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CMD 27-H1.1

Date: 2026-11-13

Written Submission from Ontario Power Generation

Mémoire d'Ontario Power Generation

In the matter of

À l'égard d'

Ontario Power Generation

Ontario Power Generation

Application to renew operating licence for the Western Waste Management Facility

Demande visant à renouveler le permis d'exploitation de l'installation de gestion des déchets Western

Commission Public Hearing

Audience publique de la Commission

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Canada

ONTARIO POWER GENERATION

1908 Colonel Sam Drive, Oshawa, ON L1H 8P7

OPG Proprietary

November 13, 2026

CD# W-CORR-00531-02130

Ms. Candace Salmon
Commission Registrar,
Canadian Nuclear Safety Commission
280 Slater Street
Ottawa, Ontario, K1P 5S9

Dear Ms. Salmon:

Submission of Commission Member Document in support of Licence Application for Western Waste Management Facility

The purpose of this letter is to submit to the Canadian Nuclear Safety Commission (CNSC), Ontario Power Generation Inc.'s (OPG) Commission Member Document (CMD) to supplement the application for renewal of the Western Waste Management Facility (WWMF) Waste Facility Operating Licence (WFOL), WFOL-W4-314.01/2027 [R-1].

Attachment 1 of this submission is the OPG CMD, which provides supplemental information consisting of updates on items raised in OPG's renewal application [R-1]. The information provided in this CMD demonstrates that OPG is qualified to carry on the licensed activities to operate the WWMF as a Class 1B nuclear facility, while meeting the requirements in the Act and Regulations.

The CMD also provides supplemental information to the CNSC on the ongoing Indigenous Engagement activities in support of the licence renewal. OPG continues to prioritize and makes regular efforts to engage and collaborate with Indigenous Rightsholders on ongoing operations, as well as proposed initiatives at the WWMF.

OPG remains committed to the safe and reliable operation of the WWMF, safeguarding the health, safety, and security of individuals and the environment and will continue to meet the requirements of the Nuclear Safety and Control Act and the associated Regulations.

Should there be any questions, please contact Mr. Craig Axler, Director, Nuclear Regulatory Affairs, craig.axler@opg.com.

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Sincerely,



David MacDiarmid
Vice President
Nuclear Sustainability Strategies and Services
Ontario Power Generation Inc.

Attach

cc: J. Thelen
K. Ross
N. Chan
P. MacDonald
forms-formulaires@cnsc-ccsn.gc.ca

Reference: 1. OPG Letter, K. Aggarwal to C. Salmon, "Submission of Renewal Application for Western Waste Management Facility", May 1, 2026, CD# W-CORR-00531-02105.

Summary of Regulatory Commitments

CD# W-CORR-00531-02130

Submission Title: **Submission of Commission Member Document in support of Licence Application for Western Waste Management Facility**

Regulatory Commitments (REGC):

No.	Description	Date to be Completed
	None	

Regulatory Management Action (REGM):

No.	Description	Date to be Completed
	None	

Regulatory Obligation Action (REGO):

No.	Description	Date to be Completed
	None	

CNSC Action Requested: Renewal of the Western Waste Management Facility's Waste Facility Operating Licence

ATTACHMENT 1

OPG Letter, D. MacDiarmid to C. Salmon, “Submission of Commission Member Document in support of Licence Application for Western Waste Management Facility”, CD# W-CORR-00531-02130

Western Waste Management Facility Licence Renewal Commission Member Document

Western Waste Management Facility

Licence Renewal Commission Member Document

OPG





Land Acknowledgement

Ontario Power Generation Inc. (OPG) acknowledges that the Western Waste Management Facility is located on the traditional territory of the Chippewas of Saugeen First Nation and the Chippewas of Nawash Unceded First Nation, collectively known as the Saugeen Ojibway Nation, and are the traditional keepers of the land.

The area is also home to many diverse First Nations, Inuit, and Métis peoples and as a company, we remain committed to fostering positive and mutually beneficial relationships with Indigenous Peoples and communities across Ontario.



Executive Summary

Ontario Power Generation Inc. (OPG) requests that the Canadian Nuclear Safety Commission (CNSC) renew the Waste Facility Operating Licence (WFOL) for the Western Waste Management Facility (WWMF), Licence W4-314.01/2027, for a 10-year term from June 1, 2027, to May 31, 2037.

The WWMF is a critical component of Ontario's clean-energy infrastructure. The WWMF provides the waste processing, storage, and supporting services required for the continued safe and reliable operation of Ontario's nuclear generating stations. Renewal of the WWMF WFOL will enable OPG to continue managing radioactive waste responsibly while maintaining the capacity, flexibility, and oversight needed to support current operations and future waste-management requirements.

Since commencing operations in 1974, the WWMF has demonstrated a strong record of safe performance and regulatory compliance. OPG's programs and practices are designed to protect workers, the public, Indigenous Peoples, and the environment, and to meet the requirements of the *Nuclear Safety and Control Act*, associated regulations, and applicable CNSC regulatory documents and standards.

OPG has continued to strengthen WWMF operations through innovation and continuous improvement. Recent initiatives include enhanced waste minimization, sorting, recycling, volume-reduction capabilities, modernization of waste-tracking processes, upgrades to transportation capacity, and refurbishment of waste-processing equipment. These efforts support waste reduction while facilitating the safe management of existing and anticipated waste streams.

This Commission Member Document (CMD) highlights strengths and achievements in each Safety and Control Area (SCA) and includes updated information since OPG's licence application was submitted in May 2026, including improvements made or planned, to support operation through the end of the requested licence term. OPG is proud of its strong performance, long-standing safety record and many significant achievements at the WWMF during the current licence term. Our track record reflects the unwavering commitment, diligence, and pursuit of excellence demonstrated by our personnel every day in supporting the safe and reliable operation of the WWMF. Public and environmental safety is our top priority.

The requested licence renewal maintains authorization for the activities currently conducted at the WWMF, including site preparation, construction, and modifications associated with additional authorized structures. OPG requests the following changes to the licence:

- amendment to Licence Condition 9.1 to align the action level requirements with CSA N288.8-17. Specifically, OPG requests the removal of the following text from the Licence Condition: "...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." This amendment would ensure consistency between the Licence Condition and the action level framework established in CSA N288.8-17.
- removal of Tables 2 and 3 in Appendix A of the current licence as the Bruce Major Component Replacement has since been authorized by the Commission, and
- amendment to Licence Condition 15.2 to reflect the removal of Tables 2 and 3 in Appendix A of the current licence.

OPG recognizes that continued operation and future activities at the WWMF must be carried out with meaningful Indigenous engagement and transparent communication with communities and the public. The WWMF is located within the traditional territory of the Saugeen Ojibway Nation, and OPG continues to



engage with Indigenous Nations and communities, including the Saugeen Ojibway Nation, Métis Nation of Ontario Region 7, and Historic Saugeen Métis. OPG is committed to ongoing dialogue, consideration of potential impacts on Aboriginal and treaty rights, and implementation of its reconciliation commitments. OPG will also continue to maintain an open, timely, and accessible public information and disclosure program.

In summary, the information provided in OPG's application as well as this CMD demonstrates that OPG:

- Is qualified to carry out the activities to be licensed; and,
- Will, in carrying out those activities, continue to ensure the health and safety of persons, protection of the environment and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

OPG's application demonstrates that the WWMF can continue to operate safely throughout the proposed licence term. With established environmental, safety, security, emergency-management, aging-management, financial-guarantee, decommissioning-planning, and regulatory-reporting programs in place, OPG is prepared to sustain strong performance while adapting to evolving operational requirements and regulatory expectations.

OPG therefore requests that the Commission renew the WWMF WFOL for the period June 1, 2027 to May 31, 2037. This renewal will support the continued safe, responsible, and sustainable management of nuclear waste and help ensure Ontario's nuclear fleet can continue to provide reliable, low-carbon electricity.



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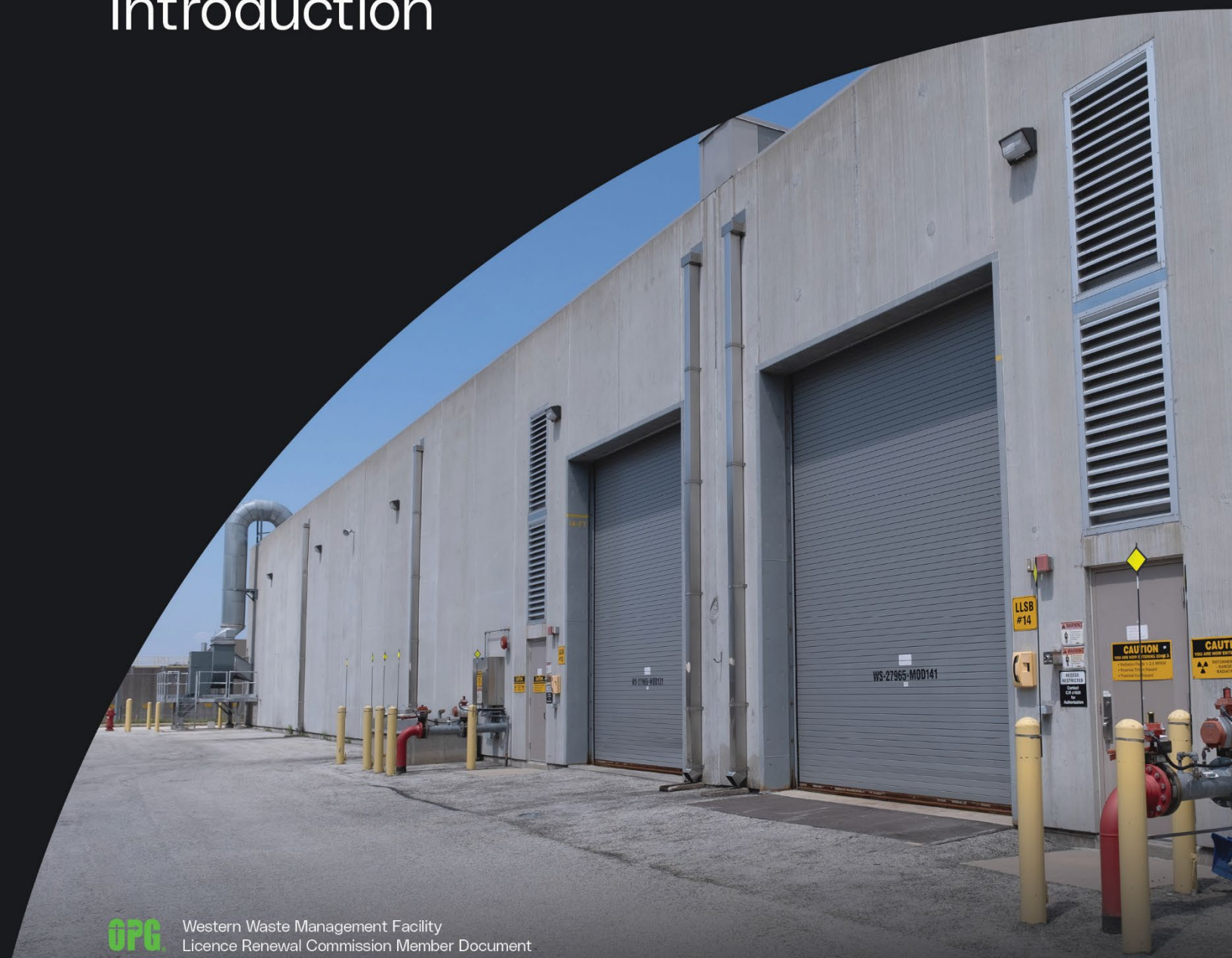
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1.0

Introduction





1.0 Introduction

OPG's Nuclear Sustainability Services (NSS) focuses on the safe handling and management of the nuclear waste produced by Ontario's power generating stations, while planning for the province's future fleet of generating stations, plant refurbishments, and decommissioning projects. With decades of operational experience and expertise managing the waste in our care, OPG ensures the safe and secure interim storage of all radioactive materials at its waste management facilities, including the Western Waste Management Facility (WWMF) located at the Bruce nuclear site in the Municipality of Kincardine, Ontario. OPG takes full responsibility for the entire lifecycle of the waste, from interim storage, to planning for its effective long-term management, to safe disposal of nuclear waste.

The WWMF is currently licensed by the CNSC under section 24(2) of the *Nuclear Safety and Control Act*. The WWMF is a Class 1B nuclear facility as defined in the *Class 1 Nuclear Facilities Regulations* to provide for the safe handling, management, processing and the interim storage of radioactive wastes, including Low and Intermediate Level Radioactive Waste (L&ILW) from nuclear generating stations and other facilities currently or previously operated by OPG, or its predecessor Ontario Hydro. Additionally, the WWMF also manages used fuel from the Bruce Power Nuclear Generating Stations (NGS).

In May 2026, OPG submitted an application (Reference 1) which provided information to demonstrate that the WWMF will continue to meet or exceed all the legal requirements of the Nuclear Safety and Control Act and the associated Regulations, and that the WWMF will continue to operate safely and within the required margins for a waste management facility.

OPG requests the Canadian Nuclear Safety Commission (CNSC) to authorize:

- The renewal of the WWMF Waste Facility Operating Licence authorizing OPG to carry out the activities listed in Appendix C of Reference 1 for a 10-year term from June 1, 2027 to May 31, 2037.
- Amendment to Licence Condition 9.1 to align the action level requirements with CSA N288.8-17. Specifically, OPG requests the removal of the following text from the Licence Condition: "...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." This amendment would ensure consistency between the Licence Condition and the action level framework established in CSA N288.8-17.
- The removal of Tables 2 and 3 from Appendix A of the current licence as the Bruce Major Component Replacement has since been authorized by the Commission.
- Amendment to Licence Condition 15.2 to align with the removal of Tables 2 and 3 from the Appendix.

The WWMF has been operating safely since it was established in 1974. We remain focused on proactively preventing waste, safely managing our responsibilities, and harnessing innovation to reduce waste and support a safer, more sustainable future. Guided by the NSS strategic initiatives, we are dedicated to advancing solutions that continue to protect our communities and environment.

OPG is committed to working with Indigenous Nations and communities, proximate to its present and future operations, to foster positive and mutually beneficial relationships. Our relationships are developed on a foundation of respect for the rights of Indigenous Nations and communities, and our goal is to build and foster openness, transparency, and trust in our engagement efforts. OPG's relationship with Indigenous Nations and communities has evolved over the last 10 years. As a continuous learning and growing organization, OPG has been adaptive and flexible to be responsive to the Truth and



Reconciliation Commission of Canada's Calls to Action and ongoing feedback from the Indigenous Nations and communities OPG works with. OPG remains committed to strengthening relationships with Indigenous Nations and communities and facilitating continued engagement at the WWMF through the licence renewal application process and going forward into the future.

OPG also believes in open and transparent communication in a timely manner to maintain positive and supportive relationships, and the confidence of Indigenous Peoples, key stakeholders and the local community who have an interest in the operation and management of the WWMF site.

1.1 Site Description and Ownership

OPG's WWMF is located on the Bruce Nuclear site which is located on the traditional territory of Saugeen Ojibway Nation, on the west shore of Lake Huron within the Municipality of Kincardine in the province of Ontario (Figure 1 and Figure 2). The WWMF, established in 1974, is a Class 1B nuclear facility as defined in the *Class 1 Nuclear Facilities Regulations* for the safe handling, management, processing, and interim storage of L&ILW received from power generating stations and other facilities currently or previously operated by OPG or its predecessor Ontario Hydro, and the interim storage of used fuel from the Bruce Power NGS.



Figure 1: Location of the WWMF on the Bruce Nuclear Site



Figure 2: Western Waste Management Facility

The WWMF has undergone development in stages since 1974. Consistent with industry best practice, additional storage buildings and structures are constructed when required. The chronology of



development at the WWMF is shown in Table 1 and Table 2. A description of the site structures is provided in Section 2.5.

Table 1: Chronology of Development for L&ILW at WWMF

Structure/Building	Units	Number/ Capacity	In-Service Date
Above-ground Structure or Building			
Low Level Storage Buildings	1	7,050 m^3	Oct 1982
	2	7,050 m^3	Dec 1985
	3	7,050 m^3	Mar 1988
	4	7,050 m^3	Jun 1989
	5	7,050 m^3	Jun 1989
	6	7,050 m^3	Nov 1992
	7	7,050 m^3	Dec 1999
	8	7,050 m^3	May 2002
	9	7,050 m^3	Dec 2004
	10	7,050 m^3	Jan 2007
	11	7,000 m^3	May 2009
	12	7,000 m^3	Sep 2011
	13	7,000 m^3	Jul 2013
	14	7,000 m^3	Jul 2013
Retube Component Storage Buildings	1	298 RWC	Jan 2007
	2	240 RWC	Dec 2025
Multi-Purpose Storage Building	1	64 SGs	Sep 2025
Quadricells	1 Stage (15)	360 m^3	Oct 1978
Contaminated Tool Storage Area		4,700 m^3	Sep 1990
In-ground Storage Structures			
Trenches	Stage 1	2,080 m^3	Dec 1974
	Stage 3	1,440 m^3	Mar 1976
	Stage 3E	2,350 m^3	May 1979
Tile Holes	Stage 1	80 m^3	Mar 1974
	Stage 3	144 m^3	Jun 1977
In-Ground Containers	Type (#)		
	IC-2 (20)	40 m^3	Dec 1985
	IC-12 (20)	240 m^3	Mar 1987
	IC-18 (8)	144 m^3	Jun 1989
	IC-18 (32)	576 m^3	Dec 1990
	IC-18 (54)	972 m^3	Oct 1993
	IC-18 (50)	900 m^3	May 1997
	IC-18 (54)	972 m^3	Feb 2002
	IC-18 (54)	972 m^3	Jul 2013
	IC-18 (54)	972 m^3	Sep 2022



Structure/Building	Units	Number/ Capacity	In-Service Date
In-Ground Heat Exchanger Containers (IC-HX)	Area 1, Phase 1 Area 1, Phase 2 Area 1, Phase 3 Area 2, Phase 4	23 4 10 4	1991 1993 1997 2002
Processing			
Waste Volume Reduction Building • Upgraded	1	n/a	1977 2002
Radioactive Incinerator • Replacement	1	n/a	1977 – 2001 2002
Box Compactor • B-400 • B-1000	1	n/a	 1993 – 2010 2011
Other			
Amenities Building	1	n/a	Dec 2001
TPMB	1	n/a	Dec 2004

Table 2: Chronology of Development for Used Fuel at WWMF

Building	Number	Capacity	In-Service Date
Processing Building	1		Oct 2002
Storage Building	1 2 3 4 5 6	500 DSCs (nominal) 500 DSCs (nominal) 500 DSCs (nominal) 500 DSCs (nominal) 500 DSCs (nominal) 500 DSCs (nominal)	Oct 2002 Dec 2007 Dec 2012 Dec 2012 Mar 2022 Mar 2022

Figure 3 shows the current layout of the existing licensed area of the WWMF including areas that have been assessed for future construction.



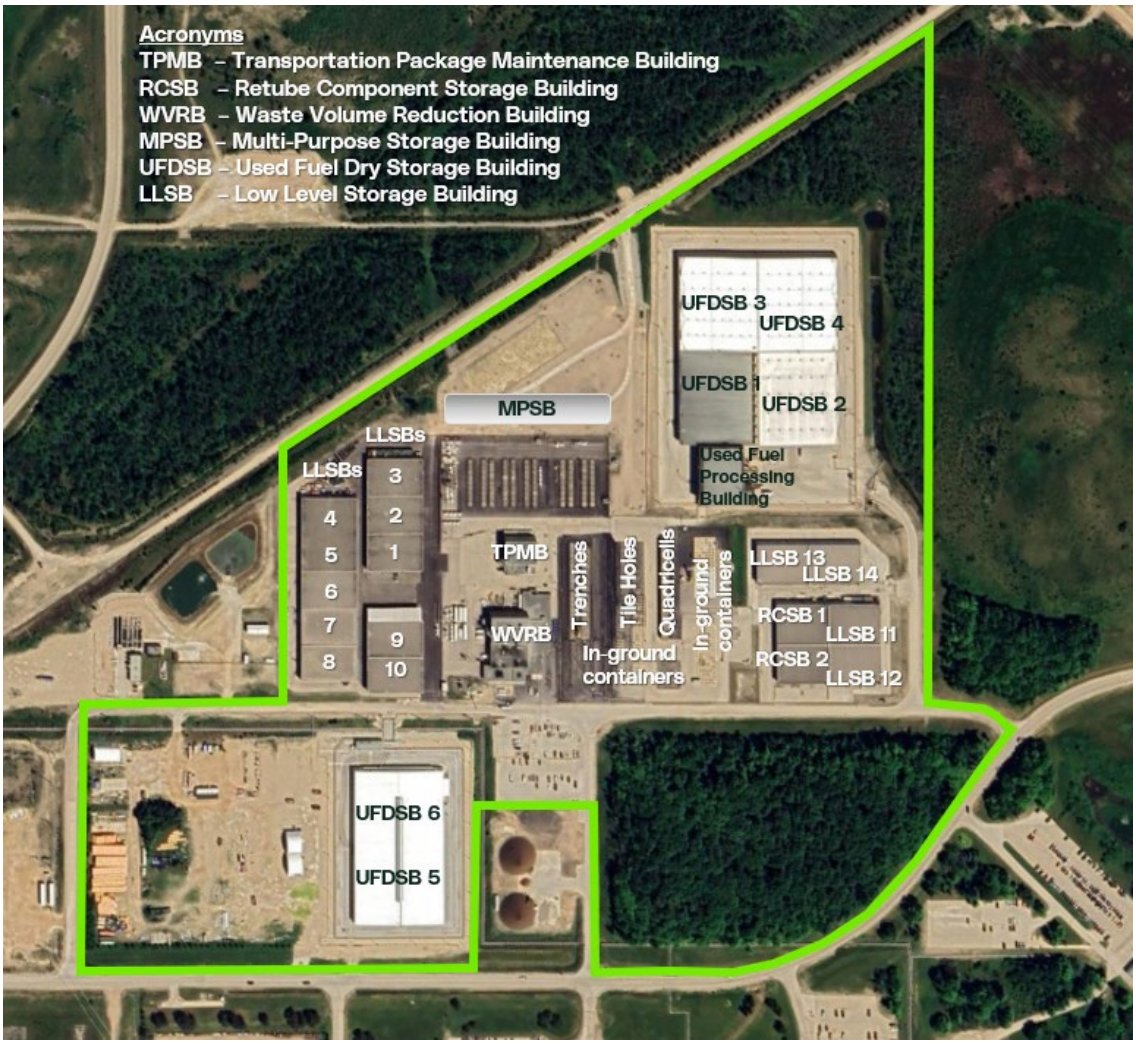


Figure 3: Layout of the WWMF

1.2 Performance – Achievements/Initiatives

In 2024, OPG celebrated 50 years of excellence at the WWMF. Since commissioning in 1974, the teams at the WWMF have been instrumental in safely processing and storing radioactive waste from Ontario's power generating stations.

The WWMF has demonstrated strong safety performance with no lost time injuries since 2011. Throughout the current licence period, a strong focus on building and maintaining a healthy nuclear safety culture has been demonstrated with improvements in facility conditions for staff, improvements in the Nuclear Safety and Security Culture Monitoring Panels and investments in equipment reliability. OPG continues to safely and reliably transfer, process and store all levels of radioactive waste at the WWMF. There have been more than 2,300 DSCs transferred and processed safely at the WWMF site, with over 1000 DSCs transferred and processed safely during the current licence period.



Following the cancellation of OPG's Deep Geological Repository for Low and Intermediate Level Wastes in early 2020, OPG established a new strategic plan with a focus on maximizing waste minimization to optimize existing infrastructure investments. Building on waste-sorting pilot projects previously undertaken, OPG expanded these initiatives and applied the results to establish the Western Clean-Energy Sorting and Recycling Facility (WCSR). This facility has its own separate licence and is not located on the WWMF. The purpose of the facility is to sort and segregate legacy and some operational waste to maximize volume reduction. Legacy waste stored at the WWMF is transferred to the WCSR facility where specialized equipment and personnel sort the waste. Waste is sorted into incinerable, compactable, potential free release, other processing and non-processible streams. This allows OPG to take advantage of improved technology, radioactive decay and optimization of the WWMF's existing processing facilities. Through the material sorting and restreaming activities of the WCSR, OPG has seen a reduction in the volume of waste requiring storage at WWMF of over 3,000 m^3 since the start of 2025. The practice of sorting and segregating legacy waste contributed to the identification of an area of good performance for Canada at the International Atomic Energy Agency (IAEA) Joint Convention for the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management in 2025.

OPG continues to look for innovative opportunities to minimize the footprint of nuclear waste at the WWMF site. Through the systematic review and evaluation of waste management efficiencies from a strategic perspective, OPG is able to determine the best approaches to minimize waste.

1.3 Our People

OPG is committed to equity, diversity, and inclusion (ED&I) in its workplace, ensuring fair and respectful treatment for all employees, contractors, and business partners. OPG's 10-year ED&I Strategy, launched in 2021, outlined nearly 100 initiatives and 15 strategic priorities, with substantial completion of all actions by December 31, 2024. As a result, OPG was recognized as one of Canada's Best Diversity Employers in 2023.

