON-PROLIFERATION

13.1 Safeguards Program

The licensee shall implement and maintain a safeguards program.

14 PACKAGING AND TRANSPORT

14.1 Packaging and Transport Program

The licensee shall implement and maintain a packaging and transport program.

15 FACILITY-SPECIFIC

15.1 Construction Plans

The licensee shall not carry out the activities referred to in paragraph (iv) of Part IV of this licence without the submission of an environmental management plan, a construction verification plan, and the project design requirements, and without prior written acceptance from the Commission or a person authorized by the Commission.

15.2 Commissioning Report

The licensee shall not carry out the activities referred to in paragraph (ii) of Part IV of this licence that relate to completed construction activities in paragraph (iv) of Part IV of this licence until the submission of a commissioning report that is acceptable to the Commission or a person authorized by the Commission.

SIGNED at OTTAWA, this _____ day of ___July_____, 2025

_____
Pierre Tremblay, President
On behalf of the Canadian Nuclear Safety Commission

Draft Licence Conditions Handbook

The relevant sections revised in the draft PWMF LCH are provided in the document identified below.

Word: e-Doc 7426093	PDF: e-Doc 7477293

Note the following text is proposed for addition to the PWMF LCH under licence condition 15.1:

Upon review and acceptance of the environmental management plan, construction verification plan, project design requirements and preliminary safety analysis report, the Commission or a person authorized by the Commission, will provide formal written notification that OPG is authorized to begin construction activities referred to in paragraph (iv) of Part IV of this licence, for the new structure.

Delegation of Authority

The statement "or a person authorized by the Commission" reflects to whom the Commission has delegated certain authority. The delegation of authority by the Commission to act as a "person authorized by the Commission" is applied to the incumbents of the following positions:

- Director, Wastes and Decommissioning Division;
- Director General, Directorate of Nuclear Cycle and Facilities Regulations; and,
- Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch.

Canada's Nuclear Regulator

e-Doc 7426093 (Word)
e-Doc 7477293 (PDF)

DRAFT

LICENCE CONDITIONS HANDBOOK

Title Page, Licence Conditions G.1 and 15.1

LCH-W4-350.01/2028

Pickering Waste Management Facility

Waste Facility Operating Licence

WFOL-W4-350.01/2028

Revision 4

Canadian Nuclear Safety Commission
Commission canadienne de sûreté nucléaire

Canada

GENERAL

Licence Condition G.1 Licensing Basis for Licensed Activities

The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:

(i) the regulatory requirements set out in the applicable laws and regulations;

(ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence;

(iii) the safety and control measures described in the licence application and the documents needed to support that licence application;

unless otherwise approved in writing by the Canadian Nuclear Safety Commission (hereinafter "the Commission").

Preamble

The licensing basis is discussed in REGDOC 3.5.3, *Regulatory Fundamentals.*

The standardized LCs, organized by Safety and Control Area (SCA), apply to all the licensed activities. Specific LCs were added for nuclear facility-specific activities, if required.

Compliance Verification Criteria

Licensee Documents that Require Notification of Change

Doc #	Title	Prior Notice
92896-CORR-00531-01031	Application for Renewal of Pickering Waste Management Facility Operating Licence	N/A
92896-CORR-00531-01075	Additional Information to Support the Application for Renewal of Pickering Waste Management Facility Operating Licence	N/A

Doc #	Title	Prior Notice
92896-CORR-00531-01478	Change Request Application for Amendment to the Pickering Waste Management Facility (PWMF) Waste Facility Operating Licence WFOL W4-350.00/2028	N/A
92896-CORR-00531-01530 P	OPG - Addendum to the Application for Amendment to the Pickering Waste Management Facility, Waste Facility Operating Licence WFOL-W4-350.00/2028	N/A
92896-CORR-00531-01544 P 92896-CORR-00531-01571 P 92896-CORR-00531-01570 P	Pickering Waste Management Facility - Application for Waste Facility Operating Licence WFOL-W4-350.00/2028 Amendment to Construct and Operate the Pickering Component Storage Structure	N/A

FACILITY SPECIFIC

Licence Condition 15.1 Construction Plans

The licensee shall not carry out the activities referred to in paragraph (iv) of Part IV of this licence without the submission of an environmental management plan, a construction verification plan, and the project design requirements, and without prior written acceptance from the Commission or a person authorized by the Commission.

Preamble

None provided.

Compliance Verification Criteria

Licensing Basis Publications

Org	Doc #	Title	Version	Effective Date
CSA Group	N393	Fire protection for facilities that process, handle, or store nuclear substances	2022	Implemented
NRC	N/A	National Building Code of Canada	2020	Implemented
NRC	N/A	National Fire Code of Canada	2020	Implemented
CNSC	REGDOC- 2.9.1	Environmental Protection: Environmental Principles, Assessments and Protection Measures Version 1.1	2017	Implemented

The CNSC will confirm that both an environmental management plan and a construction verification plan are in effect prior to the commencement of construction activities as authorized in paragraph (iv) of Part IV of this licence.

The CNSC will confirm that appropriate design requirements have been developed and submitted to the CNSC prior to the onset of construction activities. CNSC staff will confirm that the project design requirements comply with the NRC *National Fire Code of Canada (2020)*, NRC *National Building Code of Canada (2020)*, and CSA Group standard N393, *Fire Protection for Facilities That Process, Handle, or Store Nuclear Substances (2022)* and REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures Version 1.1*.

Furthermore, the licensee must demonstrate that any design changes remain within the Commission approved licensing basis.

Upon review and acceptance of the environmental management plan, construction verification plan, project design requirements and preliminary safety analysis report, the Commission or a person

authorized by the Commission, will provide formal written notification that OPG is authorized to begin construction activities referred to in paragraph (iv) of Part IV of this licence, for the new structure.

Delegation of Authority

The statement "or a person authorized by the Commission" reflects to whom the Commission has delegated certain authority. The delegation of authority by the Commission to act as a "person authorized by the Commission" is applied to the incumbents of the following positions:

- Director, Wastes and Decommissioning Division;
- Director General, Directorate of Nuclear Cycle and Facilities Regulations; and,
- Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch.

Guidance

None provided.