To maintain momentum, OPG has identified new ED&I actions for 2025–2027, with a renewed focus on building a diverse workforce that represents our communities and creating a culture of inclusion. In 2024, OPG also refreshed its Reconciliation Action Plan (RAP), adding new actions, and continues to hold a Gold Designation from the Canadian Council for Indigenous Business for best practices in Indigenous Relations.

OPG will continue updating its ED&I Strategy, focusing on diversity education, expanding community partnerships, and advancing employment equity.

1.4 Innovation at OPG

OPG's advancements in innovation are driven by initiatives supported through OPG's Monitoring & Diagnostics (M&D) Centre, X-LAB, benchmarking, and innovations in training.

Over the past decade, NSS has systematically adopted advanced technologies to enhance communication, collaboration, and operational efficiency in support of our mandate. NSS has developed a virtual reality (VR) digital twin of the WWMF, which is routinely utilized for preliminary system walkdowns, public engagement activities (including interactive outreach events and "Take Your Kid to Work Day") and as a measurement tool for areas that are difficult to physically access. This VR platform supports both operational readiness and stakeholder transparency.



Additionally, NSS has integrated OPG Street View Technology across all waste management facilities. This initiative enables remote, desktop-based walkthrough of the facilities, which significantly reduces the need for vendor site visits, enhances the quality and preparedness of pre-job discussions, and contributes to improved safety and minimized radiation dose by limiting unnecessary on-site presence.

NSS has also deployed 3D printing technology to enhance communication and design objectives. Custom scale models of waste structures, systems, and components are produced to facilitate clear communication with the public and stakeholders. Rapid prototyping using 3D printing has enhanced the quality of design reviews by enabling tangible evaluation of proposed modifications. Furthermore, 3D printing has been employed to fabricate simple, fit-for-purpose components, such as spacers for sensor alignment and camera mounts to support aging management inspections of DSCs, thereby supporting operational effectiveness and continuous improvement. When 3D printed items are used as part of systems structures or components, OPGs engineering change control process is followed ensuring appropriate quality control and configuration management.

These technological advancements demonstrate NSS's commitment to innovation, safety stakeholder engagement, and operational excellence in the management of nuclear waste.

OPG's Innovation Department (X-Lab)

OPG's innovation department, coined the "X-Lab", was established in 2017. The X-Lab is dedicated to transforming perspectives, fostering creativity, and implementing cutting-edge technologies and processes. These initiatives have brought value and efficiency to OPG's daily operations, while advancing OPG towards its net-zero climate goals. The X-Lab Innovation team spearheads innovation in the utility sector with a mission to redefine standards. The team's vision is to drive enhancements in equipment reliability, safety, and employee efficiency while nurturing an innovation culture.

In 2023, the Electric Power Research Institute Global Innovation Effectiveness Cohort reviewed OPG's innovation practices and processes and recognized the X-Lab Innovation team for industry-leading practices. Global Innovation Effectiveness aims to provide insights into the effectiveness of innovation by examining how utilities strategize, structure, and cultivate an innovative culture.

The X-Lab Innovation team supported the implementation of micro-drones for operation, enabling lightweight drones to be utilized by staff. This allows for visual inspections to be performed more efficiently.

OPG demonstrates industry leadership in robotic utilization through the adoption of the Spot Robotics Platform by Boston Dynamics. This platform drives efficiency while maintaining OPG's high level of executional excellence and safety. The Spot robot has enabled OPG to perform tasks online, and in harsh environments that would otherwise require a unit outage to perform safely by a human. Extensive use of robotics for investigations of high dose rate areas reduces personnel entries into containment areas which results in reduced volume of personal protective equipment (PPE) waste generated.

Innovative Strategies for Training

OPG's Training strategies have innovation embedded in its program through use of simulators:

- Radiation Protection (RP) training has improved RP technician performance by incorporating a Simulated Radiological Source Generator into their continuing training. A radio frequency simulated source eliminates actual live radiological sources. Technicians are demonstrating greater radiological risk mitigation proficiency while eliminating any exposure to radiological sources. The



simulation equipment includes portable wireless dosimeters, survey meters, gamma sources and scenarios that mimic conditions that were unachievable in previous training conditions.

- Micro-learning through Video Learning-On-Demand library with 550 videos is available to refresh skills.

1.5 Improvement Plans and Significant Future Activities

An overview of OPG's planned improvements and significant future activities concerning the WWMF during the requested 10-year licence term is discussed below, with further details provided in Section 2.5.

Additional authorized storage buildings and structures

Construction of additional storage capacity at the WWMF is already approved in the current licence. The additional storage capacity is essential for supporting the ongoing and future operations of Ontario's nuclear generating stations. As these stations continue to produce clean electricity, they also generate low and intermediate level radioactive waste and used nuclear fuel. By expanding storage capacity at the WWMF, OPG ensures there is sufficient, safe, and secure space to manage and store this material, enabling the stations to operate without interruption. This proactive planning supports regulatory compliance, maintains operational flexibility, and upholds commitments to safety and environmental protection.

Table 3 summarizes construction plans for buildings and structures at the WWMF that are already approved in the current WFOL. The table shows what was built up to December 2025, and what is approved but not yet constructed and is being carried over into the next licence period. These planned structures will provide storage capacity for used fuel as well as processes to manage low and intermediate level waste.

Where known, the planned in-service dates are shown in Table 3 in brackets for each of the buildings and structures to be constructed. These dates may vary and will coincide with and be determined by business decisions.

Table 3: Construction Plans for Approved Buildings and Structures

Storage Buildings/ Structures	Constructed between 2017-2025	Approved in current Licence but not yet built, carried over to next Licence
Used Fuel Storage Structures	2 SB 5 (2022) SB 6 (2022)	2 SB 7 (2029) SB 8 (2029)
Storage buildings for Low & Intermediate Level Waste	Multi-Purpose Storage Building (MPSB) (2025)	10 (To be determined)
In-ground containers (IC-18s)	54 IC-18s (Batch 6, 2022)	216 (54 IC-18s in Batch 7, 2027) (Batches 8-10 to be determined)
In-ground containers for heat exchangers (IC-HX)	0	30 (To be determined)
Large Object Processing Building	0	1 (To be determined)
Waste Sorting Facility	0	1 (To be determined)



OPG routinely updates its waste forecasts and adjusts the timing of new waste storage infrastructure based on current projections of the volume and types of waste expected to be generated. As noted in Sections 1.2, 2.3 and 2.11, OPG has taken various initiatives to improve waste minimization and volume reduction. These initiatives have enabled OPG to defer construction on some Low and Intermediate Level Storage Buildings. As business assumptions are verified, initiative results are validated and forecasts are updated, OPG makes decisions on planning for and proceeding with construction only as required.

Large Object Processing

OPG is considering the construction and operation of a Large Object Processing Building to support the processing of large metallic components, such as steam generators and large heat exchangers. The proposed Large Object Processing Building would be a structure with a robust floor designed to support a rail-mounted gantry crane. Operations within the building would include segmenting activities such as cutting and grinding as well as packaging activities.

The primary function of the Large Object Processing Building would be to safely process the steam generators and other large components into appropriately sized segments in preparation for disposal. The processing of the large components would also enable OPG to remove and recycle elements of these components that are not radiologically contaminated. The remaining segments will be managed to ensure they meet the disposal facility's waste acceptance criteria. The proposed location for the new Large Object Processing Building is inside the current licensed area of the WWMF.

Waste Sorting Building

The existing WWMF licence allows for the retrieval and reprocessing of L&ILW, including sorting, processing and/or diversion to conventional disposal or free release, subject to meeting the established clearance level. OPG is considering constructing and operating a building specifically for this purpose in order to lower the volume of L&ILW stored on site. The potential location of the new Waste Sorting Building is inside of the current licensed area.

Storage of Waste Generated from Isotope Production

Isotopes are used in a wide variety of medical and industrial applications. Medical applications include life-saving diagnostics, procedures, and treatments; industrial applications include fusion technology, quantum computing, food processing, and border security. For many decades, Canada has been a key contributor to the international supply chain of several isotopes since the early establishment of the field. As a result of isotope production, radioactive waste is generated. This includes waste streams from third-party waste generators, such as those associated with the production of Lutetium 177 (Lu-177) at Bruce Power.

Waste from the production of isotopes will be stored in approved waste containers and within existing storage structures designed for LLW and ILW, as deemed appropriate and in accordance with the WWMF Waste Acceptance Criteria (WAC). Any waste not meeting the requirements of the WAC would be subject to additional licensing activities. The transport of this waste will follow OPG's existing waste management procedures, and the waste will be stored in infrastructure already authorized under the existing WWMF licence.



1.6 Indigenous Engagement

OPG respects Aboriginal and Treaty rights and is committed to developing positive relationships with Indigenous Nations and communities. OPG's Indigenous Relations Policy, OPG-POL-0027, provides a framework for engagement with Indigenous Nations and communities and provides support of community programs and initiatives. As part of its Indigenous Relations Policy, OPG maintains an Indigenous Relations program for its nuclear operations with the goals of:

- Informing Indigenous Nations and communities with established and/or asserted treaty and/or Aboriginal rights and those that have expressed interest of nuclear station and waste management facility operations, emerging projects and facility environmental performance;
- Seeking the input and worldviews of Indigenous Nations and community representatives about OPG's ongoing nuclear operations and projects, and;
- Addressing any identified concerns, as appropriate.

OPG is committed to engaging with Indigenous Nations and communities regarding nuclear operations as well as proposed future initiatives at WWMF.

As recommended in CNSC REGDOC-3.2.2, *Indigenous Engagement*, this section contains:

- An initial review to consider whether the activities described in this licence application could result in potential impacts on established and/or asserted Aboriginal and/or treaty rights;
- An overview of OPG's efforts to identify and create an initial list of Indigenous groups whose potential or established Aboriginal and/or treaty rights may be adversely affected by the proposed activities in the licence application;
- A summary of Indigenous engagement activities conducted to date;
- A description of proposed and planned Indigenous engagement activities through the licensing process; and
- A proposed schedule for interim reporting to the CNSC on Indigenous Engagement through the licensing process.

Information about Indigenous Nations and communities contained in the CMD has been drafted to summarize comments received and reflect OPG's understanding of what was communicated. OPG continues to welcome additions and clarifications from Indigenous Nations and communities to ensure OPG fully understands interests and/or concerns.

1.6.1 Commitment to Reconciliation

OPG has a long history of developing respectful and collaborative relationships and is committed to taking concrete and measurable actions to advance reconciliation with Indigenous Peoples and to report regularly on OPG's activities and progress in achieving established goals.

OPG launched its Reconciliation Action Plan (RAP) in the fall of 2021, which outlines OPG's commitment to advancing reconciliation with Indigenous Peoples under the focus areas of leadership, relationships, people, economic empowerment, and environmental stewardship. The RAP is a public document that serves as a roadmap to reconciliation, and the 2021 edition included 38 specific actions and commitments with clear deliverables and timelines spanning between 2022 and 2031. Some key highlights and achievements since the 2021 RAP was developed include:



- From 2022 through the end of 2025, OPG has contributed $793 million toward our $1-billion RAP economic commitment to Indigenous communities - $717.5 million through procurement and $75.5 million via equity partnerships.
- Programs offered to Indigenous employees to promote their career path development.
- Developing and initiating an Indigenous Relations training program to build Indigenous relations awareness and cultural competence across the organization.
- Overall, in 2024, OPG invested a total of over $700,000 in Indigenous initiatives including a sponsorship of the Little Native Hockey League's 51st Annual Tournament, and two bursaries for youth pursuing energy related education.
- In September 2024, OPG was recertified with the Gold Designation from the Canadian Council for Indigenous Business through its Partnership Accreditation in Indigenous Relations Program.
- The Indigenous Opportunities Network program began in 2018 with the goal of placing Indigenous candidates into trades and non-trades roles within OPG and vendors and unions in the energy sector. ION has placed 257 Indigenous candidates between 2018 and 2025.

OPG has come far as a company, while also recognizing that there is still more to do to advance reconciliation. In the spirit of driving change across the industry and holding firm on our commitment to advancing reconciliation, OPG refreshed the RAP in July 2024. The refreshed RAP includes a recap of OPG's progress on its goals from 2021 through to 2023 and the addition of 20 new commitments that were developed through internal discussions and input from Indigenous Nations, communities and businesses.

1.6.2 Preliminary Assessment of Impacts

OPG has undertaken an initial assessment to determine whether the continued operations for which OPG is seeking authorization in this licence application may give rise to new or adverse novel impacts on established and/or asserted Aboriginal and/or treaty rights. In undertaking this initial assessment, OPG considered potential impacts on Aboriginal and/or treaty rights that may result from:

- Contaminants (radiological and conventional) and physical stressors from ongoing operations (continued operations of the WWMF, which includes approved structures under the current licence not yet constructed, and Bruce Power operations).
- Dust, noise and particulate emissions from site preparation and construction activities (continued operations).

With respect to continued operations included in the application, OPG's assessment that these activities do not give rise to any new or novel adverse impacts on established and/or asserted Aboriginal and/or treaty rights is based on:

- Results from environmental protection programs in place at the WWMF that assess potential human health and ecological risks from radiological contaminants, conventional contaminants, and physical stressors confirm that the WWMF operates in a manner that is protective of the health of the public and the environment.
    - These environmental protection programs include Environmental Risk Assessment (every five years), Environmental Monitoring Program (annual), and Groundwater Protection and Monitoring Program (annual).
- The locations of continued operations are within a previously developed area of the WWMF site, a site that is already heavily disturbed and inaccessible to Indigenous Peoples since 1974 and for the foreseeable future.



- Potential impacts to the environment from site preparation and construction activities will be mitigated through implementation of an environmental management plan, outlining procedures related to air (dust) and water management, noise control, and contaminated and excess soil management.
- Potential impacts to surface water quality from construction activities will be mitigated through stormwater management plans and spill management protocols for site preparation, construction and post development.

OPG also considered potential impacts on Aboriginal and/or treaty rights that may result from:

- Interim storage for waste streams generated from isotope production, such as isotopes produced by third-party waste generators, including those associated with the production of Lu-177.

With respect to interim storage of waste from isotope production, OPG's assessment that this activity does not give rise to new or novel adverse impacts on established and/or asserted Aboriginal and/or treaty rights is based on:

- This waste would be accepted in accordance with the WWMF Waste Acceptance Criteria, stored in currently approved waste containers within existing storage structures, and managed in accordance with the existing procedures.

OPG emphasizes that this assessment is preliminary in nature and may evolve as OPG's site planning efforts advance, the engagement process unfolds, and/or based on the Crown's assessment of consultation obligations. OPG is committed to proactively engaging with Indigenous Nations and communities to inform OPG's understanding of how the activities in this application may potentially impact established and/or asserted Aboriginal and/or treaty rights, and address those potential impacts through avoidance, mitigation, and accommodation measures, as appropriate.

1.6.3 Identified Nations and Communities

Engagement on the WWMF WFOL renewal is focused on the Saugeen Ojibway Nation (SON), comprised of Saugeen First Nation and Chippewas of Nawash Unceded First Nation, who are Rightsholders in the treaty and traditional territory where the WWMF is located. In consideration of CNSC REGDOC-3.2.2, *Indigenous Engagement*, OPG also engages with Indigenous Nations and communities that assert treaty and/or Aboriginal rights, as well as other Indigenous Nations and communities who do not assert Aboriginal or treaty rights, but who have expressed an interest in our operations at WWMF.

In the tables below, OPG has identified the Indigenous Nations and communities that have established Aboriginal and/or treaty rights, have asserted Aboriginal and/or treaty rights, or have expressed an interest in the WWMF. The tables were developed based on consulting the Government of Canada's Aboriginal and Treaty Rights Information System, previous engagement and relationship building efforts with Indigenous Nations and communities, information shared by the CNSC on previous licence and renewal applications, and engagement lists previously provided by provincial and/or federal agencies.

Aboriginal and treaty rights refer to those rights that are recognized and affirmed in section 35 of the *Constitution Act, 1982.* For the purposes of the Duty to Consult, both established and asserted/potential rights are considered. Indigenous Nations and communities identified in Table 4 have established treaty rights in the WWMF area that have been acknowledged by the Crown.



Table 4: Identified Indigenous Nations and Communities with Established Aboriginal and/or Treaty Rights

Nation/Community	Reason for Engagement
Saugeen Ojibway Nation, comprised of Saugeen First Nation and Chippewas of Nawash Unceded First Nation	Rightsholders, and the WWMF is within their traditional and treaty territory.

Indigenous Nations and communities identified in Table 5 have claimed Aboriginal and/or treaty rights in the WWMF area but have not had these potential rights established in court or acknowledged by the Crown.

Table 5: Identified Indigenous Nations and Communities with Asserted Aboriginal and/or Treaty Rights

Nation/Community	Reason for Engagement
Métis Nation of Ontario Region 7 - Georgian Bay Traditional Territory Consultation Committee	Asserted Aboriginal and/or treaty rights where the WWMF is located.
Historic Saugeen Métis	Asserted Aboriginal and/or treaty rights where the WWMF is located.

Indigenous Communities identified in Table 6 do not claim Aboriginal or treaty rights, but have expressed an interest in WWMF operations, and will be provided with information as the renewal process progresses.

Table 6: Identified Indigenous Nations and Communities Expressing an Interest

Nation/Community	Reason for Engagement
Chippewas of Kettle and Stony Point First Nation	Has expressed interest in the WWMF operations.

1.6.4 Engagement Framework and Approach

OPG has established Relationship Agreements with Métis Nation of Ontario Region 7 Georgian Bay Traditional Territory Consultation Committee (MNO GBTTCC) and Historic Saugeen Métis (HSM). These agreements allow for dedicated time and capacity funding to support ongoing engagement on OPG's WWMF operations and activities. OPG is sharing regular WWMF operations updates to SON through written communications. OPG continues to progress conversations with SON to establish an agreement and associated capacity funding to support ongoing engagement on OPG's WWMF operations and activities, including the WWMF licence renewal application process.

OPG recognizes that meaningful engagement begins with relationship-building and the establishment of trust, and is committed to respect, openness and transparency in building these relationships. In the



context of this specific application, OPG built an engagement plan to increase collaboration and deepen engagement with Indigenous Nations and communities, with respect to the WWMF.

In early 2025, OPG developed a draft WWMF Indigenous Engagement Plan (IEP) to guide engagement activities on ongoing and proposed programs and initiatives at the WWMF, including engagement on OPG's WFOL renewal application. This comprehensive IEP was informed by CNSC REGDOC-3.2.2, *Indigenous Engagement*, and was developed to facilitate holistic and comprehensive discussions and deepen the knowledge and understanding of WWMF operations and activities. The draft WWMF IEP has been shared with the Indigenous Nations and communities identified in section 1.6.3 Table 4 and Table 5 for review and input. The IEP is intended to be a dynamic document and, as such, will continue to be updated, as appropriate, to respond to new information which comes forward and/or any shifts in engagement priorities and needs.

To date, OPG has provided WFOL information and invited the Indigenous Nations and communities identified in section 1.6.3 to engage on OPG's licence renewal application and any other engagement opportunities of interest.

1.6.5 Summary of Engagement Efforts and Activities to Date

A high-level overview of OPG's recent engagement efforts and activities on the renewal application up to October 2026, are detailed below. For thoroughness, some engagement details on WWMF licensed operations and activities are also included, as that information sharing provides a background and context for the Nations and communities when engaging in the licence renewal application.

Table 7: Saugeen Ojibway Nation – Rightsholders – Summary of Engagement

Date/ Timeline	Engagement Activity	Summary
October 2026	Email and Document Review	SON shared a marked-up version of the draft agreement and associated capacity to support engagement on WWMF operations and activities, including licence renewal. OPG initially shared the draft agreement with SON in December 2024. OPG is reviewing and will share comments/feedback and will continue to prioritize finalizing this agreement.
October 2026	Email and Document Review	OPG follow up email to SON on finalizing the draft agreement and associated capacity to support engagement on WWMF operations and activities, including licence renewal.
September 2026	Briefing Note	OPG shared written updates with SON Environment Office (EO) WWMF licence renewal: - Updated plans for November public open houses – to host one in-person and one online session for greater accessibility, and OPG will share additional details, including materials, when available. WWMF licensed activities:



Date/ Timeline	Engagement Activity	Summary
		- detailed an Environmental Compliance Approval (ECA) carbon monoxide exceedance associated with incinerator operations that occurred on September 17. Included immediate actions taken and steps to prevent reoccurrence. OPG offered to provide capacity to support engagement on WWMF operations and will continue progressing discussions with SON EO on providing capacity budgets.
September 2026	Email	SON email to OPG requesting details of OPG's planned November public information sessions and to receive the materials that will be shared at the sessions (OPG shared initial plans for public open houses in the August 2026 Briefing Note for SON). OPG responded by sharing that as soon as the session details are known, they will be shared with SON, including the materials OPG plans to use. OPG also shared that plans for the public open houses have evolved to OPG hosting one in-person and one virtual for greater accessibility.
September 2026	Email and Document Review	OPG follow up emails (multiple emails) to SON on finalizing the draft agreement and associated capacity to support engagement on WWMF operations and activities, including licence renewal.
September 2026	Email	SON email to OPG sharing update on draft agreements, SON counsel noted changes that SON Nuclear Advisory Committee (NAC) should be aware of and will be discussing them at a future NAC meeting.

August 2026	Briefing Note	OPG shared written updates with SON EO
		
		WWMF licence renewal:
		
		- OPG shared plans to host public open houses for WWMF licence renewal in November
		  ○ Offer to provide an SON in-community information session
		
		WWMF licensed activities:
		
		- Overview of Used Fuel Dry Storage Buildings (UFDSBs) at WWMF and need for additional storage space to store Bruce Power used fuel
		- OPG shared project plans to construct UFDSB 7&8 to be available for service by December 2029
		  ○ UFDSB 7&8 are authorized in current licence, to be carried into next licence period
		
		OPG offered to provide capacity to support engagement on WWMF operations and will continue progressing discussions with SON EO on providing capacity budgets.



Date/ Timeline	Engagement Activity	Summary
		SON EO responded acknowledging the briefing note, noting OPG's offer of a SON-specific, in-community information session and requested OPG share future details of the November public information sessions. SON EO noted appreciation for OPG's continue commitment to advancing the capacity budget discussions needed to support SON's review of the WWMF licence renewal application materials.
August 2026	Written Report	OPG shared "OPG NSS WWMF 2025 Annual Report for SON" with SON, providing details and summaries of the following topics: NSS-WWMF Operations and Activities - Low and Intermediate Level Waste Activities - Used Fuel Dry Storage Container Activities (from Bruce Power) - WCSR and CMSR, LLW Sorting - CNSC Licenses, WWMF Licence Renewal - Transportation - Decommissioning Planning at WWMF Environmental Management - Biodiversity Initiatives - Environmental Protection Monitoring - Effluent and Groundwater Monitoring - Non-Radiological Emissions Monitoring - Reportable Spills Future Plans - OPG's Support for Ontario's Energy Transition to Meet Climate Change Goals - Darlington NGS Refurbishment and 30-Year Licence Application - Small Modular Reactors, Darlington New Nuclear Project - Pickering NGS U5-8 Extended Operations and Refurbishment - Pickering NGS Decommissioning Activities - New Nuclear Development - Nuclear Medicine and Radioisotopes - Long-Term Nuclear Waste Disposal Strategy - Generation for Generations - Innovation and Technology to Minimize Waste Volumes - Future Plans, Storage, and New Facilities - OPG's Reconciliation Action Plan Relations Between OPG and SON - Engagement and Legacy Issues, including OPG's offer to provide capacity to support engagement on the WWMF - Events, Sponsorships, and Support



Date/ Timeline	Engagement Activity	Summary
		- Tours and Site Visits OPG extended an offer to meet to answer any questions or discuss any aspect of the report. OPG also extended an open invitation for tours of WWMF facilities and/or for OPG staff to provide information sessions. SON EO response acknowledged receipt of OPG's 2025 Annual Report for SON, would follow up with any questions and extended appreciation for the offer to arrange facility tours or information sessions.
August 2026	Email and Document Review	OPG follow up email to SON on finalizing the draft agreement and associated capacity to support engagement on WWMF operations and activities, including licence renewal.
August 2026	Tours	SON tour of the WCSR, licensed separately from WWMF. The tour included an overview of the facility and how legacy and some operational waste is sorted and segregated to maximize volume reduction of Low-Level Waste. OPG extended an open invitation to SON for future tour opportunities. SON tour of WWMF, with a focus on waste processing - incineration and compaction, and interim storage of Low and Intermediate Level Waste. A detailed overview of incinerator operations was provided from the control room. The WWMF tour also included overview of used fuel dry storage processing and interim storage. OPG extended an open invitation to SON for future tour opportunities.
July 2026	Email and Document Review	OPG shared revised annual budgets for the draft agreement and associated capacity to support engagement on WWMF operations, including licence renewal, with the SON EO, based on previous meetings and discussions between OPG and SON EO staff. SON also requested copies of the draft agreements. OPG provided copies of the draft agreements initially shared in 2024.
July 2026	Briefing Note	OPG shared written updates with SON EO. WWMF licence renewal: - OPG offered to provide capacity to support engagement on WWMF operations and will continue to progress discussions with SON EO on providing capacity budgets. - OPG will begin preparing the OPG Commission Member Document (CMD) in the coming months, which will include



Date/ Timeline	Engagement Activity	Summary
		updates to various sections of the application since May 2026 submission – such as the Indigenous Engagement Section. WWMF licensed activities and site initiatives: - WWMF site improvement initiative, WVRB control room upgrades to modernize the workplace. - LLW is received at the WVRB at the WWMF where it is either processed through incineration or compaction to reduce volume prior to interim storage or stored (if non-processible). OPG offered to provide capacity to support engagement on WWMF operations and will continue progressing discussions with SON EO on providing capacity budgets. SON EO responded acknowledging the briefing note and appreciation for the continued updates.
July 2026	Email and Request for Documents	SON EO requested copies of environmental reports to support ongoing review of the WWMF environmental documentation, including 2021 WWMF Environmental Risk Assessment, 2024 Results WWMF Environmental Monitoring Program, and recent groundwater program results and implementation plans. In August 2026, OPG provided copies of the requested reports and shared details of where some of the reports were posted on opg.com.
July 2026	Meeting (virtual)	OPG and SON EO staff met virtually to continue discussions on SON x OPG draft agreement and associated capacity to support engagement on WWMF operations, including licence renewal - specifically annual capacity budget amounts.
July 2026	Email and Request for Documents	SON EO requested any archaeological assessments, reports, etc. that have been completed for the WWMF project area, as SON begins preparing for the upcoming WWMF relicensing review. In September, OPG shared copies of the most recent known archaeology assessments.
July 2026	Email and Document Review	OPG follow up emails (multiple emails) to SON on finalizing the draft agreement and associated capacity to support engagement on WWMF operations, including licence renewal.
July 2026	Email	SON followed up on June 2026 OPG Briefing Note shared with SON, where OPG requested comments from SON on the WWMF licence renewal application by July 3, to have feedback, input, and/or concerns reflected in OPG's CMD, as appropriate.



Date/ Timeline	Engagement Activity	Summary
		Further details are in Section 1.6.6.
July 2026	Letter	OPG shared response to SON regarding the SON March 6 letter correspondence chain. OPG remains committed to maintaining a constructive working relationship with SON and to continue engaging on matters related to the WWMF. OPG has clear and ongoing responsibilities to ensure safe and secure management of nuclear waste currently stored at WWMF. The licence renewal application is required to maintain the regulatory authority necessary for WWMF operations and support continued safe and reliable management. Proposed that OPG and SON meet to discuss the capacity funding concerns raised and align on further agreements to ensure SON's capacity to engage in such discussions.
July 2026	Meeting (virtual)	Cancelled meeting, SON EO staff did not join (did previously accept). OPG scheduled a meeting to discuss annual capacity budgets associated with the draft agreement to support engagement on WWMF operations, including licence renewal OPG followed up with an email and proposed new meeting time.
July 2026	Meeting (virtual)	OPG and SON EO staff met virtually to continue discussions on SON x OPG draft agreement and associated capacity to support engagement on WWMF operations, including licence renewal - specifically annual capacity budget amounts. OPG followed up after meeting with proposed next meeting time.
June 2026	Briefing Note	OPG shared written updates with SON EO. WWMF licence renewal: - OPG requested SON feedback, input, and/or concerns on May 2026 WWMF licence renewal submission by July 3, to have them reflected in OPG's CMD WWMF licensed activities and site initiatives: - Climate Change Resilience Assessment for the WWMF is underway, shared scope of work for the assessment OPG offered to provide capacity to support engagement on WWMF operations and will continue progressing discussions with SON EO on providing capacity budgets. SON EO responded acknowledging the briefing note and that they would follow up if there were any questions.



Date/ Timeline	Engagement Activity	Summary
June 2026	Email and Document Review	OPG followed up by email and meeting (May in-person) looking to progress SON x OPG draft agreement and associated capacity to support engagement on WWMF operations, including licence renewal. OPG expressed wanting to ensure continued efforts and responsiveness to SON's capacity requests related to WWMF operations and activities, including licence renewal. OPG inquired if the draft agreements previously shared (in December 2024) have been reviewed and if a meeting could be scheduled to discuss next steps. SON shared a revised capacity budget and a meeting time was scheduled to discuss further.
May 2026	Briefing Note	OPG shared written updates with SON EO. WWMF licence renewal: - Shared summary of upcoming key dates and timelines WWMF licensed activities and site initiatives: - 2026 Environmental Risk Assessment (ERA) for WWMF, background and scope of the ERA - A copy of the 2026 WWMF ERA was shared OPG offered to provide capacity to support engagement on WWMF operations. SON EO responded acknowledging the briefing note and ERA and would go over it with their team.
May 2026	Meeting (In-person)	OPG and SON EO staff met in-person on progressing the draft agreement and associated capacity to support engagement on WWMF operations, including licence renewal. OPG initially shared these draft agreements in December 2024.
May 2026	Email and Document Review	OPG followed up with SON EO staff to set up a meeting to progress conversations on the draft agreement and associated capacity to support engagement on WWMF operations, including licence renewal, previously shared with SON. A copy of the draft agreement was shared again for easy reference.
May 2026	Email	OPG shared update on CNSC deadline for participant funding applications, initial date was May 19, 2026, extended to June 16, 2026. OPG also shared a summary of key dates/milestones for WWMF licence renewal, including request for comments on WWMF renewal application by July 3, 2026, to have input and/or concerns reflected in OPG's CMD, as appropriate.



Date/ Timeline	Engagement Activity	Summary
		SON EO responded acknowledging receipt, appreciation for the update, and would follow up if there were any questions regarding the application, timelines, or capacity funding discussions.
May 2026	Letters	SON and OPG shared responses related to the SON March 6 letter correspondence chain. Further details are in Section 1.6.6.
May 2026	Email and Document Review	OPG shared a copy of the WWMF licence renewal application submitted to the CNSC May 1, 2026, replacing the previously submitted application (December 2025). - To allow for additional time for engagement on the proposed new buildings at the WWMF, OPG removed the request for authorization of UFDSBs 9 and 10. A summary of changes was also shared, highlighting various sections and the respective updates OPG requested comments by July 3, 2026, to have feedback input, and/or concerns reflected in OPG's CMD, to be submitted in November 2026, as appropriate. OPG offered to provide capacity to support SON's review of WWMF licence renewal application.
May/April 2026	Meeting (In-person) and Emails	OPG and SON EO staff met in-person to discuss the SON EO staff proposed work plan. Next steps were to progress framework agreement and associated capacity to support the SON x OPG work plan for 2026. OPG received follow up that progressing the agreement was delayed, at the direction of SON Nuclear Advisory Council. OPG shared a summary email from May in-person meeting recapping some common interests and ideas shared and discussed. OPG included a copy of the previously shared draft agreement and associated capacity to support engagement on WWMF operations and activities, including licence renewal SON EO staff requested meeting with OPG to discuss the SON x OPG work plan for 2026 that is being drafted by the SON EO. This included tours of WWMF and WCSR, reviews of the NSS WWMF Annual Report for SON, and reviews of WWMF environmental monitoring program documents. OPG staff responded, sharing availability to meet in early May (detailed above).
April 2026	Briefing Note	OPG shared written updates with SON EO.



Date/ Timeline	Engagement Activity	Summary
		WWMF licensed activities and site initiatives: - detailed an ECA temperature and carbon monoxide exceedance associated with incinerator operations that occurred on April 5. Included immediate actions taken and steps to prevent reoccurrence. OPG offered to provide capacity to support engagement on WWMF operations. SON EO responded acknowledging the briefing note and that they appreciate the proactive notification regarding the reported incinerator exceedance, associated corrective actions, and the continued commitment to information sharing with SON.
March 2026	Briefing Note	OPG shared written updates with SON EO. WWMF licence renewal: - renewal application upcoming dates and milestones. WWMF licensed activities: - detailed an ECA temperature exceedance associated with WWMF incinerator operations that occurred February 21. Included immediate actions taken. OPG offered to provide capacity to support engagement on WWMF operations.
March 2026	Email	OPG follow up to previous response and support for SON's March request for a May 2026 site visit. OPG offered to provide capacity to support engagement on WWMF operations.
March 2026	Email/Letter	SON Chiefs shared a letter with OPG regarding the licence renewal application OPG shared in December 2025, details in Section 1.6.6
March 2026	Emails	SON Environment Office staff reached out to OPG requesting a site visit for SON participants in May 2026. OPG responded indicating OPG would be happy to arrange a site visit and inquired what this would look like: i.e. a tour, focus on areas of interest, inclusion of presentations or an information session.
February 2026	Briefing Note	OPG shared written updates with SON EO. WWMF licence renewal: - highlighting the progression of a Predictive Environmental Risk Assessment (PERA) Addendum to evaluate activities



Date/ Timeline	Engagement Activity	Summary
		associated with two used fuel storage structures and OPG's continued interest in seeking and understanding how best to scope and support SON's review to inform OPG's understanding of how the activities may potentially impact SON's established and/or asserted Aboriginal and/or treaty rights. WWMF licensed activities and initiatives: - plans to revise the WWMF IEP shared with SON in July 2025 for review and input. OPG remains open to receiving feedback on the initial draft WWMF IEP to incorporate into the 2026 revision. OPG offered to provide capacity to support engagement on WWMF operations.
February 2026	Email	OPG follow up on December and January emails sharing the WWMF WFOL application requesting SON's review of the WWMF renewal application and help inform OPG's understanding of how the activities may potentially impact SON's established and/or asserted Aboriginal and/or treaty rights, by February 13, 2026. OPG offered to provide capacity to support engagement on WWMF operations.
January 2026	Briefing Note	OPG shared written updates with SON EO. WWMF licence renewal: - renewal application submission and highlighting OPG's request to receive SON's comments, input and/or concerns by February 13, 2026. WWMF licensed activities and initiatives: - In-ground containers (IC) at the WWMF and a project in the Initiation and Development Phase to construct 54 new IC-18s, expected to be in-service in December 2027. OPG offered to provide capacity to support engagement on WWMF operations.
January 2026	Email and Document Review	OPG Follow up to sharing the WWMF WFOL application in December 2025 and reaching out to see if there is anything OPG can do to further support SON's review of the renewal application to help inform OPG's understanding of how the activities may potentially impact SON's established and/or asserted Aboriginal and/or treaty rights.



Date/ Timeline	Engagement Activity	Summary
		OPG offered to provide capacity to support engagement on WWMF operations.
January 2026	Email	OPG shared the OPG WWMF Land Acknowledgement language used in various WWMF documents, including the WWMF WFOL application, requesting SON review and any input SON wishes to share. This language was initially shared in November 2023.
December 2025	Briefing Note and Document Review	OPG shared written updates with SON EO OPG shared the WWFM WFOL application and briefing note summarizing all changes made to the draft WWMF WFOL application previously shared. OPG requested comments, input and/or concerns by February 13, 2026, to incorporate into a future supplemental submission. OPG offered to provide capacity to support engagement on WWMF operations.
November 2025	Briefing Note and Document Review	OPG shared written updates with SON EO Briefing note on draft WWMF WFOL application, including key timelines and milestones for the licensing process, summary of the draft application, and reports supporting the renewal application. Draft copy of WFOL renewal application shared for early review. OPG offered to provide capacity to support engagement on WWMF operations.
October 2025	Site Visit	SON EO staff member participated in WWMF biodiversity monitoring activities – birdbox inspections and cleanouts.
October 2025	Briefing Note	OPG shared written updates with SON EO WFOL renewal application update on progress. Licensed activity updates including a modification to repurpose a storage building and operation of the MPSB beginning. OPG offered to provide capacity to support engagement on WWMF operations.
October 2025	Email	OPG shared information on the WWMF groundwater monitoring program, in response to a voicemail request.
September 2025	Briefing Note	OPG shared written updates with SON EO WFOL renewal application update on progress. Licensed activity updates including commission acceptance of OPG's Commissioning



Date/ Timeline	Engagement Activity	Summary
		Report for MPSB and authorized OPG to begin operation, Preliminary Decommissioning Plans (PDPs) for Bruce Nuclear Site and upcoming reviews. OPG offered to provide capacity to support engagement on WWMF operations.
September 2025	Tour	SON EO staff requested a tour of WWMF and the WCSR Facility for 10 participants. Tour took place on September 23 involving 4 participants from SON leadership and SON EO staff.
September 2025	Email – Document Review	Follow up on OPG sharing the draft WWMF IEP in July 2025, requesting review and input.
September 2025	Written Report	OPG shared "OPG NSS WWMF 2024 Annual Report for SON" with SON, providing details and summaries of the following topics: NSS-WWMF Operations and Activities - Low and Intermediate Level Waste Activities - Used Fuel Dry Storage Container Activities (from Bruce Power) - WCSR and CMSR, LLW Sorting - CNSC Licenses, WWMF Licence Renewal - Transportation - Decommissioning Planning at WWMF Environmental Management - Biodiversity Initiatives - Environmental Protection Monitoring - Effluent and Groundwater Monitoring - Non-Radiological Emissions Monitoring - Reportable Spills Future Plans - OPG's Support for Ontario's Energy Transition to Meet Climate Change Goals - Darlington NGS Refurbishment and 30-Year Licence Application - Small Modular Reactors, Darlington New Nuclear Project - Pickering NGS U5-8 Extended Operations and Refurbishment - Pickering NGS Decommissioning Activities - New Nuclear Development - Nuclear Medicine and Radioisotopes - Long-Term Nuclear Waste Disposal Strategy - Generation for Generations



Date/ Timeline	Engagement Activity	Summary
		- Innovation and Technology to Minimize Waste Volumes - Future Plans, Storage, and New Facilities - OPG's Reconciliation Action Plan Relations Between OPG and SON - Engagement and Legacy Issues, including OPG's offer to provide capacity to support engagement on the WWMF - Events, Sponsorships, and Support - Tours and Site Visits OPG extended an offer to meet to answer any questions or discuss any aspect of the report. OPG also extended an open invitation for tours of WWMF facilities and/or for OPG staff to provide information sessions. SON EO response acknowledged receipt of OPG's 2025 Annual Report for SON and would follow up with any comments.
August 2025	Briefing Note	OPG shared written updates with SON EO WFOL renewal application updates, including sharing a draft application with SON in Q4 2025. Also shared licensed activity updates with details of MPSB commissioning and CNSC compliance inspection. OPG offered to provide capacity to support engagement on WWMF operations.
July 2025	Email – Document Review	OPG shared draft WWMF IEP, requesting review and input by end of August. OPG offered to provide capacity to support engagement on WWMF operations.
July 2025	Briefing Note	OPG shared written updates with SON EO Licensed activity updates, including with respect to construction completion of a MPSB and commissioning report submission. OPG offered to provide capacity to support engagement on WWMF operations.
June 2025	Site Visit	SON EO staff member participated in WWMF biodiversity monitoring activities including site breeding bird point count across the site.
June 2025	Briefing Note	OPG shared written updates with SON EO



Date/ Timeline	Engagement Activity	Summary
		Licensed activity updates regarding the summary of Environmental Risk Assessments and planning (i.e. field sampling) for 2026 ERA, seeking participation and perspective. OPG offered to provide capacity to support engagement on WWMF operations.
May 2025	Email and Document Review	Offer to discuss capacity for engaging with SON on WWMF operations, including licence renewal. Shared copy of draft agreement and associated capacity initially shared in December 2024.
May 2025	Briefing Note	OPG shared written updates with SON EO WFOL renewal application updates, Environmental Protection Safety and Control Area overview, PERA overview and timeline. OPG offered to provide capacity to support engagement on WWMF operations.
April 2025	Briefing Note	OPG shared written updates with SON EO WFOL renewal application updates, including summarizing the Safety and Control Areas. Licensed activity updates on MPSB construction progress. OPG offered to provide capacity to support engagement on WWMF operations.
March 2025	Briefing Note	OPG shared written updates with SON EO. WFOL renewal application updates including plans to submit application. Licensed activity updates on MPSB construction progress. OPG offered to provide capacity to support engagement on WWMF operations.
December 2024	Email / letter	Shared OPG's Notice of Intent letter sent to CNSC on December 20, 2024, indicating OPG plans to submit a licence renewal application for a 10-year licence term in Q4 2025.
December 2024	Email and Document Review	OPG shared a copy of the draft agreement and associated capacity to support engagement on WWMF operations and activities, including licence renewal.



Date/ Timeline	Engagement Activity	Summary
November /December 2024	Emails	OPG communicated plans to draft agreements and capacities to support bifurcated streams of communications: legacy issues and WWMF operations and activities.
August 2024	Written Report	Annual summary for 2023 of: - WWMF operations, waste volumes received and processed, WFOL and WFOL renewal, Radioactive Material Transportation - Environmental Management including environmental protection monitoring, effluent and groundwater monitoring, non-radiological monitoring, and biodiversity initiatives - Future plans (including resin and metal processing initiatives), overviews of Darlington and Pickering licence renewals and projects, nuclear medicine and radioisotopes - SON-OPG relationship – including OPG's offer to provide capacity to support conversations about the WWMF
January 2023 – April 2024	Meetings (virtual)	Bi-weekly/weekly meetings with SON Environment Office staff. Topics discussed included: - WWMF operations, projects, and initiatives - Environmental monitoring and site initiatives - including the biodiversity programs - Seeking SON input on various WWMF environmental initiatives and environmental reports like the ERA and EMP - Planning for tours and coordinating site visits - Planning for OPG to attend and share information at NAC and/or Joint Council (JC) meetings - Capacity funding, including development of a new relationship agreement and associated funding, to support information sharing outside of legacy issues - Participating and supporting SON EO events and SON community events *Meetings were paused, at the request of the SON Nuclear Advisory Committee.

Table 8: Identified Indigenous Communities with Asserted Aboriginal and/or Treaty Rights – Summary of Engagement

Nation/ Community	Date/ Timeline	Engagement Activity	Summary
MNO	October 2026	Email and document review	OPG shared a copy of the 2026 WWMF Environmental Risk Assessment (ERA) and looking



Nation/ Community	Date/ Timeline	Engagement Activity	Summary
			forward to schedule Q3/4 2026 engagement meeting.
HSM	September	Meeting (in-person)	Q2 Engagement Meeting. Agenda items included: - Licence renewal updates, including key dates and milestones – upcoming OPG public open houses - HSM x OPG annual work planning, collaborative discussion - Environment program updates; phragmites management work overview for WWMF, WWMF incinerator Environmental Compliance Approval (ECA) exceedances to dates
HSM	September 2026	Site Visit	HSM staff participated in biodiversity monitoring at WWMF – butternut tree seed collection and observing invasive phragmites management work.
HSM	August 2026	Site Visit	HSM staff participated in biodiversity monitoring at WWMF including butternut tree observations and seed formation.
HSM	July 2026	Letter	HSM shared a Letter of Intent on the WWMF licence renewal informing OPG that it will undertake community engagement, gather community perspectives, and provide further input through the intervention process and hearing participation. Further details are in Section 1.6.6.
HSM	July 2026	Site Visit	HSM staff participated in biodiversity monitoring at WWMF including snake coverboard monitoring and butternut tree observations.
MNO GBTTCC	July 2026	Email	OPG followed up with MNO GBTTCC for any feedback, input, and/or concerns regarding the May 2026 renewal application submission, which removed Used Fuel Dry Storage Buildings 9&10.
HSM	July 2026	Email	HSM reached out inquiring if additional details were required from what was provided in their initial review of the December application. OPG replied restating HSM's previous comments that HSM does not anticipate that the proposed activities will introduce any new concerns or impacts to the



Nation/ Community	Date/ Timeline	Engagement Activity	Summary
			HSM community and that additional comments would be welcome to be included in OPG's CMD submission.
HSM	June 2026	Meeting (in-person)	Q2 Engagement Meeting. Agenda items included: - Licence renewal updates, including details and dates for participant funding and interventions, removal of Used Fuel Dry Storage Buildings 9&10 from the application, and recap of current WFOL and WWMF structures approved under existing WFOL - Requested feedback on the renewal application by July 3, 2026 - Environment program updates; 2024 WWMF EMP overview and results, 2026 WWMF ERA overview and results
HSM	June 2026	Tour	HSM tour of Western Clean-Energy Sorting and Recycling (WCSR) facility, licensed separately from WWMF. The tour included an overview of the facility and how legacy and some operational waste is sorted and segregated to maximize volume reduction of Low-Level Waste stored at the WWMF.
MNO GBTTCC	June 2026	Meeting (in-person)	2026 GBTTCC All Councils Meeting. Agenda items included: - Overview of OPG and Nuclear Sustainability Services - OPG Electrifying Life in One Generation - NSS overview, including Radioactive Materials Transportation, Decommissioning and LLW Long-Term Waste Management, Isotopes - WWMF: Waste Minimization, Environmental Protection and Biodiversity Initiatives, WWME licence renewal OPG's Reconciliation Action Plan, Generation for Generations, Watt Next - Resources and Career Pathways.
MNO GBTTCC	June 2026	Meeting (in-person)	Q1/2 Engagement Meeting. Agenda items included:



Nation/ Community	Date/ Timeline	Engagement Activity	Summary
			- WWMF 2025 operations and activity summary, waste volumes received DSCs received - Licence renewal updates, including details and dates for participant funding and interventions, removal of Used Fuel Dry Storage Buildings 9&10 from the application, and recap of current WFOL and WWMF structures approved under existing WFOL - Requested feedback on the renewal application by July 3, 2026 - Environment program updates; 2024 WWMF EMP overview and results, 2026 WWMF ERA overview and results – including incorporating MNO feedback to expand on ecological receptor selection and characterization to include species likely present on site and species of interest
HSM	June 2026	Site Visit	HSM participated in biodiversity monitoring program at WWMF including snake coverboard monitoring
HSM and MNO GBTTCC	May 2026	Email	OPG shared update on CNSC deadline for participant funding applications, initial date was May 19, 2026, extended to June 16, 2026. OPG also shared a summary of key dates/milestones for WWMF licence renewal, including request for comments on WWMF renewal application by July 3, 2026, to have input and/or concerns reflected in OPG's CMD, as appropriate.
HSM	May 2026	Meeting (In-person)	OPG provided a one-on-one overview session for new HSM staff member, providing an overview of OPG, NSS, WWMF licence and operations, WWMF licence renewal, and environmental monitoring.
HSM and MNO GBTTCC	May 2026	Email and Document Review	OPG shared a copy of the WWMF licence renewal application submitted to the CNSC May 1, 2026, replacing the previously submitted application (December 2025). - To allow for additional time for engagement on the proposed new buildings at the WWMF, OPG removed the request for authorization of UFDSBs 9 and 10. A summary of changes was also shared, highlighting various sections and the respective updates



Nation/ Community	Date/ Timeline	Engagement Activity	Summary
			OPG requested comments by July 3, 2026, to have feedback input, and/or concerns reflected in OPG's CMD, to be submitted in November 2026, as appropriate.
HSM	March 2026	Meeting (in-person)	Q1 Engagement Meeting. Agenda items included: licence renewal updates highlighting details and dates for participant funding and licensing process milestones and dates, WWMF 2025 summary of operations and activities, 2026 biodiversity field work schedule and 2026 WWMF ERA – incorporating HSM feedback to include mushrooms as an ecological receptor.
MNO GBTTCC	February 2026	Email/Letter	MNO GBTTCC shared a letter with OPG regarding their review of the licence renewal application details in Section 1.6.6.
HSM	February 2026	Email/Letter	HSM shared a letter with OPG regarding their review of the licence renewal application. HSM does not anticipate that the proposed activities will introduce new concerns or impacts to the HSM community.
HSM and MNO GBTTCC	January 2026	Email – document review	OPG shared a copy of the WWFM WFOL application. OPG requested comments, input and/or concerns by February 13, 2026, to incorporate into a future supplemental submission.
MNO GBTTCC	December 2025	Email – Document Review	OPG shared a General Relationship Agreement extension letter, ensuring capacity until December 2026 (MNO GBTTCC signed and returned the extension letter in January 2026).
HSM	December 2025	Meeting (in-person)	Q4 Engagement Meeting. Agenda items included: WWMF licensed operations updates, MPSB operation, resin processing initiative updates, repurposing existing storage buildings, WFOL renewal application update (major milestones), 2026 WWMF ERA change updates, based on HSM input on incorporating mushrooms as an ecological receptor, WWMF 5-year project outlook.
MNO GBTTCC	November 2025	Meeting (in-person)	Q3/4 Engagement Meeting. Agenda items included: WWMF licensed operations, WFOL overview, Safety and Control Areas, MPSB construction completion and operation, repurposing existing storage buildings, WFOL renewal application update (major milestones),



Nation/ Community	Date/ Timeline	Engagement Activity	Summary
			WWMF IEP and request for MNO review and input, 2026 WWMF ERA, Valued Ecosystem Components for the ERA, 2025 biodiversity program highlights, and OPG's Generation for Generations energy education program.
MNO GBTTCC	October 2025	Tour	Tour of the WWMF and overview of licensed activities.
MNO GBTTCC	September 2025	Email – Document Review	Follow up on OPG sharing the draft WWMF IEP in July 2025 for MNO GBTTCC review and input.
HSM	September 2025	Meeting (in-person)	Q3 Engagement Meeting. Agenda items included: WWMF licensed operations to date, WFOL renewal updates, construction completion of the MPSB and commissioning report submission, Preliminary Decommissioning Plans and upcoming reviews, WWMF 2026 ERA and selection of receptors.
HSM	September 2025	Site Visit	HSM on site to participate in WWMF biodiversity monitoring initiative - butternut tree monitoring.
HSM	July 2025	Email – Document Review	OPG shared draft WWMF IEP for review and input by end of August. HSM reviewed, were no comments at this time.
HSM	July 2025	Site Visit	HSM on site to observe water and sediment sampling, in support of 2026 the WWMF ERA.
MNO GBTTCC	July 2025	Email – Document Review	OPG shared draft WWMF IEP for review and input by end of Augst.
HSM and MNO GBTTCC	June 2025	Briefing Note	Licensed activity updates including summary of ERA and planning (i.e. field sampling) for 2026 ERA, seeking participation and input.
MNO GBTTCC	June 2025	Meeting (in-person)	GBTTCC All Councils Meeting. Agenda items included: overviews of OPG, Nuclear Sustainability, WWMF licensed activities and WFOL renewal, Radioactive Material Transportation, environmental programs, and biodiversity programs.
MNO GBTTCC	June 2025	Meeting (virtual)	Q1/2 Engagement Meeting. Agenda items included: review of Nuclear Sustainability division, 2024 volumes and operation summary, and volume reductions, 2024 summary of Radioactive Material Transportation, WFOL overview including SCAs,



Nation/ Community	Date/ Timeline	Engagement Activity	Summary
			MPSB construction update, WFOL Renewal process, including estimated timelines, Decommissioning Planning – shared high-level overview of PDPs and upcoming reviews. Overview of Environmental Protection SCA and associated programs, 2026 WWMF ERA – overview and invitation to participate.
HSM	June 2025	Meeting (in-person)	Q2 Engagement Meeting. Agenda items included: WFOL renewal process, including estimated timelines, overview of licence conditions and SCAs, overview of ERA process – and 2026 ERA sampling and activities, and OPG's Generation for Generations energy education program.
HSM	June 2025	Tour	Tour of the WWMF and overview of licensed activities.
HSM	May 2025	Site Visit	HSM participated in WWMF biodiversity monitoring activities including snake coverboard monitoring.
HSM	March 2025	Meeting (in-person)	Q1 Engagement Meeting. Agenda items included: 2024 volumes and operation summary, and volume reductions, WFOL renewal overview, environmental monitoring field work and sampling plan for 2025, environmental emissions summary reports overview (effluents, groundwater monitoring), Indigenous Engagement Plans – and plans for the WWMF IEP to be drafted and shared later in the year.

Table 9: Identified Indigenous Communities Expressing an Interest – Summary of Engagement

Chippewas of Kettle and Stony Point First Nation (CKSPFN)		
Date/Timeline	**Engagement Activity**	**Summary**
October 2026	Email	CKSPFN responded to OPG's follow up regarding CKSPFN review of the WWMF licence renewal application. CKSPFN does not have any comments or concerns but would like to stay informed as the application progresses. OPG staff responded confirming OPG will continue to share updates with CKSPFN as the application progresses and to reach out if there is anything OPG can do to further support CKSPFN's participation throughout the licence renewal process.



Chippewas of Kettle and Stony Point First Nation (CKSPFN)		
Date/Timeline	**Engagement Activity**	**Summary**
September 2026	Email	OPG followed up with CKSPFN for another opportunity for CKSPFN to share any questions/comments, to be incorporated into the CMD, as appropriate.
May 2026	Email	OPG shared update on CNSC deadline for participant funding applications, initial date was May 19, 2026, extended to June 16, 2026. OPG also shared a summary of key dates/milestones for WWMF licence renewal, including request for comments on WWMF renewal application by July 3, 2026, to have input and/or concerns reflected in OPG's CMD, as appropriate. CKSPFN responded with appreciation for the update, indicated they were reviewing and would submit any comments/questions by July 3.
May 2026	Meeting (In-person)	OPG staff attended a CKSPFN Chief and Council session and shared overview of: - WWMF Waste Facility Operating Licence, licence conditions and Safety and Control Areas, approved structures in the current WFOL, maps highlighting the location and layout of the WWMF. - WWMF licence renewal application process, updates, key milestones and timelines
May 2026	Email and Document Review	OPG shared a copy of the WWMF licence renewal application submitted to the CNSC May 1, 2026, replacing the previously submitted application (December 2025). - To allow for additional time for engagement on the proposed new buildings at the WWMF, OPG removed the request for authorization of UFDSBs 9 and 10. A summary of changes was also shared, highlighting various sections and the respective updates OPG requested comments by July 3, 2026, to have feedback input, and/or concerns reflected in OPG's CMD, to be submitted in November 2026, as appropriate.
February 2026	Email	CKSPFN shared with OPG they do not have any questions on the renewal application and appreciate the update. Also indicated an overview for Chief and Council and/or community would be meaningful. *An overview session was scheduled for April 2026 and was later rescheduled by CKSPFN until May 2026.



Chippewas of Kettle and Stony Point First Nation (CKSPFN)		
Date/Timeline	**Engagement Activity**	**Summary**
February 2026	Email – document review	OPG followed up with CKSPFN on their review of the WWMF WFOL application, seeking if there were any questions and if a meeting/overview would be helpful.
January 2026	Email – document review	OPG shared a copy of the WWFM WFOL application for review, including milestones and timelines for licensing process.
May 2025	Meeting (virtual)	Introductory meeting for WWMF overview: WWMF operations and licensed activities, WWMF WFOL, MPSB, WFOL renewal.
June 2023	Email	Follow up on OPG reaching out to CKSPFN for an introductory meeting and overview of WWMF.
October 2022	Email	OPG reached out to CKSPFN for an introductory meeting and overview of WWMF. This was in response to CKSPFN review and written submission on the 2021 CNSC Regulatory Oversight Report (ROR), for Canadian Nuclear Power Generating Sites.

1.6.6 Summary of Issues, Interests, and/or Concerns

OPG staff have summarized issues, interests and concerns raised to date through early engagement and ongoing engagement activities on the licence renewal summarized in Tables 7-9. This summary is provided in Table 10 below and includes OPG's response to and status of each issue, interest, and/or concern. The status classifications are OPG's administrative tracking categories for the specific actions, responses, measures, or engagement activities associated with an identified issue, interest or concern. They are intended to show the current status of OPG's response and, where applicable, provide cross-reference to related measures to address summarized in Table 11.

From OPG's perspective, OPG has made continued efforts to: understand and seek confirmation of issues, interests and/or concerns raised; work together on ways to address issues and/or concerns and guide conversations and seek perspectives on whether the measures outlined in Table 11 are satisfactory. OPG staff will continue to diligently capture issues, interests, and concerns over the course of engagement and seek to understand and address, as appropriate, through continued engagement.

Table 10: Summary of Issues, Interests and/or Concerns

Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
Historical Impacts/ Legacy Issues	SON	SON has expressed concerns regarding lack of consultation and that consent was never	OPG acknowledges that legal requirements regarding Indigenous engagement and consultation have evolved since the construction of the	In Progress and Ongoing – continue meeting and



Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
		provided by SON from the original construction of the Bruce Nuclear Site and development of the nuclear industry and continued use of SON territory for the storage and management of nuclear waste from OPG's facilities. SON has expressed impacts of nuclear waste storage in SON Territory are far-reaching, including dread and stigma resulting in withdrawal from traditional practices and loss of knowledge transfer across generations.	WWMF over 50 years ago. OPG continues to respond to the evolving legal requirements to meet contemporary standards of engagement and/or consultation. OPG remains committed to continue meeting with SON and working towards addressing legacy issues, including providing SON with capacity to support these conversations (see "Capacity Funding Agreements" theme/topic area). While OPG recognizes the importance of working through legacy issues with SON, OPG does not see the resolution of these issues as being tied to the licence renewal process nor should addressing these matters be incorporated into the licence renewal process. OPG will continue to work to address legacy issues through a separate and structured engagement process with SON.	working collaboratively to resolve legacy issues.
Capacity Funding Agreements	SON	SON expressed concerns that there is no agreement in place between SON and OPG on the future operations of the WWMF and raised the need for capacity funding to support participation in the licence renewal process.	In December 2024, OPG shared draft for discussion capacity funding agreements to support both progressing legacy issues resolution and engagement on WWMF operations, including licence renewal. OPG regularly followed up with SON to finalize these capacity agreements. Initial feedback from SON was received in June 2026 and mark-ups were received in October 2026 (see Section 1.6.5 for additional details). OPG remains committed and open to providing reasonable funding necessary to support SON's review of the materials previously provided to SON and any new material which will be provided in relation to the licence renewal.	In Progress and Ongoing – continue progressing capacity funding agreements
Consent for Continued Operations		SON has expressed concerns regarding the continued storage of nuclear waste within its traditional territory without	OPG appreciates the importance of UNDRIP, which includes the concept of FPIC. Canadian courts continue to interpret the effect of the UNDRIP Act ("UNDA") and the Government of	Not Addressed – Differing Perspectives



Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
		its consent and remains opposed to the ongoing and open-ended accumulation of nuclear waste in SON Territory in the absence of Free, Prior and Informed Consent (FPIC). SON maintains that OPG's licence application directly engages Article 29(2) of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).	Canada's implementation steps that are being taken under it, most recently the pronouncement that UNDA provides a framework for the future implementation of UNDRIP's articles. OPG will continue to comply with all applicable laws, regulations, and legislative requirements as they evolve. While UNDA does not provide direction on the implementation of UNDRIP's articles in Canada, OPG approaches its engagement process in a manner which provides an ongoing, collaborative process which enables Indigenous Nations to meaningfully participate in decision-making that may impact their constitutionally protected rights. OPG has and continues to apply a robust and comprehensive engagement program that seeks to engage Indigenous Nations and communities with asserted and/or established treaty and/or Aboriginal rights where its nuclear sites are located to understand and address concerns. In alignment with REG-DOC-3.2.2, OPG also seeks to engage with Indigenous Nations and communities that express interest in its nuclear sites and operations. As set out in Section 1.6.2, OPG's initial assessment is that the activities included in the licence renewal application do not give rise to any novel impacts on asserted and/or established Aboriginal and/or treaty rights. Following CNSC staff review of OPG's application, their recommendation to the Commission at that time (July 2026), is that it does not raise the formal legal duty to consult. Further, CNSC staff noted the "renewal application is not anticipated to lead to any new or novel impacts on the ability of Indigenous Nations and communities to exercise their (asserted	



Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
			and/or established) treaty and/or Aboriginal rights. OPG remains committed to continued engagement with SON regarding WWMF operations and activities, welcomes any additional information regarding potential impacts on established treaty and/or Aboriginal rights, and has offered capacity funding to support SON's participation in these discussions since December 2024. OPG remains committed to providing reasonable capacity funding and seeks to finalize a capacity agreement initially shared with SON in December 2024.	
Procedural Requirements and Constitutional Obligations	SON	SON has expressed concerns over OPG's position that the licence renewal is limited to existing authorized use and no novel impacts and that it diminishes its significance and OPG attempts to substitute capacity funding and information sharing for the recognition of SON's rights and the deep engagement required. SON has expressed concerns that OPG revised its application in what appears to be a deliberate strategy to undermine and circumvent procedural requirements and constitutional obligations aimed at protecting SON's rights.	OPG shared an early draft of the licence renewal application and a briefing note that provided a summary of the application with SON in November 2025. Following this engagement, OPG received correspondence from the SON Chiefs identifying the need for capacity funding to support SON's participation in the licence renewal process (see "Capacity Funding Agreements" theme/topic area). OPG remains open to hearing from SON on any potential novel impacts to established and/or asserted Aboriginal and/or treaty rights. In order to allow additional time and space for engagement on proposed new buildings at the WWMF, OPG removed the request for authorization of Used Fuel Dry Storage Buildings 9 and 10 from the application, streamlining the renewal to existing authorized use. OPG has continued efforts to establish a capacity funding agreement with SON to support participation in discussions regarding WWMF operations, which will include a licence amendment requesting authorization for new storage buildings at the WWMF.	Not Addressed – Differing Perspectives



Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
			OPG is committed to providing time, information, and resources to support SON's participation in these future processes and to ensure that potential impacts on established and/or asserted Aboriginal and treaty rights are identified, understood, and considered.	
Comprehensive Plan for WWMF	SON	SON has shared they cannot make an informed and meaningful decision on WWMF licence renewal consent without a comprehensive plan from OPG outlining how OPG intends to use WWMF over its full operational life cycle, including duration of operations, projected waste volumes, and an endpoint.	Beyond structured conversations relating to legacy issues, OPG and SON do not currently have a forum to discuss comprehensive plans for WWMF. OPG continues to engage with SON regarding WWMF's ongoing operations and remains open and adaptive to SON's request to receive information on related subjects of interest and/or concern. Canada's "Modernized Policy on Radioactive Waste and Decommissioning" (released March 2023) outlines the requirements that by 2050 "key elements of Canada's radioactive waste disposal infrastructure are in place. Planning is well under way for the remaining facilities necessary to accommodate all of Canada's current and future radioactive wastes". With respect to used fuel, OPG is supportive of the Nuclear Waste Management Organization (NWMO) initiative to advance permanent and safe storage solutions for this high-level waste stream. Wabigoon Lake Ojibway Nation and the town of Ignace in northwestern Ontario have both elected to move forward in the NWMO's site selection process as the potential host communities for the future site for Canada's deep geological repository for used nuclear fuel. OPG's planning assumptions for the long-term management of L&ILW include a conceptual long-term disposal strategy assumption consistent with the NWMO's recommended *Integrated Strategy for*	Measure to Address. Please see "Measure to Address Areas of Interest and/or Concern Table"



Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
			Radioactive Waste for the long-term management of irradiated wastes in Canada, as accepted by the federal Minister of Natural Resources in 2023. The strategy determined that ILW/non-fuel high-level waste will be disposed of in a DGR with implementation by the NWMO and LLW will be disposed of in near surface disposal facilities with implementation by OPG as the waste generator and owner. OPG acknowledges that the full operational life cycle of the WWMF is beyond the scope of this licence application, which is requesting renewal for existing authorization for a 10-year licence term; however, OPG remains committed to engaging with SON on WWMF current and future operations and plans. OPG has shared the Preliminary Decommissioning Plans (PDPs) with SON for review and comment. OPG looks forward to establishing a forum to discuss interests and concerns from SON related to WWMF's lifecycle to identify potential measures to address, as appropriate.	
Provision of future documents and plans for review	MNO GBTTCC	MNO GBTTCC expressed interest in being provided with future documents and plans for review, specifically related to the 2026 WWMF ERA.	OPG provided an overview of the 2026 ERA during the Q12 2026 engagement meeting and shared a copy of the report in October 2026. OPG remains open and committed to continue sharing information and discussing the 2026 WWMF ERA.	Complete – Information Sharing; provided copy of report.
Long-term management of nuclear waste	HSM	HSM expressed long-term nuclear waste management is an important area of interest and concern.	Canada's "Modernized Policy on Radioactive Waste and Decommissioning" (released March 2023) and outlines requirements that by 2050 "key elements of Canada's radioactive waste disposal infrastructure are in place. Planning is well under way for the remaining facilities necessary to accommodate all of	Measure to Address. Please see "Measure to Address Areas of Interest and/or



Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
			Canada's current and future radioactive wastes". With respect to used fuel, OPG is supportive of the Nuclear Waste Management Organization (NWMO) initiative to advance permanent and safe storage solutions for this high-level waste stream. Wabigoon Lake Ojibway Nation and the town of Ignace in northwestern Ontario have both elected to move forward in the NWMO's site selection process as the potential host communities for the future site for Canada's deep geological repository for used nuclear fuel. OPG's planning assumptions for the long-term management of L&ILW include a conceptual long-term disposal strategy assumption consistent with the NWMO's recommended Integrated Strategy for Radioactive Waste for the long-term management of irradiated wastes in Canada, as accepted by the federal Minister of Natural Resources in 2023. The strategy determined that ILW/non-fuel high-level waste will be disposed of in a DGR with implementation by the NWMO and LLW will be disposed of in near surface disposal facilities with implementation by OPG as the waste generator and owner. OPG acknowledges that the long-term management of nuclear waste is beyond the scope of this licence application, which is requesting renewal for existing authorization of nuclear waste interim storage for a 10-year licence term; however, OPG remains committed to engaging with HSM on WWMF current and future operations and plans.	Concern Table"
Community engagement circle and community-	HSM	HSM shared plans to facilitate an Engagement Circle and emphasized that community perspective	OPG welcomes receiving information and topics of interest resulting from the	In Progress and Ongoing – continue meeting and



Issue, Interest and/or Concern	Raised By	Description	OPG's Response	Status/ Mitigation
centered review		remains central to the review process.	Engagement Circle, that HSM wishes to share. OPG remains committed to continue building future engagement meeting agendas collaboratively with HSM and will prioritize topics of interest HSM identifies, which may include topics of interest informed by the Engagement Circle.	engaging on Engagement Circle outcomes and HSM Community centered review.

Table 11: Measures to Address Areas of Interest and/or Concern

Topic	Raised By	Description of Issue, Interest and/or Concern	Measure to Address	Commitment Type
Engagement on Comprehensive Plan for WWMF	SON	SON has expressed their need for a comprehensive plan outlining how OPG intends to use the WWMF over its full operational life cycle.	OPG has proposed to SON to establish a forum for engagement through a capacity agreement and associated funding to support discussions with SON regarding WWMF's full operational life cycle. Through this agreement, OPG will commit to regular engagement opportunities to discuss topics of interest and priority to SON, including OPG's planning assumptions for long-term management of high, intermediate, and low-level waste, project waste volumes, and WWMF life cycle, including decommissioning planning.	Deepening Engagement – measures support strengthening engagement and understanding of WWMF operations, including WWMF life cycle.
Engagement on Long Term Management of Nuclear Waste	HSM	HSM expressed interest and concern related to long term plans for the management of nuclear waste	OPG will continue to collaboratively develop agenda items with HSM for engagement meetings, including sharing industry updates on plans related to long term management of nuclear waste.	Deepening Engagement – measures support strengthening engagement on long term management of nuclear waste.



1.6.7 Planned Engagement

OPG is steadfast in its commitment to supporting meaningful engagement before, during and after the licence renewal application process and will work in collaboration with Indigenous Nations and communities to identify approaches to engagement that are considerate of the engagement context and the interests of each Indigenous Nation and community.

For continued engagement on the Licence Renewal process, OPG will look to leverage the site-wide WWMF IEP as a guide to ensure a thorough and holistic understanding of WWMF operations and activities.

OPG will continue to engage with SON on WWMF operations and activities and will also continue to prioritize finalizing an agreement and associated capacity funding to support participation and engagement in activities described in Table 12.

OPG will continue to provide capacity funding to the MNO and HSM to support their participation and engagement through the following forums described in Table 12 below, in accordance with existing Relationship Agreements.

Table 12: Planned Engagement Activities

Nation/Community	Forum and Frequency	Scope and Topics
Saugeen Ojibway Nation	Written communications Monthly and annually	• WWMF licensed activities and WFOL renewal application • Comprehensive Annual Report for SON (details of contents above in section 1.6.5)
	Meetings and correspondence, as requested and/or required	• WWMF licensed activities and WFOL renewal application
	Site visits and tours, as requested	• WWMF licensed activities • Biodiversity initiatives • Other topics of interest
Métis Nation of Ontario GBTTCC	Biannual engagement meetings	• WWMF licensed activities and WFOL renewal application • Environmental Protection Program • Biodiversity initiatives • Other topics of interest
	Site visits and tours, as requested	• WWMF licensed activities • Biodiversity initiatives
Historic Saugeen Métis	Quarterly engagement meetings	• WWMF licensed activities and WFOL renewal application • Environmental Protection Program • Biodiversity initiatives • Other topics of interest
	Site visits and tours, as requested	• WWMF licensed activities • Biodiversity initiatives



Nation/Community	Forum and Frequency	Scope and Topics
CKSPFN	Correspondence and meetings as requested	• WWMF licensed activities and WFOL renewal application

1.6.8 Schedule of Reporting

OPG will continue its practice of meeting with CNSC staff monthly to discuss the status of Indigenous engagement on the WWMF WFOL renewal application. In addition, throughout the licence renewal process, an engagement log will continue to be maintained and shared with CNSC upon request. If further information or additional meetings are required during the renewal process, OPG will work with CNSC staff to establish additional reporting, as appropriate.

1.7 Public Information and Disclosure Program

OPG believes in open and transparent communication in a timely manner to maintain positive and supportive relationships and the confidence of key stakeholders and the public. OPG's *Nuclear Public Information Disclosure and Transparency Protocol*, posted on OPG's website, describes our communication principles and information requirements and reporting. This protocol adheres to the regulatory requirements outlined in CNSC REGDOC-3.2.1 *Public Information and Disclosure*.

OPG's Corporate Relations organization adheres to OPG standard *Nuclear Public Information and Disclosure*, as it describes consistent standards and procedures for all public disclosure of both material and non-material information. Public information and disclosure involves the provision to inform, in a timely and transparent manner, accurate information to stakeholders and the public in the vicinity of OPG's nuclear and waste facilities regarding events, activities and operations.

OPG's public information program has been recognized as a strength by national and international utility peers. To ensure continuous improvement, OPG annually evaluates the effectiveness of the *Nuclear Public Information and Disclosure* standard and implements findings.

The public information program proactively provides information to the public and stakeholders on the WWMF operations. The primary focus area for engagement activities, in addition to the public at large, includes residents, businesses and municipalities proximate to the WWMF site including the host community of Kincardine and adjacent communities within 40 km. This area is where residents are most familiar with the WWMF and regularly receive information on OPG's operations including facility and project updates.

OPG ensures the public and stakeholders with a potential interest in the WWMF operations and performance are provided with relevant information and have the opportunity to share their views and perspectives. Information is communicated in a number of ways based on their interests and preferred means of communication.

OPG develops, maintains and implements an annual public information and disclosure program that:

- Ensures consistent standards and procedures for public disclosure of material and non-material information.
- Ensures communications, whether positive or negative, are full, fair, accurate, timely and understandable and are broadly communicated in a non-selective manner to individuals,



organizations, stakeholders and the public based on real or perceived risks and public interest or concern.
- Provides information on health, safety and security of persons and the environment, and ensures issues associated with the licensed operations and activities are communicated.
- Utilizes a managed system to ensure high standards of performance, compliance and ongoing effectiveness.

Key stakeholders and audiences may include but are not limited to:

- Indigenous Nations and Communities
- Residents in the vicinity of the WWMF and the public.
- Established community committees.
- Local businesses and business organizations, such chambers of commerce.
- Private/public community organizations and special interest groups.
- Non-Governmental Organizations.
- Nuclear industry associations/organizations and regulatory bodies.
- Media.
- Federal, provincial, regional, and municipal agencies and officials with a regulatory role or interest.
- OPG employees and retirees.

Throughout the current licence period, OPG has executed a strategic communication plan that proactively plans and prepares communications and engagements with all key audiences and communities. Information is provided and/or made available to the public in an informative, accurate and timely manner and in accordance with CNSC REGDOC-3.2.1, *Public Information and Disclosure*.

During the current licence period, OPG's Stakeholder Relations team has:

- Executed 254 facility tours,
- Distributed 20 publications to households, businesses and stakeholders in Bruce and Grey County,
- Supported 505 initiatives and organizations through OPG's Corporate Citizenship Program/Power for Change Program, and
- Responded to 295 public inquiries via SalesForce, a database/software.

1.7.1 Communication Methods

Communication methods are the approaches and activities used to distribute information, and to solicit feedback and input.

Since 2015, OPG has publicly posted all reportable events for the WWMF, ensuring all regulatory requirements were met. OPG's NSS webpages are updated as required throughout the year. OPG news, updates and advertisements are shared on OPG's social media platforms (Facebook, Twitter/X, LinkedIn and Instagram).

OPG utilizes a variety of platforms to engage, educate and seek feedback from the public, government organizations and stakeholders regarding our operations. These platforms include, but are not limited to:

- Website*:* Revised nuclear waste pages on opg.com ensuring clear use of nuclear waste terminology. OPG continues to provide information and updates on www.opg.com. The website serves as a vehicle to provide access to information, as well as a mechanism to receive input from



interested persons as an enhancement of the public outreach program; questions and inputs are tracked and responded to in a timely manner.

- Social Media: OPG maintains a presence on social media (Facebook, Twitter/X, LinkedIn and Instagram) and shares information through these forums.
- Public Information Centre: OPG works closely with Bruce Power to ensure information on OPG's waste management and handling practices at the WWMF are available and highlighted at the Bruce Power Visitor Information Centre, as well as on Bruce Power public bus tours of the site.
- Community Events: The OPG Stakeholder Relations team participates at a variety of community events and festivals each year, ensuring the public can ask questions about OPG's operations, including waste management and projects.
- Media Relations: Ongoing liaison with respect to operations and licensing activities is initiated and maintained by OPG with reporters and news editors for both electronic and print media.
- Key Stakeholder Briefings: Briefings are conducted to present information and provide an opportunity to have questions and comments addressed. Regular updates are presented to municipal representatives, established community committees and special interest groups. Feedback from these meetings is recorded for response and issues management.
- Advertisements and Letters: Public notifications are prepared and distributed in a number of ways including quarterly stakeholder newsletter(s), web communications, the OPG community newsletter (Neighbours) and advertisements in local print or social media (as required).
- Public Information Sessions: Information sessions (in person or virtual) are advertised broadly and open to the public, providing an opportunity to learn more about OPG's operations, projects and the NSS division with the opportunity to provide comments and/or have questions answered by members of the OPG team.

1.7.2 Facility Reporting

OPG regularly and proactively provides information to the public on its operations through OPG's standard *Nuclear Public Information and Disclosure*.

For operational status changes or unscheduled operations that may be of interest to the public or media, OPG follows the Stakeholder Public Interest Notification Process to notify key stakeholders in a timely manner as outlined in OPG's *Nuclear Public Information and Disclosure* standard. The purpose of the process is to ensure those key stakeholders in emergency agencies (fire, police, and emergency management) and local government organizations are kept aware and are able to respond accurately if they receive questions from constituents. WWMF maintains a duty on-call organization 24 hours a day, seven days a week.

OPG publicly posts WWMF operations performance reports and environment reports on the OPG website and shares these documents electronically.

1.7.3 Environmental Partnerships and Programs

A pillar of OPG's Power for Change program is "Protecting the Planet". OPG supports a wide variety of programs in the community whose mandate is to protect, restore and enhance our natural environment. This includes support of the Pine River Watershed Initiative, Grey Bruce Children's Water Education Council and the Huron Fringe Birding Festival, among others.

OPG's WWMF operations holds a gold level certification from Tandem Global (formally the Wildlife Habitat Council) for excellence in biodiversity at the Bruce site. This achievement recognizes the specific efforts



of our biodiversity programs, which aim to protect and nurture species and their habitats wherever OPG operates.

1.7.4 Community Recognition

- Progressive Aboriginal Relations Gold Designation from the Canadian Council for Aboriginal Business – 2021
- Women's Executive Network Ally of Excellence Award – 2022
- Canada's Best 50 Corporate Citizens by Corporate Knights – 2022
- Gold Certification by Tandem Global – 2020 & 2023
- Canada's Best Diversity Employers – 2023
- Government of Canada Employment Equity Achievement Award (Innovation category) – 2024
- Partnership Accreditation in Indigenous Relations Gold Designation from the Canadian Council for Indigenous Business (2024)
- Canada's Best Employers (2025)
- Canada's Best Employers for Company Culture (2025)

1.7.5 Planned Improvements

While OPG meets the requirements of CNSC REGDOC-3.2.1, *Public Information and Disclosure,* OPG continues to look for areas to review our program and adapt it to make it more effective and comprehensive, ensuring we meet the needs of the communities and the public. Annually, OPG will continue to evaluate the effectiveness of the public information program and implement findings utilizing a variety of tactics including, but not limited to:

- Conducting interviews/focus groups/surveys with key stakeholders, community members, community groups/committees.
- Conducting Self-Assessments.
- Reviewing documentation/reports, including media coverage and Salesforce reports.
- Reviewing public opinion/opinion leader polling, research polling.
- Consulting with public and key stakeholders on a variety of Corporate Relations initiatives including community and key stakeholder programming.

2.0

Safety and control areas





2.0 Safety and Control Areas

The 14 Safety and Control Areas (SCAs) are a set of technical areas used by CNSC to assess, evaluate, review, verify and report on regulatory requirements and performance. The SCAs are further divided into specific areas that define the key components of each SCA.

The licence application (Reference 1) details the policies, programs, standards, procedures and processes implemented at the WWMF to meet the requirements of the *Nuclear Safety and Control Act* (NSCA), the regulations made under the NSCA and the Waste Facility Operating Licence (WFOL). A summary of those descriptions, along with highlights of WWMF's strengths, achievements and planned improvements are provided in the subsections below.

OPG is continuing to transition to newer codes and standards and Appendix C contains a list of Compliance Verification Criteria Documents, that WWMF is now in compliance with or will be in compliance with by the listed implementation date.

2.1 Management System

OPG maintains a *Nuclear Management System* in accordance with the WWMF WFOL and associated Licence Conditions Handbook. OPG's Nuclear Management System is applicable to all OPG nuclear facilities and is compliant with (Canadian Standards Association) CSA N286-12, *Management system requirements for nuclear facilities.*

The fundamental objective of OPG's *Nuclear Management System* is to ensure OPG nuclear facilities, including waste management facilities, are operated and maintained using sound nuclear safety and defence-in-depth practices to ensure radiological risks to workers, the public, and the environment are As Low As Reasonably Achievable (ALARA), and in keeping with the *OPG Nuclear Safety and Security Policy* and the best practices of the international nuclear community.

OPG's *Nuclear Management System* sets out the principles, required supporting actions and documentation to support the safe and reliable operations of our nuclear facilities, and brings together in a planned and integrated manner, the processes necessary to satisfy CSA N286-12 requirements and to carry out licensed activities safely.

Management system requirements provide direction to develop and implement management practices and controls. Programs and processes are created such that all applicable regulatory requirements and codes and standards are embedded and integrated within the *Nuclear Management System*, including aspects of health, safety, environment, security, economics and quality.

2.1.1 Management System

OPG's Nuclear Management System is documented in the *Nuclear Management System* Charter and provides the framework for programs and processes that collectively ensure that the nuclear facility operates safely and reliably.

The Charter takes authority from the *Nuclear Safety & Security Policy*, established by OPG's Board of Directors. In accordance with the *Nuclear Safety & Security Policy*, the Chief Nuclear Officer (CNO) is accountable to the Chief Executive Officer and Board of Directors to establish a management system that fosters nuclear safety and security as the overriding priority.



The Charter, consistent with the policy, communicates the expectations of the CNO. Collectively, the Charter and its reference processes establish a quality program, and the *Nuclear Management System*, and fulfill the requirements of CSA N286-12.

Every employee in the organization is responsible for and held accountable for complying with the expectations of the Charter and referenced Programs, and for ensuring their actions are deliberate and consistent with protecting worker health and safety, the health and safety of the public, and the environment.

The *Nuclear Management System* has evolved to support the OPG corporate-led business model. Several Programs have transitioned from being Nuclear-only to being owned by corporate business units (e.g., *Items and Services Management*, *Information Management*, and *Environment and Health and Safety*). For these programs, ownership and accountability for the Program resides with the Corporate Program Owner and the CNO remains accountable for the effectiveness of the implementation of these Programs in Nuclear, and in meeting the requirements of CSA N286-12. Oversight and review of the health and effectiveness of these Corporate Programs continue to be part of the *Nuclear Management System*.

OPG's *Nuclear Management System Administration* program describes the framework and processes established by OPG Nuclear and interfacing corporate organizations to demonstrate effective implementation and compliance with the requirements set out in CSA N286-12.

2.1.2 Organization

The *Nuclear Management Systems Organizations* standard describes the organizational structure, authorities, and accountabilities in support of the OPG Charter and CSA N286-12 requirements. The standard establishes the framework for maintaining a sufficient number of qualified staff to safely operate, maintain, and support nuclear generating stations while promoting organizational effectiveness and efficient use of resources.

Changes to organizational structures, functions, and accountabilities are controlled through OPG's formal organization design governance process. The process establishes requirements for the evaluation, review, approval, and implementation of organizational changes and ensures that impacts to accountabilities, authorities, interfaces, staffing, and organizational effectiveness are appropriately assessed prior to implementation.

WWMF operates within OPG's corporate-led organizational model, which is intended to ensure clear accountabilities, effective governance, and consistent implementation of programs across the organization. Under this model, accountability for enterprise programs and functional excellence is assigned to corporate-led organizations, while accountability for the safe, secure, and reliable operation of nuclear facilities remains with the operational organizations.

Corporate-led functions, including Human Resources, Corporate & Technology Services, Legal Services, Corporate Affairs, Finance, and Supply Chain, provide enterprise programs, standards, oversight, and specialized expertise in support of operational organizations. This model establishes a single point of functional accountability for each business area and supports the consistent application of requirements, development of organizational capability, and effective support to facility operations.

The Vice President, Nuclear Sustainability Strategies and Services holds the authority to act and make commitments on behalf of OPG in engagements with CNSC staff. This role encompasses the management and control of the operation and monitoring of OPG's nuclear waste management facilities to fulfill the requirements of the CNSC waste facility operating licenses, in accordance with their



Operating Policies and Principles and applicable Federal and Provincial Regulations. The day-to-day operations and management of the WWMF are overseen by the Senior Managers, Operations and Maintenance. The Senior Managers report directly to the Director of Western Waste Operations. Only personnel authorized by the Senior Managers, Operations and Maintenance are permitted to supervise operations at the WWMF. The operations staff receive direct support from central functions to ensure seamless integration and operational efficiency.

The organizational chart (Figure 4) detailing the NSS organization and its supporting corporate-led organizations is updated and maintained to reflect these structures.

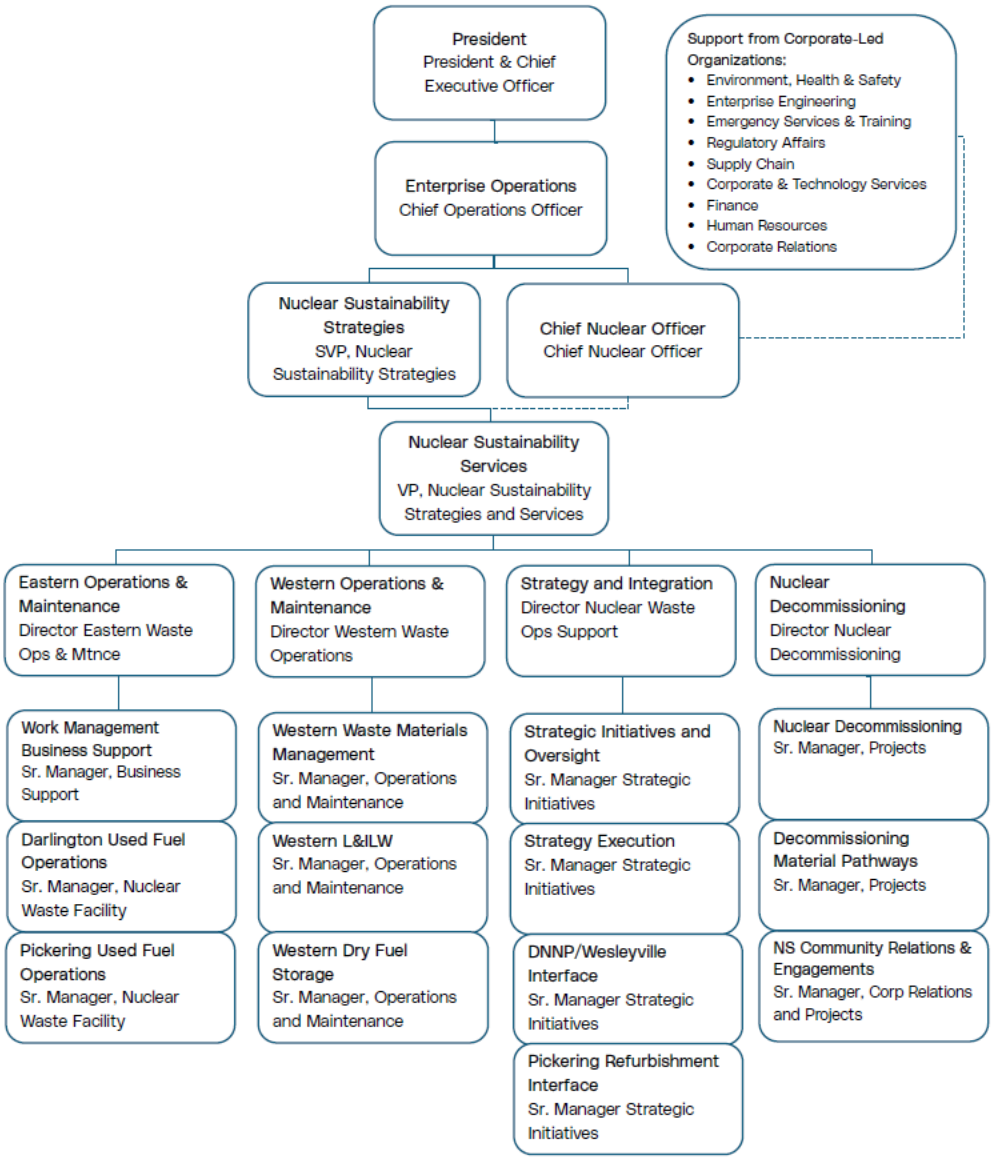


Figure 4: Nuclear Sustainability Services Organization Chart



2.1.2.1 Staffing Management

Workforce planning is an integrated and continuous process that identifies and addresses critical gaps between the current workforce and future needs in the context of NSS' operating strategy. OPG is attracting, developing, and retaining our talent through existing programs and processes.

Staffing plans at OPG use workforce planning data (i.e. approved business plan demand, supply and attrition assumptions) to proactively identify potential resourcing gaps and risk areas requiring mitigation. The plans are prepared annually and are periodically reviewed throughout the year for the following: to ensure any changes to workforce profiles are regularly assessed for risks, mitigation plans which are required, and that qualified staffing levels are maintained for safe reliable operation of WWMF.

Recruitment and Onboarding

OPG has a comprehensive recruitment strategy to source and attract a qualified, diverse and high-performing workforce. This approach combines internal and external recruiting programs, including partnerships with educational institutions, hiring halls for trades, job postings on internal and external career sites, direct sourcing, and collaboration with retained and contingent recruitment agencies. Succession planning discussions further strengthen our ability to meet future workforce needs.

OPG is actively working with industry partners and educational institutions to support early career hiring throughout the province to help maintain healthy levels of new entrants into critical roles, such as engineering, operations and maintenance. OPG partners with more than 15 post-secondary institutions to support recruitment initiatives. In addition, OPG offers 26 scholarships and has formal scholarship agreements with many universities and colleges across the province. OPG also provides many student co-op and intern placements each year to support integrated learning, on-the-job training, and entry into the workforce. OPG's recruitment programs support a diverse and innovative workforce, our Indigenous Opportunities Network (ION) is dedicated to the recruitment of Indigenous Peoples through a network of employers in the energy industry and recruitment agencies. OPG is committed to advancing representation of qualified equity-deserving groups (Women, Indigenous Peoples, Racialized People, Persons with Disabilities) through our hiring and recruitment efforts.

OPG's onboarding program integrates qualified employees and contractors into the organization. It promotes exceptional performance combined with employee experience to create a welcoming and inclusive environment for new hires aligned with company goals and values.

Knowledge Management

OPG has many well-established methods to ensure people have the qualifications, knowledge and skills required to perform competently. The knowledge management program complements these foundational programs by providing tools and techniques to consider and share tacit knowledge.

OPG has invested in knowledge management for ongoing operations as well as the delivery of projects and initiatives to ensure that the critical knowledge and expertise of employees is sustained.

Talent and Succession Planning

The OPG talent review and succession planning program ensures that necessary talent and skills will be available when needed, and that essential knowledge and abilities will be maintained. Succession planning is one component of this strategy, with the objective to identify and develop future leadership and to integrate this with the staffing needs to ensure continuity in critical roles.



OPG has an integrated succession planning process for its nuclear operations that includes identifying critical positions and determining the priority of each role. The level of management oversight of the succession planning of these critical positions is determined by the priority given to the role.

The OPG talent review and succession planning program is fully integrated into the broader human resources management programs within OPG that include performance measurement, individual development planning, skills and capability development, diversity and inclusion, and culture.

2.1.3 Performance Assessment, Improvement, and Organizational Effectiveness

OPG's *Independent Assessment* program provides processes to perform a comprehensive and critical evaluation of activities affecting OPG nuclear facilities. This program ensures the nuclear management system is reviewed with sufficient frequency to confirm its continued effectiveness. The program includes internal assessments performed by Nuclear Oversight and external assessments performed by the Nuclear Safety Review Board (NSRB).

The NSRB performs an independent (external) assessment of OPG activities that may impact on nuclear safety and performance. The NSRB reports to the CNO who reports to the President and Chief Executive Officer on nuclear related matters. The NSRB also reports annually to the Generation Oversight Committee of the Board of Directors whose responsibilities include overseeing the safe, secure and efficient operations of OPG's facilities and compliance with nuclear, health and safety, and environmental laws and regulations.

As a learning organization, NSS strives for continuous improvement. The *Performance Improvement (PI)* program establishes the processes that support the conduct of performance improvement and, by extension, employ the principles of problem prevention, detection and correction at OPG. This program covers the key areas of performance improvement, namely: corrective action, self-assessment, benchmarking, operating experience, and nuclear safety culture.

Self-assessment and benchmarking activities for functional and line organizations are utilized to evaluate actual performance against management expectations, industry standards of excellence and regulatory requirements. *Self-assessment and Benchmarking* governance provide methods for identifying shortfalls in the performance of processes, programs, practices, behaviours, roles, responsibilities and organizational expectations.

Issues identified during the performance of audits or self-assessments are documented via Station Condition Records and corrective actions are assigned as required.

In addition, OPG performs regular program health and performance reviews for all applicable programs within the nuclear management system. *Fleetview Program Health and Performance* is a fleet-wide functional review and reporting process to monitor and routinely report on overall program effectiveness. The reporting process involves three key areas: program oversight and leadership, program execution performance indicators, and program action plans. This review is conducted by the Nuclear Executive Committee on a pre-established review schedule, and enhancements or new initiatives are identified based on performance.

The effectiveness of the *Performance Improvement* program is routinely assessed through a set of Key Performance Indicators in the monthly Performance Improvement Health Report. Routine peer team meetings are effectively used to share site and industry best practices, discuss tactical and strategic actions to correct performance shortfalls and gaps to excellence.



This programmatic approach provides defence in depth by establishing multiple layers of oversight across the facility to ensure that adverse conditions are quickly identified, understood, and corrected. Strong line ownership, combined with timely action on emerging trends, ensures that issues and problems are resolved with the appropriate response and recurrence is either eliminated or reduced. This results in high-quality work and safe, reliable operations. This ensures safety for the public, personnel, environment, and facility.

2.1.4 Operating Experience, Problem Identification and Resolution

OPG's Performance Improvement (PI) program establishes processes to ensure deficiencies, non-conformances, weaknesses with a process, document, service, or conditions that adversely impact, or may adversely impact plant operations, personnel, nuclear safety, the environment or equipment and component reliability, are promptly identified and corrected.

For those issues considered significant or recurring, the PI program involves the appropriate levels of management, ensures causes are identified, and that actions taken focus on minimizing or preventing recurrence. The PI program then further verifies that actions taken are complete and effective.

The PI program also establishes processes to ensure that internal and external Operating Experience (OPEX) is evaluated, distributed to appropriate personnel, and applied to implement actions that improve plant safety and reliability.

This information is managed by departmental OPEX Single Point of Contact for reviews, and the documentation of initial assessments or dispositions from site departments. The OPEX database also provides a readily available repository of all previous external OPEX and site reviews/responses to new OPEX with search capabilities.

As part of ongoing improvements for the OPEX process and use of OPEX at WWMF, a number of initiatives have been completed or are in progress:

- Implemented a web-based OPEX search engine that can extract information from various sources such as the Station Condition Record (SCR) database, OPEX Database, Work Reports etc. providing quick access to key OPEX events relevant to line organization tasks.
- Improving the use of internal and external OPEX during Pre-Job Brief and electronic Safe Work Plan in alignment with the Institute of Nuclear Power Operators IER L2-24-2, Leadership in Preventing Fatalities and Severe Injuries. External OPEX brings in lessons learned from other nuclear facilities around the world.

2.1.5 Configuration Management and Change Control

Configuration Management ensures the facility physical configuration for all essential structures, systems and components (SSC) matches the configuration documents for all plant states. The implementing standard for configuration management ensures configuration information is maintained accurately, consistently and is readily accessible along with defining clear scope, responsibilities, authorities and interfaces among organizations. This information is uniquely identified, maintained current and consistent.

Changes which may affect configuration are controlled by:

- Requiring regulatory and licensing reviews, approvals and safety evaluations to ensure physical configuration or configuration information changes conform to the design and licensing basis.



- Reviewing impacts so that related configuration information is maintained consistently with the change.
- Ensuring changes to the design and licensing basis receive appropriate verification and approvals before the change is made.
- Ensuring change processes work in accordance and consistently with each other for design, procurement, construction, installation, commissioning, operation and maintenance, including surveillance, training, and testing.

Change Control programs such as *Engineering Change Control* (ECC), support configuration management by ensuring design changes, document changes and physical configuration changes that impact design and the licensing basis are tracked to completion and are traceable throughout the life of the facility. Adverse configuration management issues are documented using Station Condition Records (SCRs).

The ECC program ensures design changes to each OPG facility (including SSC, software and engineered tooling) are controlled such that the facility configuration is managed in accordance with the design and licensing bases and remains within the Safe Operating Envelope.

Configuration management is an important aspect of maintaining and keeping WWMF in an assessed state within the licensing basis and is reviewed both by internal and external organizations regularly. Actions are taken as appropriate to correct any identified adverse conditions.

OPG's Nuclear Oversight audits of the ECC program during the current licence term found that the managed system controls are effective and that overall, the program achieves its goal of executing and controlling engineering changes to support the safe and reliable operation of OPG facilities.

2.1.6 Nuclear Safety and Security Culture

The *Nuclear Safety and Security Culture* policy establishes the fundamental principles for OPG employees. It emphasizes the vital importance of nuclear safety and security as the top priority in all activities performed in support of OPG facilities and underscores the value that OPG places in ensuring the highest level of protection for individuals, the environment, and surrounding communities. The policy highlights the organization's firm commitment to prioritizing nuclear safety over any other consideration, including cost, schedule, or production. By adhering to this policy, OPG employees can be confident that they are contributing to a culture of safety and responsibility that is paramount to the success of the organization.

In accordance with the policy, the Chief Nuclear Officer is accountable to the Chief Executive Officer and the Board of Directors to establish a management system that fosters nuclear safety and security as the overriding priority.

OPG's Traits of a Healthy Nuclear Safety and Security Culture are detailed in Figure 5. These eleven (11) traits are incorporated into OPG's organization and administrative procedures starting at the policy level and cascading throughout the *Nuclear Management System*, programs and procedures.





Figure 5: OPG's Traits of a Healthy Nuclear Safety and Security Culture

OPG conducts comprehensive, systematic and rigorous safety culture assessments at least every 5 years in accordance with CNSC REGDOC-2.1.2, *Safety Culture*.

In October 2022, NSS successfully conducted a NSS-wide Nuclear Safety and Security Culture Assessment to identify areas for improvement and areas of strength. The assessment included a staff survey of all NSS employees, as well as an on-site evaluation, including document reviews, staff interviews and observations. The next NSS-wide assessment is scheduled to be completed in Q2 of 2027.

The 2022 assessment focused on perceptions, attitudes and behaviours of the organization and concluded that NSS has a healthy nuclear safety culture, healthy respect for nuclear safety and nuclear safety is not compromised by production priorities. Questioning Attitude was noted as being used well by employees. When facing uncertainty while performing work, most employees do not hesitate to stop, check and adjust before continuing.

This marked NSS's first evaluation since the implementation of CNSC REGDOC-2.1.2, *Safety Culture*, of the Vigilance trait in Nuclear Security. The evaluation determined that NSS has a healthy nuclear security culture. However, OPG recognizes, with the rapid changes occurring in the technology sector, the need for heightened awareness and comprehension of nuclear security, including cyber security.



All results, including areas for additional focus and improvement identified during the assessment, were documented in a self-assessment report and communicated to staff. Improvement opportunities were documented, action plans were developed and progress on actions was tracked.

In 2022, Conexus Nuclear Inc. in collaboration with Canadian Nuclear Utilities, developed a tool to assist in the assessment of the Nuclear Safety and Security Culture. This tool, used for the 2022 NSS-wide assessment, was able to efficiently process and compare all the survey and interview data, significantly accelerate the report generation process and provide a more precise depiction of the culture within OPG facilities.

OPG will continue to conduct NSS assessments within the cycle time specified as per CNSC REGDOC-2.1.2, *Safety Culture*.

In addition to the comprehensive NSS-wide assessment, OPG has instituted a NSS Nuclear Safety and Security Culture Monitoring Panel (NSSCMP) tasked with overseeing the key process indicators that reflect the state of the organization's nuclear safety and security culture. This panel, comprised of the NSS senior leadership team, convenes twice a year to deliberate on the 11 nuclear safety and security culture traits. The first meeting is held with the other monitoring panel leaders from across the fleet in order to share cross functional learnings and shared ideas. In doing so, strengths and potential concerns that merit additional attention by the organization are identified and acted upon. The second meeting is held as a site to status and measure effectiveness of actions.

Twice per year the NSSC Oversight Committee consisting of executive leadership as well as site Senior Managers meets to provide high level, focused oversight, continuous monitoring as well as review of the NSSC trends and potential issues to ensure they are addressed as a fleet. This committee is chaired by the Chief Nuclear Officer.
One component contributing to these discussions is facilitated by the NSSCMP Power App. This online tool, developed in 2020, enables frontline site personnel to evaluate the 44 attributes that constitute a robust Nuclear Safety and Security Culture and provide input directly to the NSSCMP. This approach allows OPG to capture insights from staff that regularly work in and around the waste management facilities, helping to discern faint signals within the organization.

During the current licence term, OPG also implemented the Nuclear Safety and Security Culture Trait of the Week and accompanying App to remind staff about each of the attributes under the Traits on a rotating basis and is used to ensure site alignment with which trait is the focus of any particular week. The App provides the graphic of the week's specific trait as well as the Trait of the Week schedule.

OPG continues to have a comprehensive leadership development program that integrates the Nuclear Safety and Security Culture Traits at all levels. This includes the incorporation of Nuclear Safety Culture into employee orientation, leadership fundamentals training, and continuing leadership training.

OPG has a strong commitment to use external review mechanisms, such as the World Association of Nuclear Operators (WANO) and the NSRB, to ensure that the company maintains high standards of operational performance. An extensive framework of internal oversight, including the Nuclear Executive Committee, Nuclear Safety Oversight Committee and independent assessments conducted by Nuclear Oversight provide a comprehensive and critical evaluation of all activities affecting OPG on an ongoing basis. These internal and external assessment mechanisms are used to identify opportunities for improvement and reinforce the culture of a learning organization.



2.1.7 Records Management

The *Information Management* program sets out standards and procedures for managing OPG's information throughout its entire life-cycle, across all media, to ensure consistent and appropriate usage. This Information Management program applies to all OPG employees, temporary staff, and contractors.

A key objective of the program is to advance electronic, digital, and mobility solutions that provide tools for the efficient and effective capture, modification, distribution, and electronic availability of content at the highest quality. Several improvements have been made to the Information Management tools used by OPG staff, including:

- Asset Suite Upgrade: OPG's enterprise software, Asset Suite, was upgraded to incorporate new features and to maintain full vendor support. An upgrade of our Documentum software, which stores electronic images, is also underway.
- Cyber security has also evolved rapidly and is covered in Section 2.12.3.
- Electronic Submission: A new application allows workers to electronically submit and file their records and documents in Asset Suite/Curator, which has significantly reduced the turnaround time on availability.
- Service Hub: The new Service Hub application automates OPG's client service processes. It incorporates key information management processes to automate Document and Governance support, Records, and Legal Hold activities.
- Automated Access Approvals: The process for security-protected document access is being upgraded to automate approvals and Asset Suite access.
- Records Project Completion: A major records project has been completed, reducing the volume of legacy paper records in physical vaults and scanning quality assurance records for secure and rapid retrieval.

2.1.8 Business Continuity

The *Business Continuity* Program establishes a managed system for business continuity and provides direction related to business and operational continuity, and recovery planning.

The *Business Continuity* program is aligned with OPG's business goals and objectives and ensures that if a disruption occurs or if there is a threat of disruption, critical business and operational processes will continue to be available, or resume to an appropriate level within required time limits. The program is structured to be adaptable to a range of hazards, or a combination of multiple hazards, including Human Health Emergency (e.g., COVID-19 pandemic).

Business Continuity Plans are reviewed and revised every three years, with the most recent revision occurring in 2024. Notable recent improvements focus on response strategies to address issues such as enterprise ransomware events, which continues as an initiative through the Business Continuity program.

OPG has an enterprise-wide Infectious Disease Response procedure which replaces previous pandemic plans. This procedure and the associated Infectious Disease Incident Response Team were utilized effectively as a part of OPG's Emergency Response Organization in response to the COVID-19 pandemic to support safe operations during this period. Following the COVID-19 pandemic, OPG conducted a review of the response to capture lessons learned, such as the inclusion of a formalized contingency staffing plan and specific plan activation and deactivation criteria for identified risks.

To ensure OPG's business continuity, OPG performs Business Impact Analyses and develops Continuity Plans based on those analyses. This involves conducting a risk analysis of the impacts that a temporary



disruption of the processes would have on the organization. Continuity Plans are established to mitigate the identified risks, if necessary.

Pursuant to this process, NSS has conducted a Business Impact Analysis. The activities performed by NSS are all assessed as being capable of being unavailable for more than a week (including several weeks or months) without significant consequences.

2.1.9 Supply and Contractor Management

The *Items and Service Management* program establishes a governing document framework that meets regulatory requirements and ensures effective and efficient planning for and procurement of items and services. The program interfaces with the *Contract Management* program for managing contracts related to contractor services.

The supply chain organization is responsible for providing the necessary services and materials in a timely manner and of the appropriate quality to the WWMF. Supply Chain confirms all the quality aspects for receipted materials based on designated quality requirements. The contract owner confirms quality aspects for services. Vendor quality is maintained through audits, receiving inspections, and vendor oversight and surveillance.

OPG has extensive experience in the use of contractors to engineer, procure and construct new facilities or to implement design improvements to OPG's existing facilities. OPG will leverage OPEX from previous projects such as the Darlington NGS Refurbishment project to optimize how supply chain integrates with contractors. This can include but is not limited to improved terms and conditions, leveraging inventory tracking software to increase visibility on contractor inventory, and controlling costs through consolidating payment structures and applying new incentives and disincentive models. Contractors and suppliers are qualified by OPG Supply Chain Quality Services under a process that ensures each contractor has developed and implemented a management system that meets the applicable requirements outlined in CSA N286-12. OPG assesses a contractor's capability to work at OPG Nuclear facilities through an audit of the contractor's processes, to ensure they can perform the necessary work, with OPG oversight as the licensee at each stage. Once OPG is assured of a contractor's capabilities, they are placed on OPG's approved suppliers list, as approved contractors.

The contractors that OPG uses have experience with the nuclear industry and with OPG. OPG requires that all sub-contractors work under the contractor's quality program, to ensure there is an assurance that the agreed upon quality standards and expectations will be met, regardless of who is performing the work in the field. Field surveillance and verification activities are performed by OPG personnel (Contract Monitoring Officers) to ensure that the quality program requirements are being achieved.

Where possible, OPG will temporarily turn the contractor work area over to the contractor, as a Construction Island (defined project area controlled by contractor/vendor) where the contractor assumes the role of "Constructor" as defined in the *Ontario Occupation Health and Safety Act*. As Constructor, the contractor assumes primary responsibility and liability for conventional safety and environmental safety associated with the contractor work. The contractor produces a site-specific Health and Safety Plan and Environmental Safety Plan, which is accepted by OPG prior to the contractor starting work. Radiation Protection (RP) remains the responsibility of OPG.

Where a construction island is not feasible, OPG maintains the role of Constructor and provides close oversight to the contractor. In this case, all contractor work will be carried out in accordance with OPG processes and procedures. OPG maintains primary responsibility and liability for conventional safety, environmental safety, and RP of the contractor work.



OPG retains the responsibility that the facility remains compliant with the WWMF WFOL. As such, OPG is accountable to the CNSC to provide the required assurances that the health, safety, and security of the public, workers, and environment are protected. This accountability cannot be delegated through contractual arrangements.

OPG's *Construction Management* program applies to the management of individual projects as well as to the integrated management of a group or program of related construction projects, or the total project portfolio at a plant/plant group, or business unit. This program, for nuclear projects, includes compliance with construction specific requirements of CSA N286-12.

OPG continues to make use of vendor companies to Engineer, Procure, and Construct (EPC) modifications that will improve the reliability of WWMF and other OPG facilities. To ensure the use of EPC is successful, OPG is continually working to better define the requirements and level of oversight required for contracted work. The EPC process is managed through a quality assurance program to ensure that OPG's expectations for vendor design and installation quality are met.

2.2 Human Performance Management

NSS has an effective *Human Performance Management* Program that meets or exceeds all applicable regulatory requirements and related objectives to enable effective Human Performance through the implementation of processes that ensure a sufficient number of licensed personnel are in relevant job areas, have the necessary knowledge, skills, procedures and tools in place to safely carry out their duties.

2.2.1 Human Performance Program

The goal of OPG's *Human Performance Program* is to continually reduce the frequency and severity of events through the systematic reduction of human errors and management of defences in pursuit of zero events of consequence.

NSS leaders recognize that an understanding of the role of human performance in safety, supported by leadership and employee behaviours, helps prevent human error-related events. Human performance standards and expected behaviours are defined, established, and incorporated into processes, procedures and training to monitor and correct any organizational deficiencies to minimize human error.

The Human Performance program creates continuous improvement within the organization and reduces the potential for human error through the use of appropriate analysis methods or techniques. The advantages of this are improved safety, quality, and efficiency.

OPG recognizes the importance of human performance and organizational effectiveness, and how they are interconnected. Performance is an important indicator of organizational effectiveness. Error precursors, flawed defences, and latent organizational weaknesses are proactively identified and addressed through self-assessments, internal and external reviews, job site condition reviews, pre-job briefs, observations, safe work plans, trend analysis, program reviews, and performance monitoring. When an event does occur, analysis is performed to identify and correct the contributing and root cause. Organizational factors that influence performance are demonstrated through oversight, observations, and paired Observations & Coaching to ensure alignment on standards.

The primary methods used to monitor performance and identify and mitigate risks include:



1. The *Observation & Coaching (O&C)* Program: Supervisors and managers are required to perform observations and document their findings in an O&C database where the data is rolled up into dashboard. The observations include worker behaviours (including the use of human performance tools), number of and effectiveness of defences, worker proficiency and knowledge, and the execution of work. Observations are documented under specific categories and focus areas to enable trending and filtering by area of interest. Department managers review their observations regularly to monitor for decline in performance or significant gaps and take corrective actions as needed. Individual departments have Staying on Top meetings and forums to review trends and identify potential focus areas. They create action plans as needed to address the trends and identify gaps. The findings are also monitored by the Human Performance Department to identify trends which may require action. NSS sets a standard for an optimal proportion of observations being opportunities for improvement to drive continuous improvement and prevent complacency and stagnation. The dashboard is designed to improve station insights and broaden the lens of observations to work environment and process rather than solely focus on people behaviours.

   Over the past two years, there has been a higher focus on paired O&Cs to support supervisors' development and improvement in supervisors providing coaching and feedback to their crews and is used as one of the leading key performance indicators.

2. The process following human performance events includes the applicable department performing an accountability analysis to determine whether the error was the result of an intentional violation (very rare), a gap in process, or organizational and systemic weaknesses. The insights and actions taken are documented in a crew learning or learning brief and shared with the organization. Event communication and analysis is used to improve identification of systemic issues. This tool facilitates lessons learned from events to prevent event recurrence and foster an open reporting culture. The Human Performance department trends the information for indication of any adverse trends. If an adverse trend is identified, it is investigated further to identify its drivers and develop corrective actions. Crew Learnings are used as an event communication tool to share key learnings.

3. More significant human performance events (such as Department Event Free Day Resets or Site Event Free Day Resets) follow the same process and will also have an evaluation and corrective action plan. Due to the higher significance of these events, the event evaluation and action plans go to the site Corrective Action Review Board for cross-functional challenge and quality review.

4. Facility Focus Plan: The Facility Focus is selected weekly to align the team on potential and real vulnerabilities identified from trending, historic data, and look ahead. These focuses are rolled out to the crews for the purpose of conducting focused observations by supervisors and line managers, as well as guiding discussions during start of shift briefs, and targeted station communications. This places focus on known elevated risks, such as plant status control events at the start of a maintenance window and is flexible to address weaknesses identified through observations.

5. Stop When Unsure and Positive Stop Work initiatives are implemented to ensure that front line workers feel empowered to stop in the face of uncertainty and, as a last line of defense, see themselves as guardians of the standards. In addition to stopping when unsure, a matrix to restart work safely and promptly following a stop has been implemented. Leadership behaviours are aligned to positively recognize the stops using the Values in Acknowledgement (ViA) application, leverage these stops as a leading indicator for event prevention, and provide a structured process to support workers to restart actions. To ensure sustainability and reinforce



positive behaviours, Positive Stops are recognized in the Director of Operations and Maintenance (DOM) employee communications.

The measures used to evaluate overall health, reliability and robustness of the Human Performance program are Site Event Free Day Resets (SEFDR). The SEFDR value is the number of human performance errors that result in events with significant consequences within a given period; it is the industry-wide measure of the effectiveness of the organizational safety and other Human Performance programs. These measures are reviewed at the bi-monthly Human Performance Oversight meeting.

There were zero SEFDR at Western Waste Management Facility in the current licence period.

An OPG fleetwide strategic plan is developed each year in response to human performance trends and events noted in the previous year. The strategic plan is also influenced by industry developments and emerging best practices in sustaining high levels of human performance. The strategic plan focuses on individual, supervisory, and organizational enhancements. By systematically identifying and addressing error-likely situations, reducing organizational vulnerability to errors and events and by questioning or enhancing the integrity of defenses, WWMF is positioned to continually improve organizational effectiveness through the use of best practices, enhanced behaviours and learning.

Supervisors and managers are expected to conduct and record regular observations and checks. Each month there is a designated focus area, which is emphasized by leadership presence in the field. Collected data is consolidated and reviewed at recurring meetings to identify trends and opportunities for improvement, with follow-up actions as needed. Sharing lessons learned across the organization has increased, as demonstrated by a rise in documented learning events compared to previous years. Regular oversight meetings have been established to enhance monitoring and demonstrate the effectiveness of the performance improvement program.

2.2.2 Personnel Training

2.2.2.1 Program and Objectives

OPG's *Training* program for regular staff, contractors, temporary personnel and other staff assigned work at OPG is compliant with CNSC REGDOC-2.2.2, *Personnel Training*, and provides the structure, processes, and tools for defining, developing, implementing, documenting, assessing, and improving the training required to ensure staff have the appropriate knowledge, skill, and attitudes for safe and efficient facility operation.

2.2.2.2 Current Operations and Results

Operations, maintenance, and support staff are trained and qualified under OPG's *Nuclear Training* Program. Staff training and qualifications include initial training, on-the-job training, and evaluation. This training is then maintained by periodic requalification and refresher training as appropriate. The health of training is carefully monitored with a defined program to ensure that there is a Systematic Approach to Training (SAT) foundation for OPG's nuclear training programs upon which it continues to build and improve.

2.2.2.3 Training Plan

A training plan using a systematic approach to training has been developed for every *Major Nuclear Training* Program which identifies the training needed to meet the skill and knowledge requirements of the position.



For tracking, OPG utilizes the Training Information Management System which is a database application that stores and tracks training and qualification information for all staff, including contractors. This system also provides automatic notifications by email for upcoming scheduled training and identifying expiring qualifications to employees and their supervisors.

2.2.2.4 Enhanced Training

The training program is closely linked to the *Human Performance* program. Enhanced or focused training is often utilized in the effort to improve safety and reduce errors. Human performance expectations are built into the training courses.

2.2.2.5 Performance Monitoring

Training performance is tracked using the Training Information Management System to measure completion, scheduling and administration of qualification adherences and the capability of personnel to perform work duties through qualification status. A monthly computer report is generated that is reviewed during monthly Curriculum Review Committee Meetings for each program area, quarterly NSS Training Program Review Committee meetings and NSS Training council meetings to ensure training adherence and performance.

2.2.2.6 Current Learning Culture and Use of Technology

WWMF has established a learning culture where development is encouraged and learning resources are available to promote proficiency and encourage employee development. Improvement initiatives in support of continued operational excellence include:

- The creation of Proficiency Heat Maps and Individual Development.
- Adaptive Learning was piloted in 2021 in the Nuclear General Employee Training program and is now used in select high demand courses. It provides the right training to the right people based on previous experience, training and education.
- Micro-learning through Video Learning-On-Demand library with over 550 videos is available to refresh skills.
- All Leaders are trained in Facilitative Leadership Techniques to enable learning and development.

2.2.2.7 Future Plans and Improvements

The health of training is carefully monitored with a defined program to ensure that there is a Systematic Approach to Training foundation for OPG's *Major Nuclear Training* Programs.

Improvements to the training programs are driven by feedback from internal and external OPEX, Station Condition Records, Curriculum Review Committees, self-assessments, CNSC inspections, audit reports, and in response to the training committee's needs.

The program will continue to ensure OPG staff have the appropriate knowledge, skill, and attitudes for safe and efficient plant operation.

2.2.3 Work Organization and Job Design

To ensure operational efficiency and compliance with licensing requirements, NSS has developed a set of Training and Qualification Descriptions based on work group, which cover core qualifications to the discipline, and general training requirements such as hoisting and rigging, safeguards, supervision roles, radiation protection, security clearance, code of business conduct, and site-specific orientation.



WWMF manages staffing levels through staffing plans which are developed to ensure sufficient personnel are available to meet the business and operational objectives carried out under the WWMF WFOL.

OPG does not permit tasks to be completed by unqualified personnel. The staffing complement is reviewed regularly through business planning. The staffing model is in place to allow flexibility in workforce allocation, support succession planning, and support ongoing production while adapting to project demands. By aligning staffing levels with business objectives, OPG ensures that WWMF operates efficiently without compromising safety or regulatory commitments.

2.2.4 Fitness for Duty

The WWMF maintains robust procedures and policies to ensure that all staff members are fit for duty. OPG prioritizes the safety and well-being of the employees and recognizes the importance of their physical and mental readiness to perform their roles effectively. To achieve this, WWMF follows procedures and policies to ensure that all staff members are fit for duty, which comply with:

- CNSC REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue*
- CNSC REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use, Version 3 (2021)*

OPG's *Fitness for Duty: Policy on Managing Alcohol and Drug Use* identifies the standards for addressing fitness for duty as it applies to alcohol and drug use and possession at all times while workers are engaged in company business, when on company premises and worksites, and/or when operating vehicles and equipment in the course of their duties for OPG. Fitness for duty is addressed through initial and continuing training elements that focus on explaining company policies, expectations, and various employee support programs available.

Other training includes, but not limited to:

- The Continuous Behaviour Observation Program trains supervisors and managers to recognize and respond to behaviours that could impact worker performance and safety.
- Training is conducted for the Fitness for Duty: Policy of Managing Alcohol and Drug Use program through 3 computer-based training courses:
    - Nuclear General Employee Training (for all site staff), with re-qualification every 2 years.
    - Fitness For Duty – Managing Alcohol and Drug use for workers.
    - Fitness For Duty – Managing Alcohol and Drug use for supervisors.

Procedures are also in place to monitor and control the Hours of Work (HoW) for Nuclear Broad Population and Safety Sensitive employees to meet the requirements set out by REGDOC-2.2.4, Ontario Employment Standards Act and Collective Agreement provisions. It includes guidance and instructions on:

- Hours of work (Including Regulatory limits, shift schedules and special exceptions).
- Monitoring requirements for workers.
- Reporting requirements.
- Management of worker fatigue.

The process requires that employees are aware of their time limitations, track work hours and promptly notify the first line manager in advance of a potential violation. Supervisors are also required to ensure that their employees are aware of their prescribed limit and are also responsible for monitoring their employees' HoW.



2.3 Operating Performance

OPG's NSS is responsible for the life cycle management of radioactive waste for OPG-owned facilities and has direct responsibility for transportation, processing, and interim storage until final disposal of the radioactive waste. The radioactive waste long term disposal strategy is described in Section 2.11.4.

WWMF has an effective Operations Program that meets or exceeds all applicable regulatory requirements and related objectives. The program ensures that the operation of the WWMF is safe and secure, with adequate regard for health, safety, security, radiation and environmental protection, and international obligations.

NSS operates and manages the WWMF in accordance with the facility licensing basis and applicable standards. NSS has direct responsibility for safe handling, movement, processing, storage and monitoring of all nuclear waste in its care. Procedures are utilized for all aspects of the operations, including safety related activities, plant and equipment operation and maintenance, work authorizations, equipment labelling, facility access, and plant status.

2.3.1 Conduct of Licensed Activity

The *Nuclear Waste Management* program implements a series of standards and procedures to ensure that the WWMF is operated safely and reliably. The program establishes safe, uniform, and efficient operating practices and processes that provide nuclear professionals with the ability to ensure the facility is operated in such a manner that the WFOL, the *Operating Policies and Principles*, and other applicable regulations and standards are followed. It also supports the alignment and prioritization of equipment maintenance in a manner that protects the health and safety of workers, the public and the environment.

2.3.1.1 Conduct of Operations

Operations practices at the WWMF are implemented by specific WWMF governance and select nuclear procedures for the safe and reliable operation of its waste facilities.

The operating limits and conditions for the WWMF are identified in the *Western Waste Management Facility Safety Report* and the *Operating Policies and Principles* for the WWMF.

2.3.1.2 Work Protection

The *Work Protection* program describes the requirements that are in place within OPG Nuclear to ensure worker safety where work on equipment requires isolating and de-energizing equipment.

Worker safety is achieved through the effective application of a work protection standard and procedures to ensure physical and administrative barriers are established between the energy source and the worker. Work Protection establishes safe conditions for work by creating a Safe Work Area to ensure complete isolation and de-energization of isolated equipment.

Operations Managers own the Work Protection program at the WWMF and provide oversight through the NSS Local Work Protection Review Board, which is a monthly forum that provides oversight of Work Protection performance at the WWMF and it is an opportunity to raise any work protection issues at the NSS sites.



2.3.1.3 Current Operations

Classifications of Radioactive Waste

During the operation of a nuclear facility, waste is produced much like any other industry. Some of this waste becomes radioactive and must be handled using special procedures. OPG categorizes the radioactive waste into low, intermediate and high-level waste.

- **Low-Level Radioactive Waste (LLW)** is radioactive waste having a dose rate less than 10 mSv/h (1 rem/h) at 30 cm. LLW consists of minimally radioactive material that has become contaminated during routine cleanup and maintenance and includes (but is not limited to) lightly contaminated metal objects and parts, incinerator ash, insulation, drummed wastes, solidified liquids and desiccant. These items make up approximately 95% of the total non-fuel waste volume. LLW is received at the WVRB at the WWMF where it is either processed through incineration or compaction to reduce its volume, or it is stored as is.
- **Intermediate-Level Radioactive Waste (ILW)** is radioactive waste having a dose rate greater than or equal to 10 mSv/h (1 rem/h) at 30 cm. ILW consists primarily of used reactor core components, ion exchange columns, resins, and filters. ILW is more radioactive than LLW and requires shielding to protect workers during handling. This waste makes up approximately 5% of the total volume of non-fuel waste produced by the NGSs.
- **High Level Radioactive Waste** (also referred to as irradiated fuel or used fuel) is Canada Deuterium Uranium (CANDU) fuel, in the form of a fuel bundle, that was irradiated in a reactor core. It is stored at the nuclear station in irradiated fuel bays for a period of typically ten years or more and then transferred into dry storage containers (DSCs) for interim storage at the Used Fuel Dry Storage Facility (UFDSF).

Management of Low and Intermediate Level Waste

Figure 6 shows the flow of radioactive waste starting from generation at a nuclear facility through packaging and transportation, processing and interim storage at WWMF, to ultimate disposal. This submission pertains only to the section related to the processing and interim storage under the WWMF Waste Facility Operating Licence. The areas shaded in gray: Packaging and Transportation, and Disposal are briefly described here for context, but are outside the scope of this licence renewal.



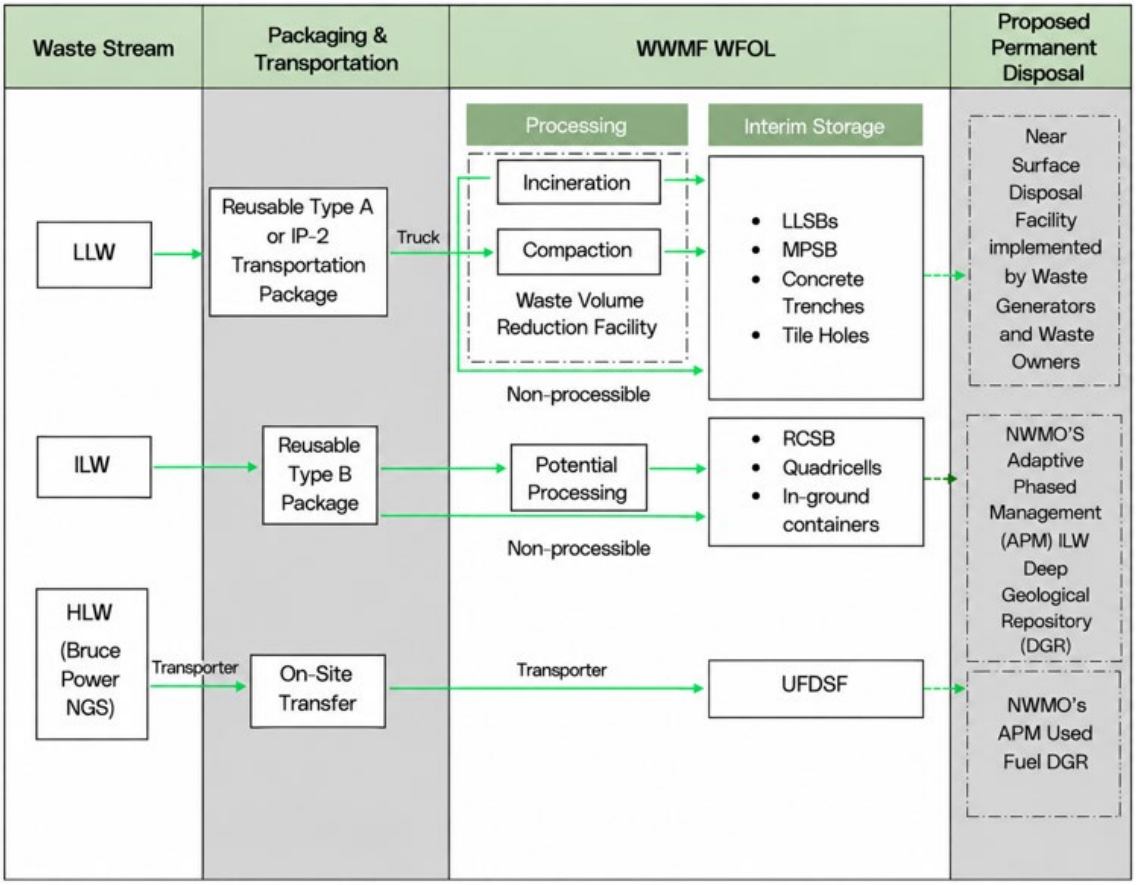


Figure 6: Management of L&ILW and Used Fuel

Generation of L&ILW

During normal operations involving radioactive work at the nuclear facilities, solid waste (e.g. protective clothing, cleaning material, bags, containers, etc.) is generated which becomes contaminated with radionuclides. L&ILW is collected from waste receptacles throughout the stations. The Active Waste Program provides three receptacles for this waste: Active, Active Metal and Likely Clean.

Active waste is checked for radioactivity; the radioactivity information is then transferred onto a Radioactive Material Tag, which is attached the radioactive waste bag. The radioactive waste bag is then segregated either into an incinerable, compactable or non-processible shipping container, then shipped to WWMF for processing.

Active metal bags are checked for radioactivity; the radioactivity information is then transferred onto a Radioactive Material Tag, which is attached to the bag or item. The bag or item is then placed into a non-processible radioactive shipping container and then shipped to WWMF for storage.

The Likely Clean waste is monitored for radioactivity. If it is determined that the waste is radioactive, it is monitored and transported off-site as active waste for processing at the WWMF. In accordance with the *Nuclear Substance and Radiation Devices Regulations,* non-radioactive or radioactive material below the acceptance criteria is sent for disposal at designated landfills.



Processing of L&ILW at WWMF

Processing radioactive waste is a licensed activity under the WWMF licence. LLW that is generated at the nuclear facilities is segregated at the source into processible (for incineration or compaction) or non-processible waste prior to being transported to the WWMF. All incoming L&ILW received at the WWMF must meet the waste acceptance criteria.

For processible LLW, volume reduction at the WWMF involves processing waste into a smaller volume, either through incineration or compaction, to reduce the handling and storage requirements, and to minimize future disposal needs. Approximately 60% of all LLW sent to the WWMF is either incinerated or compacted at the WVRB. Non-processible LLW received at the WWMF is further sorted prior to it being sent to an LLSB for interim storage.

ILW is packaged in Type B transportation packages or disposal ready waste containers, transported to WWMF and sent directly to an above ground storage building, or an in-ground structure for interim storage.

The following improvements to our waste storage and processing activities were achieved over the licence period:

- Remediation of Trench 3-2 - Coating repairs were made to trench 3-2 during the fall of 2017 to prevent water ingress. Drums were removed from the trench and placed in drum bins for storage in LLSBs.
- Completion of the Linear Heat Detection Upgrade in LLSBs - Linear Heat Detection (LHD) is used in the LLSBs for fire detection. The upgrade to LHD provided higher reliability due to its wider operating range for environmental conditions.
- Fire Hazard Assessment recommendations were implemented, including
    - LLSBs - waste oil storage be limited to one of the LLSBs (#1, 2, 3, 9 or 10) on the west side and one of the LLSBs (#11, 12, 13, or 14) on the east side. This minimizes the potential fire damage and fire spread to adjacent LLSBs; and
    - WVRB/TPMB/WUFDSF (SB 1-6) - only the Transport and Work Equipment (TWE) associated with the operation of each building be stored within the building. Limiting stored TWE to equipment required for building operations minimizes unnecessary fire hazards introduced by vehicles such as pickup trucks and utility vehicles.
- LLW Sorting and Repackaging Program was formalized from the 2014 Pilot project.
- Western Clean Energy Sorting and Recycling facility was placed in-service in 2023 which efficiently sorts waste allowing the WWMF to redirect waste for more efficient volume reduction.
- Completion of the Waste Tracking System Upgrade – The Integrated Waste Tracking System, which is used to track all low and intermediate level waste received and stored at the WWMF, was replaced by eMWaste in 2017.

2.3.1.4 Incinerator Performance

In 2018, the incinerator underwent a refurbishment project that installed 14 modifications to introduce redundancy for ease of maintenance, improve availability, and resolve known system deficiencies. Following the completion of these 14 modifications, the annual volume reduction nearly doubled while maintaining compliance with applicable emission limits demonstrated through source testing.

Throughout this licence period, priority has been placed on aging management and equipment reliability. Critical components were replaced including the baghouse and the refractory in the primary and secondary combustion chambers. Inspection hatches were installed on the spray cooler and baghouse to



facilitate improved access for inspections. Additional performance improvement initiatives have been undertaken, including the procurement of critical spares in order to reduce forced production loss.

Air emissions from the incinerator are continuously monitored to ensure optimal waste combustion and emissions treatment is being achieved. The entire continuous emission monitoring system was replaced during an incinerator outage that lasted from March 2018 to February 2019; the new continuous emission monitoring system was successfully commissioned between April and June 2019. Stack testing is completed during the licence period as prescribed.

2.3.1.5 Management of High Level (Used Fuel) Waste

Used Fuel Dry Storage Processing

Figure 7 shows the structure of a DSC. The processing of a DSC begins with the preparation of new DSCs at the DSC processing building and ends with the storage of loaded, hermetically sealed DSCs in a Used Fuel Dry Storage Building (UFDSB).

The process begins with the receipt and preparation of new, empty DSCs at the DSC processing building, followed by their transfer to Bruce Power NGS for loading with used fuel. After loading, decontamination, draining, and initial drying at Bruce Power NGS, the loaded DSCs are surveyed to ensure compliance with OPG's waste acceptance criteria, then transported via secure onsite vehicles to the WWMF. At WWMF, the DSCs undergo further processing, including lid seal welding, weld inspections, final vacuum drying, helium backfilling, leak testing, decontamination, and paint touch-up. Once all inspections are completed, the DSCs are labeled, sealed, and finally moved to a designated storage location within the UFDSBs for interim storage. The steps are summarized in Figure 8.



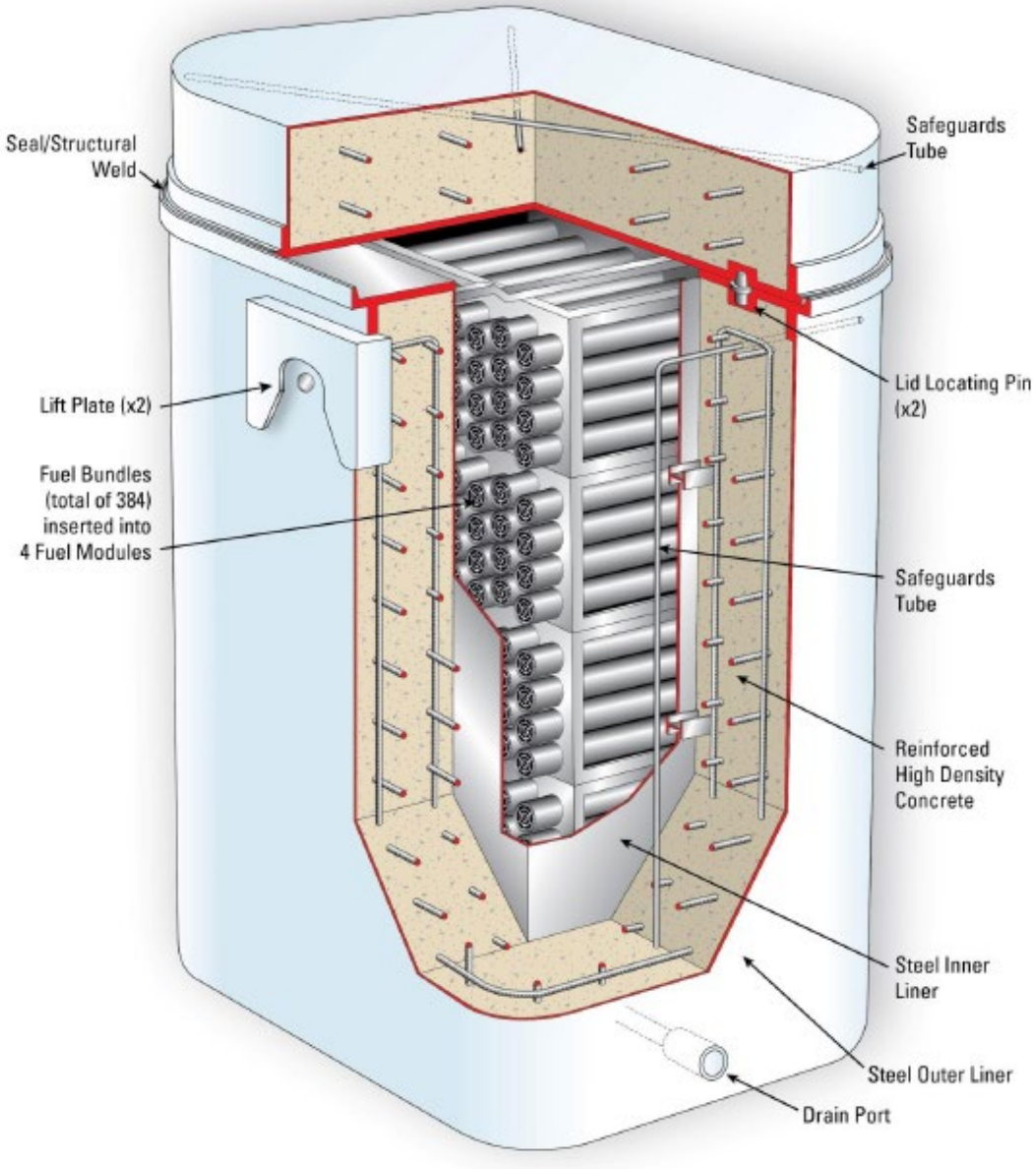


Figure 7: Dry Storage Container (DSC)



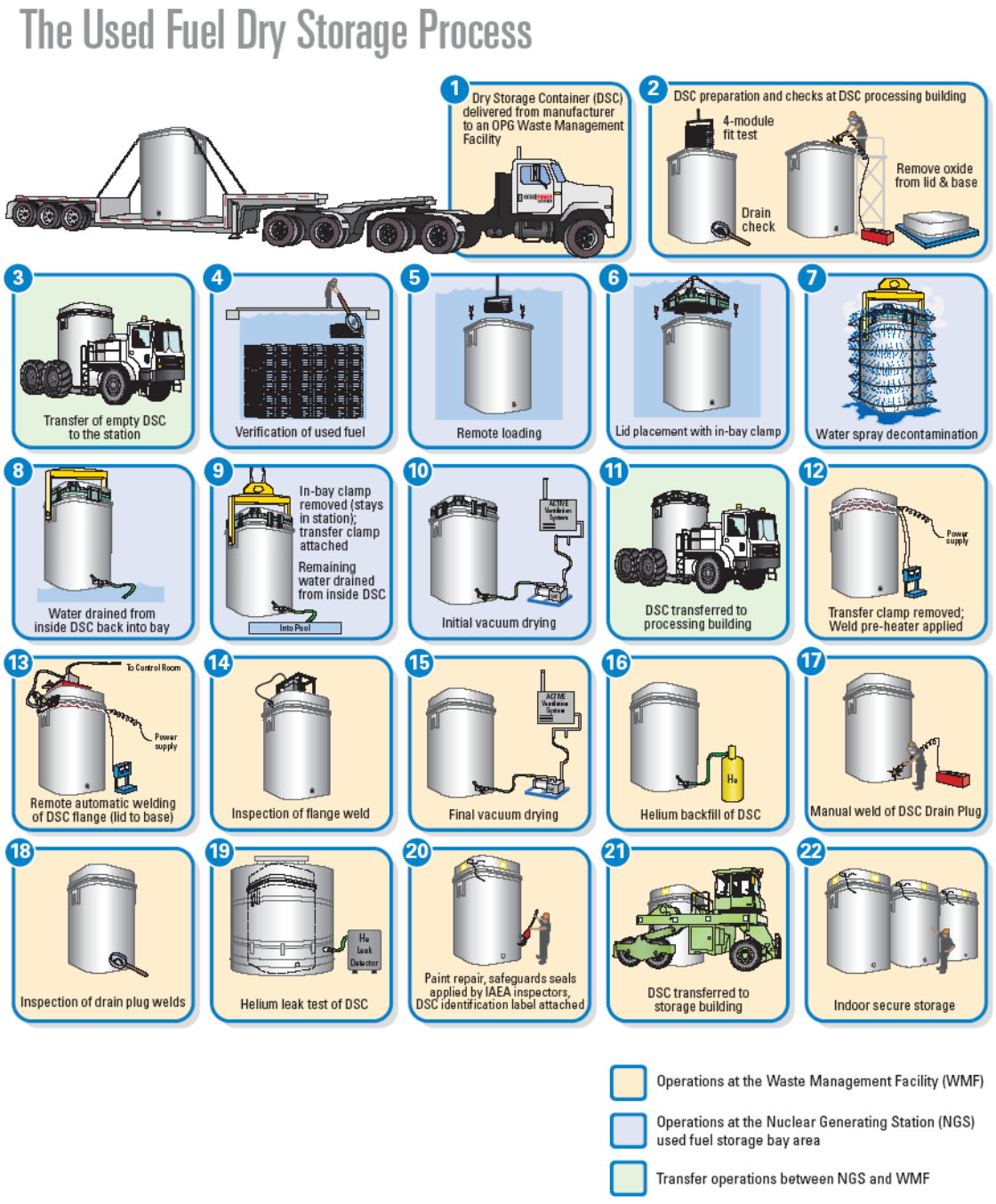


Figure 8: Used Fuel Dry Storage Process

To ensure adequate space in the irradiated fuel bays at the Bruce Power NGS, the UFDSF at WWMF operates safely and reliably to transfer, process, and store DSCs from the Bruce Power NGS in a timely manner until a long-term management facility becomes available.



2.3.1.6 Current Operations for Used Fuel

In this licence period, the safety performance of the WWMF used fuel processing and storage facilities has been excellent while meeting all production targets. Table 13 shows the number of DSCs received at WWMF from 2017 to 2025.

The following results were achieved over the current licence period:

- The installation of new updated security equipment.
- There are two new generation DSC Transporter vehicles (the Gen IV) which are in operation at WWMF.
- UFDSB 5 and 6 were placed into service.

Table 13: Number of DSCs Received at WWMF this Licence Period

Year	Number of DSCs Received at WWMF 2017-2025
2017	112
2018	106
2019	108
2020	110
2021	115
2022	115
2023	113
2024	115
2025	115
TOTAL	1009

2.3.1.7 Planned Improvements

The following future improvements are planned for WWMF:

- Construction of UFDSB 7 and UFDSB 8, approved in the current licence, with an estimated nominal capacity of 1000 DSCs and an anticipated in-service date of 2029.
- Construction of IC-18 Batch 7, approved in the current licence, consisting of 54 IC-18s, planned to be in-service date in 2027.
- Change in DSC lid to base welding process to gain efficiencies.
- Development and procurement of a new DSC welding machine that utilizes new technology to assist with efficiencies and parts obsolescence.
- Large Object Processing as described in Section 1.5.



- Incinerator upgrades, including flue gas ducting section replacement, spray cooler system upgrades, programmable logic controller power supply module replacement and stack replacement.

2.3.2 Procedures

Clear and accurate procedures are essential for safe operation and for efficient and adequate response to changing conditions. WWMF's operating procedures are developed and revised using defined processes to ensure compliance with operational limits and regulatory requirements, incorporating human performance and error-prevention tools such as second-party verification and place-keeping.

2.3.3 Reporting and Trending

The implementing processes under OPG's *Performance Improvement* program, as described in Section 2.1.3, allow for the prompt identification of adverse conditions, proactive identification and resolution of potential issues, or opportunities for improvement. Non-conformances, deficiencies, and adverse conditions must be promptly identified to prevent impact on plant operations, personnel, nuclear safety, the environment, or equipment and component reliability. These processes ensure that problems are corrected or dispositioned with a level of rigour commensurate with their risk significance. For those problems deemed to be of higher significance or systemic in nature, these processes ensure appropriate levels of management are notified, causes identified, actions taken to minimize or prevent recurrence, action completion and effectiveness verified, and lessons learned communicated.

Adverse conditions are reported via Station Condition Records (SCRs). Each SCR is reviewed and dispositioned by an SCR coordinator before going through a screening committee and a management review committee to ensure the disposition was accurate and complete. Most of the SCRs generated are determined to be not significant on their own and are dispositioned for trending, closed out to another SCR or determined to be non events (entered in error, a duplicate or does not represent an adverse condition at WWMF). The remainder of the SCRs require an evaluation of known facts or an investigation to determine the cause and related corrective action(s) that will prevent or reduce the frequency of recurrence of the adverse condition(s).

Root cause and apparent cause investigations are conducted for higher significance events to improve plant reliability and human performance at WWMF. Trending analysis is conducted to identify trends in performance at a lower level before they become a more significant issue, and identified adverse trends are addressed by initiating an SCR and corrected as required through the corrective action program.

Regulatory reporting

OPG provides scheduled and unscheduled reports for the WWMF to CNSC staff in accordance with CNSC REGDOC-3.1.2, *Reporting Requirements, Volume 1: Non-Power Reactor Class I Facilities and Uranium Mines and Mills*. Throughout the current licence period, OPG submitted all required scheduled and unscheduled reports, and there were no significant events that affected the conduct of licensed activities at WWMF.



2.4 Safety Analysis

OPG Nuclear Waste has an effective *Safety Analysis* program which meets or exceeds all applicable regulatory requirements and related objectives. The program ensures the maintenance of the safety analysis that supports the overall safety case for the facility.

OPG has implemented and maintains a nuclear waste facility safety analysis program that complies with CNSC REGDOC-2.4.4, *Safety Analysis for Class 1B Nuclear Facilities*. The safety analysis is governed by the OPG *Reactor Safety Program* which establishes the organizational responsibilities and key program elements for the management of issues related to nuclear safety analysis. Specifically, as it relates to nuclear waste management, the program provides a basis for the performance of nuclear safety analysis and outlines the governing documents that define the processes associated with maintaining the safety analysis and safety reports supporting the operation of nuclear waste management facilities.

To assess the overall safety of the operation of WWMF storage buildings and structures, deterministic safety analyses are used. Computational tools are used for the dose consequence calculations when required. Bounding (worst-case) accident scenarios are conservatively identified, and the results of off-site dose consequence calculations are then compared against the regulatory dose limits.

Results of the safety analysis are presented in each waste management facility safety report, which also provides an overview of the facility design and operations. The current WWMF safety report was submitted to CNSC staff in 2022. The WWMF safety report demonstrates that dose rates and emissions from the WWMF under normal operations and under credible abnormal events are acceptable, and operation of the facility continues to pose an acceptably low risk to the public, the workers, and the environment. The next WWMF Safety Report update will be in 2027 and will incorporate CNSC REGDOC-2.4.4, *Safety Analysis for Class 1B Nuclear Facilities* requirements.

2.4.1 Criticality

Criticality refers to the potential for nuclear fuel to achieve a self-sustaining fission chain reaction. Criticality assessments completed for the used fuel stored in DSCs at the WWMF are consistent with expectations for irradiated natural uranium fuel. The analyses and assessments have demonstrated significant sub-criticality margin with no likelihood for criticality of used CANDU fuel. Used fuel stored in DSCs cannot achieve criticality under normal conditions or under any postulated credible abnormal event at the WWMF.

2.4.2 Safety Assessment Results for WWMF Structures

2.4.2.1 Low and Intermediate Waste Structures – Safety Assessment of Normal Operating Conditions

Waste structures are designed and constructed such that any dose at the exterior of structures, at facility fences and at site boundaries fall within acceptable limits. Shielding analysis is performed to estimate dose rates outside of waste storage structures to confirm operation of the structures will be acceptable. Routine emissions are monitored and shown to be within facility limits, resulting in minimal doses to the public, well below regulatory limits.



2.4.2.2 Low and Intermediate Waste Structures – Safety Assessment of Credible Abnormal Events

The worst case bounding credible abnormal events are identified for each storage structure type, specific to the activity or type of waste stored in the facility. A seismic event that impacts all waste structures has been identified as the worst case credible abnormal event that could lead to the maximum radioactive release from the site. For all credible abnormal events considered, radiation doses to both workers and the public are predicted to be within acceptance criteria and well below the regulatory dose limits.

2.4.2.3 Used Fuel Dry Storage – Safety Assessment of Normal Operating Conditions

Shielding analysis is performed to predict dose rates from individual DSCs, both inside and outside of the used fuel dry storage buildings. Dose rates external to the buildings are determined for workers on site and for members of the public off site. In all cases, assuming storage buildings are filled to capacity, the predicted dose rates are well below the regulatory limits. Predicted dose at the site boundary and for the nearest resident are estimated to be below the acceptance criteria and accordingly are well below the regulatory public dose limit of 1 mSv/year.

2.4.2.4 Used Fuel Dry Storage – Safety Assessment of Credible Abnormal Events

The assessment of credible abnormal events considered the following main stages of the out-of-station used fuel dry storage operations:

- On-site DSC transfer operations;
- Operations inside the DSC processing building; and
- DSC Storage.

Each potential event was screened to establish if it could result in any radiological impact to the public and/or workers. Common-mode incidents such as seismic events, flooding, etc. were also considered. Design provisions and procedural measures that could prevent the event or mitigate its consequences were also considered/evaluated.

Despite being very unlikely, the bounding credible event for on-site transfer, processing, and storage of DSCs (e.g. welding, inspecting, testing, sealing and moving to storage was identified to be a drop of the DSC, with 100% fuel sheath failures and subsequent release of radionuclides. The total doses to the public at the Bruce site boundary (750m from WWMF) and the occupational doses due to this postulated event were assessed to be acceptable and well below the regulatory dose limits.

2.4.3 Future Plans and Improvements

The methodology for performing safety assessments is routinely assessed and updated for the methodology to be as up-to-date and accurate as possible.

2.4.3.1 Support for Additional Structures

For additional structures already approved in the current WWMF WFOL, a safety analysis will be completed prior to placing the structures into service demonstrating that the design and operation of these structures will not result in consequences that exceed the acceptance criteria listed in the facility Safety Report.



2.4.3.2 Safety Analysis Update

Facility safety analyses are reviewed and updated as necessary prior to safety report updates, to confirm that facility operations will continue to operate safely and will not result in any unacceptable radiological consequences to the health and safety of the workers and the public, under normal operating conditions and under credible abnormal events.

2.5 Physical Design

The WWMF has an effective *Design Management* program to maintain its design basis which meets or exceeds all applicable regulatory requirements and related objectives. The program ensures that structures, systems, components and software meet and maintain their design basis given new information arising over time and taking changes in the external environment into account.

2.5.1 Design Governance

OPG's *Design Management* program satisfies the requirements of CSA N286-12, *Management system requirements for nuclear facilities*. The program ensures that SSCs of facilities operate safely, reliably, and effectively, and are consistent with the design basis, safety analysis and quality control measures. The program also provides assurance that all design activities and their resulting documentation are controlled in a manner consistent with the WWMF's licensing basis.

The *Design Management* program sets the overall requirement for execution and control of activities that provide design support and documentation for the nuclear facility. This program complies with CSA N286-12 and CSA N285.0-08 (updates No. 1 and 2; and Annex N of N285.0-12 and Update No. 1), *General Requirements for Pressure-Retaining Systems and Components in CANDU Nuclear Power Plant*s. The program defines the minimum set of documentation that identifies and describes the design basis, design outputs, design processes, and the procurement engineering process ensuring implementation and maintenance of the physical nuclear facilities to meet the design basis requirements.

The *Engineering Change Control (ECC)* program sets the overall requirement for engineering changes to the nuclear facility. The ECC program ensures design changes to each OPG Nuclear facility (including SSCs; software; and engineered tooling) are planned, designed, installed, commissioned, and placed into or removed from service such that the facility configuration is managed and remains within the Safe Operating Envelope or safety and design envelope, design basis, and licensing basis. This program ensures all steps of engineering changes are properly assessed, analyzed, evaluated, controlled, and documented.

OPG's *Configuration Management* standard ensures that OPG nuclear facilities are operated, maintained, and modified in conformance with their design basis and licensing basis. During all life-cycle phases of the ECC process, it is ensured that constructability, operability, maintainability, and safety issues are identified and incorporated into the design requirements of nuclear design projects and engineering changes.

The *Software* program identifies the process and overall requirements for an effective software program. Modifications and design changes involving software comply with CSA N286.7-16, *Quality assurance of analytical, scientific, and design computer programs for nuclear power plants* and ensures software changes support safe and efficient plant operation. The software program identifies the processes and overall requirements for classification of software and identifies governing standards for each software



classification defining the requirements for software development, maintenance, procurement, qualification, use and retirement.

Any engineering changes which may affect the IAEA monitoring systems or equipment is reviewed to ensure the changes do not impact compliance with the safeguards agreements. This includes but is not limited to, potential obstruction of fields of view for the IAEA equipment or impact to the power supplies for IAEA equipment.

NSS has adopted the standard OPG Nuclear fleet metrics for physical design. The current suite of metrics includes measures of the health of the ECC process within NSS. The quality of design products is monitored using recorded verification results and cold-body design review boards within NSS. A monthly report card is used to record and track performance and to ensure that corrective actions are being taken to address any weaknesses or deficiencies that are observed.

The Nuclear Waste Engineering and Design Authority Senior Manager from the NSS Design Engineering department oversees the physical design SCA requirements and maintains the facility design basis to ensure that systems remain in compliance with applicable standards, codes and licence conditions. As the Design Authority for NSS, this department specifies design requirements and authorizes design modifications to SSCs to ensure that all changes are within the Safe Operating Envelope, design basis, and licence conditions as per the WFOL.

2.5.2 Site Characterization and Facility Design

The WWMF site is described in Section 1.1.

The description of the systems and equipment at WWMF, including the system objectives, functional and performance requirements, interfacing systems, and design and operating conditions are provided in documents such as the:

- Safety Report.
- Design Manuals.
- System Design drawings.

2.5.3 Structure Design

2.5.3.1 Facilities for Processing LLW at WWMF

The WWMF has facilities for processing LLW into smaller volumes, through either incineration or compaction, to reduce the handling and storage requirements, and to minimize future disposal needs. The *Waste Acceptance Criteria* specifies the types of waste that can be incinerated or compacted at the WWMF.

Incinerable waste is volume reduced in a controlled air incinerator. The incinerator provides a high-volume reduction factor, on average 37:1, and produces a stable waste material in the form of ash. The ash is discharged into 2.5 m^3 rectangular metal containers, and the ash-filled containers are then transferred to an LLSB for storage on site.

A diagram of the radioactive waste incinerator is provided in Figure 9**.** The high temperature exhaust gas stream from the incinerator is cooled using a spray cooler. Powdered hydrated lime is injected into the cooled exhaust gas stream to neutralize acid gases such as hydrogen chloride and sulphur dioxide. Activated carbon injected into the gas stream absorbs heavy metals and the unburned organic



compounds to transfer them from gas phase to solid phase. The baghouse particulate filtration system then removes all solid phase materials from the gas stream. A small amount of ash is collected in the incinerator's baghouse filter which is collected in a separate ash bin that is sent to an LLSB for storage on site.



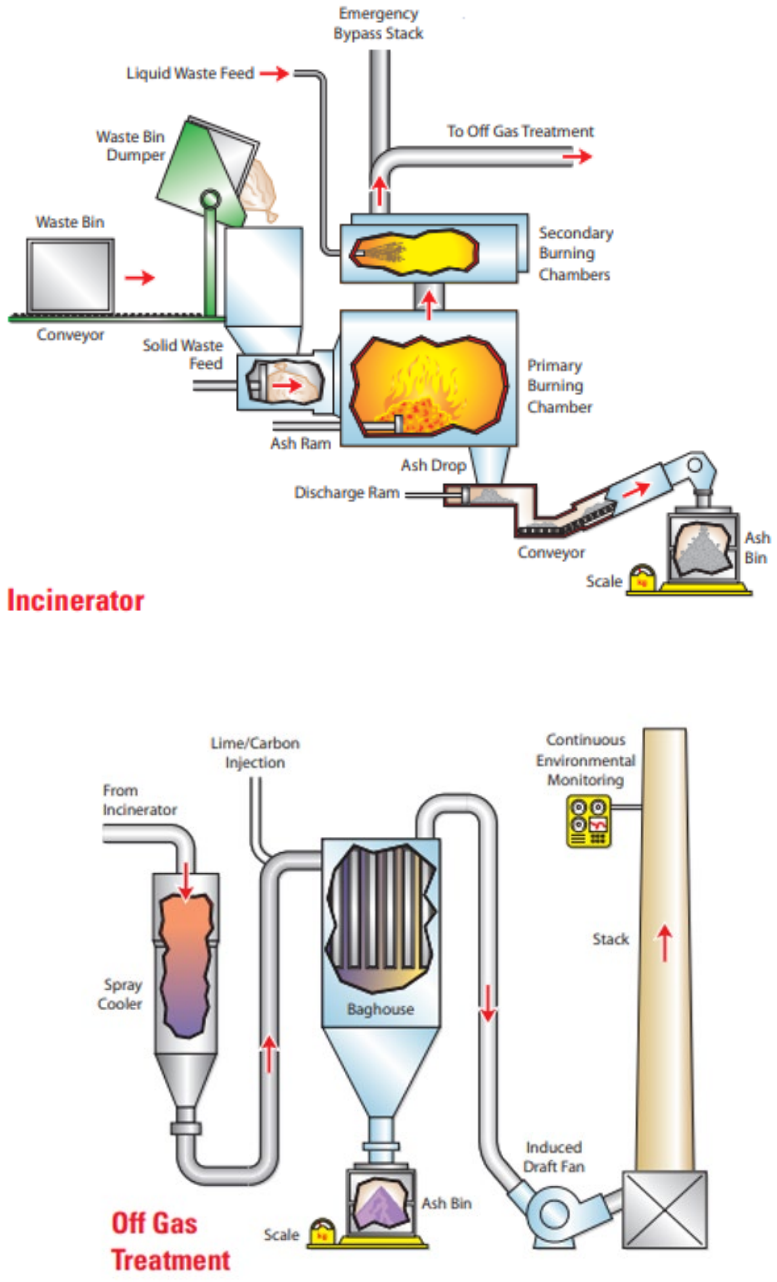


Figure 9: Radioactive Waste Incinerator

Air emissions from the incinerator are continuously monitored to ensure optimal waste combustion and emissions treatment is being achieved. The incinerator currently operates under an Ontario Ministry of Environment, Conservation and Parks Environmental Compliance Approval.

The box compactor compresses dry radioactive waste into stackable steel boxes that are approximately 2.5 m^3 in volume. The compressed waste is retained in the steel box by integral anti-spring back devices



and a steel lid. This compaction process produces a net volume reduction factor of approximately 5:1. These stackable boxes are then transferred to an LLSB for storage on site. The box compactor has an internal ventilation system with filtered exhaust to the building active ventilation system, which is monitored for tritium, particulates and radioiodine.

Approximately 60% of all LLW received at the WWMF is either incinerated or compacted at the WWMF. Non-processible LLW received at the WWMF is further sorted prior to it being sent to an LLSB for interim storage. All storage containers for L&ILW are monitored and assigned unique bar-codes for waste tracking purposes.

2.5.3.2 Storage Facilities for L&ILW at WWMF

Since the WWMF began operation in 1974, there has been an evolution in storage structure designs to incorporate a smaller footprint, better efficiency and more robust designs. Initially all waste was placed in small capacity in-ground structures. The modular nature of the storage structures incorporated improvements in the design and construction techniques to be included in each evolution. All storage structures are designed to match the physical and radiological characteristics of the waste being stored in them.

2.5.3.3 Above-Ground Storage Buildings

As per Table 1 and as shown in Figure 3, there are 17 above-ground storage buildings for L&ILW located at WWMF, fourteen are used to accommodate low level waste, one is for steam generators from Bruce Power NGS, and two are for retube components from Bruce Power NGS.

2.5.3.4 Existing Low Level Storage Buildings

An above-ground LLSB is a warehouse-like building used to store LLW with contact radiation fields less than 10 mSv/h at 30 cm (Figure 10 and Figure 11). The approximate building dimensions are 50 m long by 30 m wide by 8 m high, and each building can store between 7,000 – 7,050 m^3 of waste.

LLSBs are constructed in accordance to the *National Building Code of Canada* and the *National Fire Code of Canada* in accordance with the licence requirements. They are constructed using prefabricated, pre-stressed concrete panels, which are joined with an overlap to prevent any radiation streaming between the panels. The panels can be removed from the structure to allow for waste retrieval and dismantling of the storage structure. The concrete roofs of the LLSBs vary in thickness to meet radiation shielding requirements. The LLSB floor is constructed of poured concrete (Figure 12).

The buildings are unheated and are provided with a gaseous carbon dioxide fire extinguishing or suppression system, fire detection system and internal fixed lighting. A geomembrane liner and water collection system is also provided directly below the LLSBs for floor and sub-floor drainage. The drainage lines are directed to a sump where water can be collected, sampled and, if necessary, sent for treatment at an active liquid waste treatment facility prior to discharge.

The freestanding stackable steel containers for LLW are stacked to heights of 6 m (4 to 6 containers high) inside the LLSBs.

A Liquid Waste Area is constructed within an LLSB to facilitate the storage of liquid waste. The Liquid Waste Area is isolated by way of a curbed dyke, and the dimensions can be altered to suit the volume of liquid waste that is stored. The curbed area is sealed with a plastic liner to contain any liquid that may leak or spill. Liquid waste such as waste oil is stored in suitable containers until it is incinerated.



Figure 10: Low Level Storage Buildings

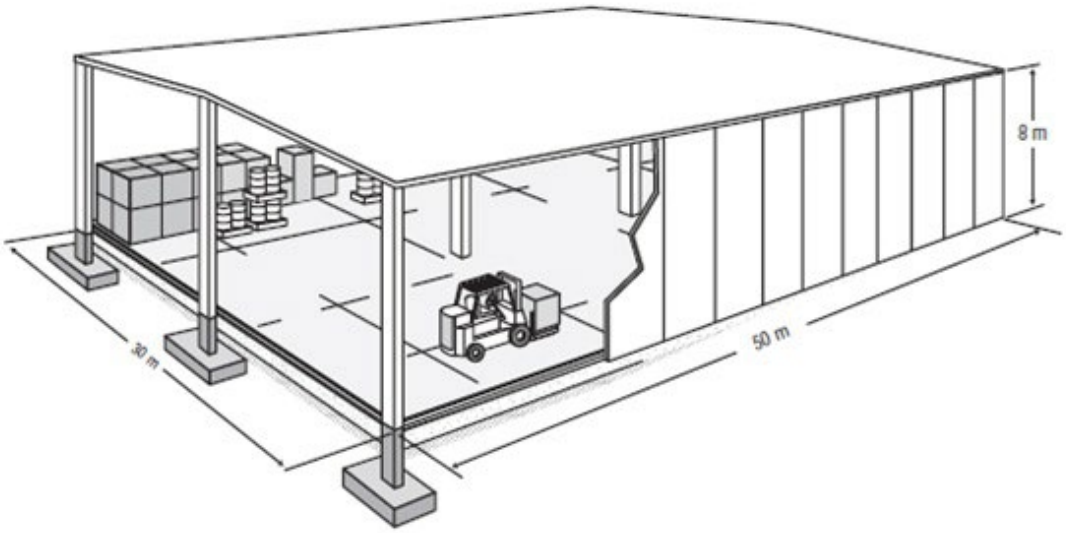


Figure 11: Cutaway of an LLSB



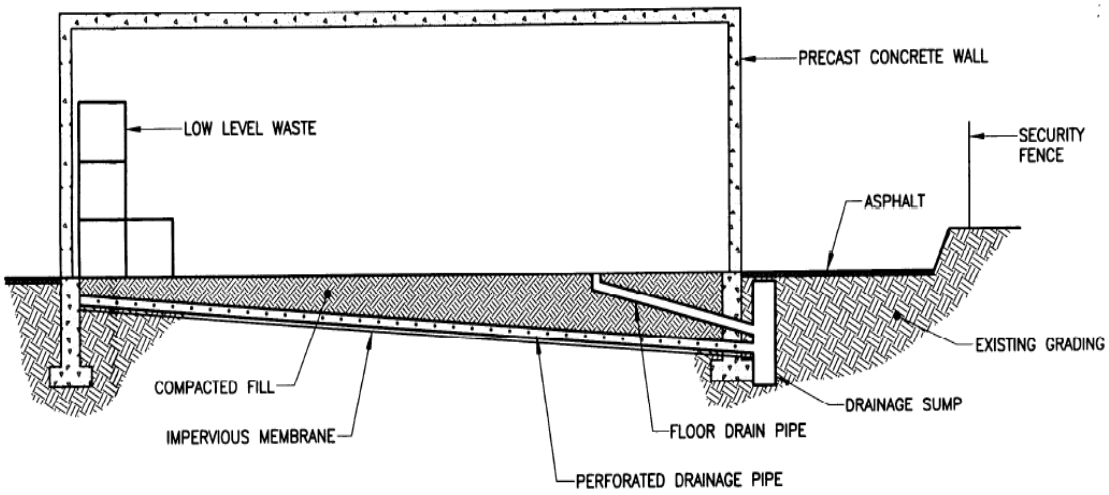


Figure 12: Typical LLSB Layout

2.5.3.5 Existing Steam Generator and Retube Waste Storage

The WWMF currently has one storage structure to store steam generators, the MPSB, Figure 14, and two storage buildings to store retube waste in RWCs from the refurbishment of Bruce Power NGS (Figure 13). During the current licence period, the MPSB was constructed to store all steam generators (SGs). SGs previously stored in the existing Steam Generator Storage Building (SGSB) were transferred to the MPSB, then the SGSB was converted to a RCSB for storing RWCs from Bruce Power. The design requirements of the retube waste storage buildings are generally the same as the low-level storage buildings described above. The MPSB is a fit-for-purpose storage structure whose requirements comply with the WWMF WFOL, its design minimizes construction and decommissioning effort while providing safe storage of the steam generators until they can be processed.

The available space within these structures will continue to be used to satisfy the waste arising from the Bruce Power Major Component Replacement program. Where practical, OPG will use any available space in these buildings to store other non-combustible low and intermediate level waste.



Figure 13: Retube Waste Container Storage at WWMF



Figure 14: Multi-Purpose Storage Building



Figure 15: Steam Generators inside MPSB

2.5.3.6 Quadricells

There are fifteen (15) reinforced concrete quadricells at WWMF (Figure 16). Quadricells are designed to store operational ILW e.g. spent resin liners. Each quadricell has a 24 m^3 storage capacity which provides a total storage of 360 m^3 of waste.

Thirteen quadricells are filled, and there have been no additions of ILW to the quadricells since 1989. Two quadricells remain empty as reserve. There are no plans to construct additional quadricells.



Figure 16: In-Ground Containers (foreground) and Quadricells (background)

2.5.3.7 In-Ground Containers

The design of in-ground containers has evolved from small capacity 1 m^3 precast concrete tile holes to large capacity 18 m^3 prefabricated in-ground steel liners. The early tile holes were constructed by digging a trench to the required depth, pouring a concrete slab, setting the sampling pipes, and then backfilling the area around the sampling pipes. Most of the tile holes are fitted with a retrievable steel liner into which the waste was placed. A subsurface drainage system is located at the base of the tile holes to prevent water from accumulating around the tile hole and to provide a means of detecting leakage. There are 224 tile holes in service and OPG has no plans to construct additional tile holes.

The "IC" series of in-ground containers have been used to store both low and intermediate level waste. The containers have storage capacities of 2 m^3 (IC-2), 12 m^3 (IC-12) and 18 m^3 (IC-18) with the majority of the containers being IC-18s (Figure 16). There are currently 20 IC-2s, 20 IC-12s and 306 IC-18s on site. An additional 54 IC-18s are planned to be installed in 2027 as shown in Table 3. The IC-12s and IC-18s are designed to accept intermediate level waste, e.g. ion exchange (IX) resin containers.

Except for size, the main design features of the IC series of structures are similar (Figure 17). Each structure has an outer carbon steel liner that is leak-tested before installation. The IC-18s can be fitted with different types of inserts to allow other wastes, such as reactor core components, to be stored.

There is an interspace between the waste package and the outer fixed liner which is sampled to detect possible water ingress by using a sampling pipe attached to the exterior of the IC-18 liners. If water is detected, a pump can be lowered to the bottom of the IC-18 sampling pipe for water removal. Waste can be retrieved by directly lifting the waste packages out of the in-ground containers.

In the past, OPG stored waste heat exchanger tube bundles from moderator, primary heat transport and auxiliary systems in in-ground containers, known as IC-HXs. There are currently 41 in-ground containers



for heat exchangers (IC-HXs) at WWMF, with the last one constructed in 2002. The diameter and depth of the augured holes can be altered to suit the various sized containers.

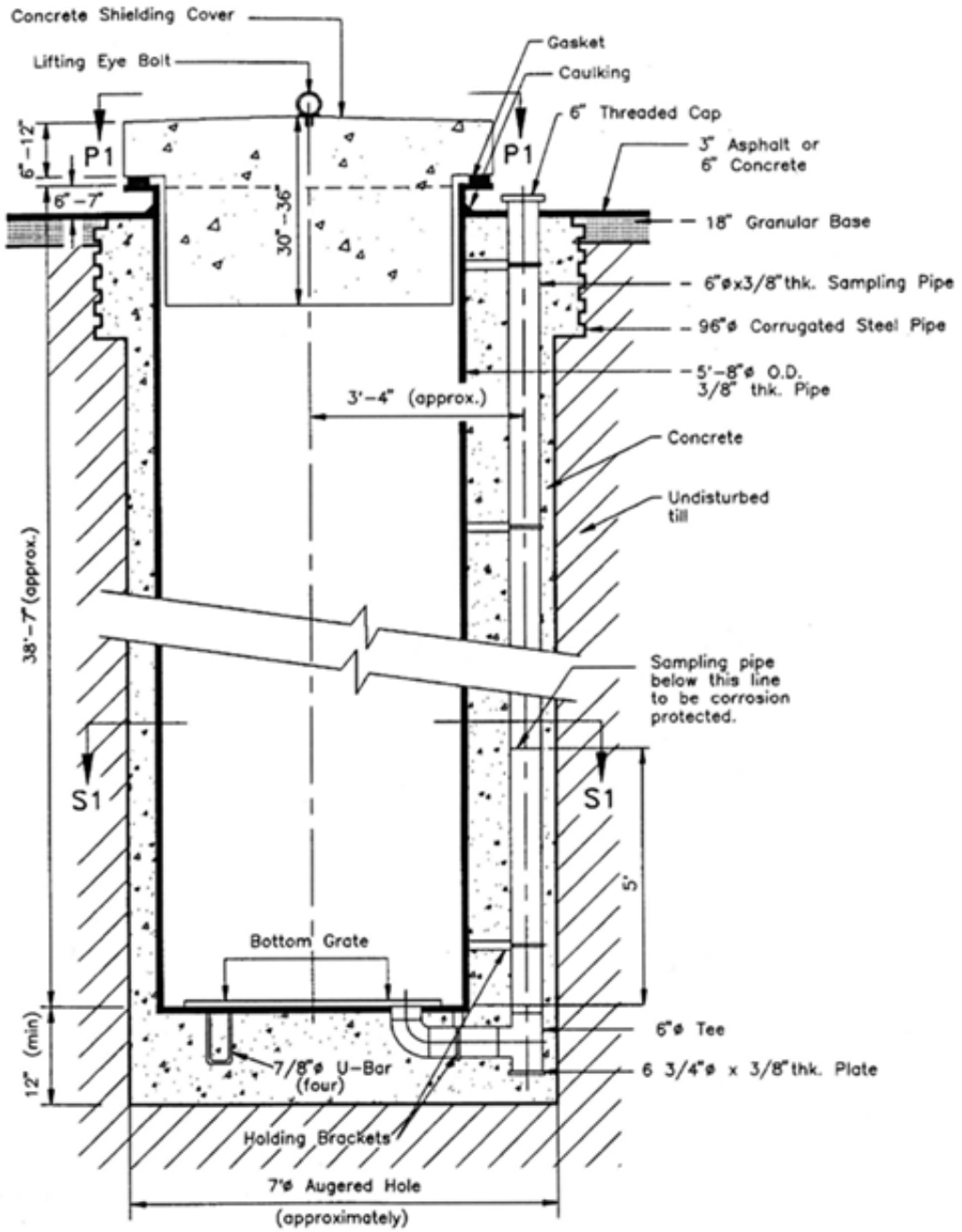


Figure 17: Main Design Features of the IC Series of Structures

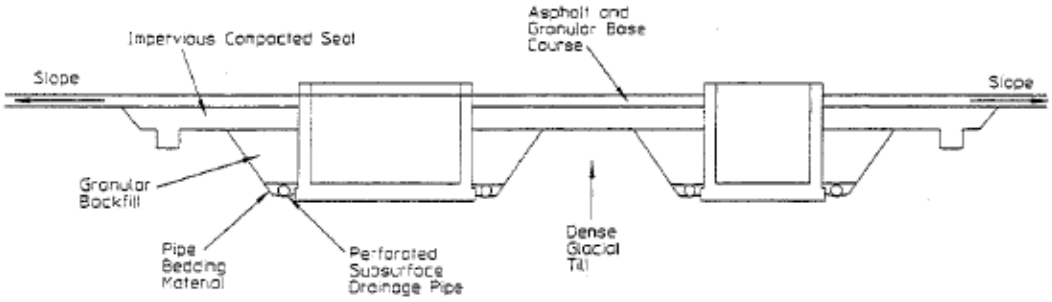


2.5.3.8 Concrete Trenches

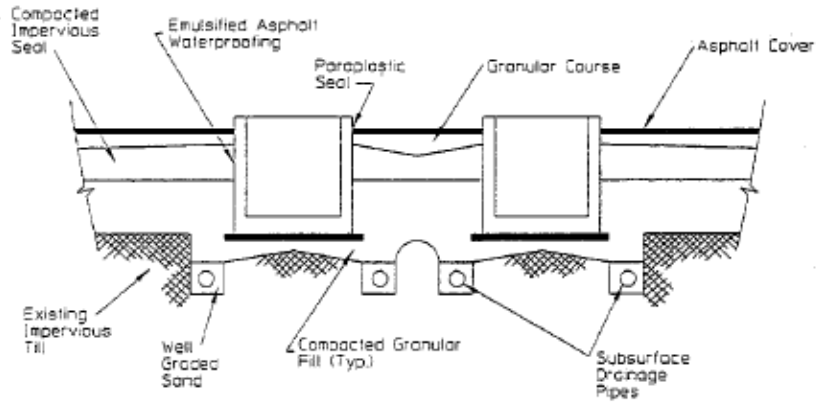
Concrete trenches are in-ground structures that have been designed to accept operational L&ILW such as drummed waste and waste of irregular shapes with radiation fields up to 150 mSv/hr. Most of the trenches are approximately 40 m long by 4 m wide and 3 m deep and are divided into 3 compartments. The in-ground portions of the exterior trench walls are waterproofed with emulsified asphalt. The bottom of each trench compartment slopes to a sump and standpipe to permit water detection and removal (Figure 18). The technology evolved over time, so some design details vary (see Figure 18 a, b). After the waste is placed into the trench, precast concrete lid caps with neoprene gaskets are placed on the trenches. The total capacity of the 15 in-ground trenches is approximately 5,800 m^3. There are no plans to build additional trenches.

The surrounding ground surface is graded to direct surface water away from the structures. There is a drainage system adjacent to and underlying each trench. The drainage systems prevent the accumulation of water between the concrete storage structures and the surrounding low-permeability silt till deposit. The drainage systems also provide a convenient means of detecting and controlling any potential leakage of contaminated water from the storage structures.





(a) STAGE 1 TRENCHES



(b) STAGE 3 and 3E TRENCHES

Figure 18: Trench Design

2.5.3.9 Facilities for Management of High Level (Used Fuel) Waste

The UFDSF is comprised of two security-protected areas: one area contains the DSC Processing Building and four UFDSBs, while the second area contains an additional two UFDSBs. Together, these areas provide interim storage space for up to 3,000 Dry Storage Containers (DSCs) for used fuel generated by Bruce Power NGS. The UFDSF was placed in service in October 2002 and received the first DSC from Bruce Power NGS in February 2003. A second DSC Storage Building was placed into service in 2007, storage buildings 3 and 4 were constructed and placed into service in 2012, and buildings 5 & 6 were constructed and placed into service in 2022. OPG expects that the next storage building will be needed by 2029.



Dry Storage Containers

A DSC is a free standing reinforced concrete container with an inner steel liner and an outer steel shell, for the storage and on-site transfer of used CANDU fuel. It is made of two sub-assemblies, a lid and a base. The base provides the storage space for the used fuel (Figure 7).

The DSC MKII constitutes the reference container design for the WWMF. The DSC is a double-shell rectangular container, with exterior dimensions of 2.121 m x 2.419 m by 3.557 m in height (including the lid), and an inside cavity of 1.046 m x 1.322 m by 2.520 m. The nominal thickness of each carbon-steel shell is 13 mm. The DSC walls consist of 520 mm (nominal thickness) concrete placed between the inner liner and the outer shell. The reinforced high-density concrete provides radiation shielding and structural strength while maintaining adequate used fuel decay heat dissipation. The concrete has a density in the range of 3.5 to 3.7 Mg/m^3 and a compressive strength of at least 40 MPa. The maximum total mass (including the lid of 11 Mg) is approximately 60 Mg when empty and approximately 70 Mg when loaded with four modules (384 used fuel bundles).

Helium is used as the inert cover gas in the DSC cavity to protect the fuel bundles from potential oxidation reactions and to facilitate leak testing of the containment boundary.

The DSC is designed with the provision for installing safeguards seals. Two separate U-shaped 25.4 mm outer diameter stainless steel tubes are embedded in the DSC walls and floor in the plane of the outer reinforcing grid. These tubes are placed so that each tube runs across the center of opposite container walls. Two similar tubes are embedded in the DSC lid and run diagonally across the lid. These tubes are used for attaching IAEA seals.

2.5.3.10 Storage Building for Used Fuel

Each UFDSB is designed to have an approximate area of 5,300 m^2, and a nominal storage capacity of approximately 500 DSCs. Reinforced concrete floor slabs are designed to accommodate heavy wheel load traffic and the weight of the loaded DSCs. The floors are constructed for long service with minimal maintenance, to retain surface alignment and provide a hard, smooth and durable surface. Floors are sloped to provide drainage to floor drains. The DSC processing building and the UFDSBs are designed to the National Building Code of Canada and the National Fire Code of Canada in accordance with the licence requirements.

2.5.4 Planned Activities

The following activities are planned for WWMF:

- Construction of UFDSB 7 and UFDSB 8, approved in the existing WFOL, with an estimated nominal capacity of 1000 DSCs and an anticipated in-service date of 2029.
- Construction of IC-18 Batch 7 consisting of 54 IC-18s, approved in the existing WFOL, planned to be in-service in 2027.
- OPG is planning to improve upon the existing DSC design to increase DSC production at NSS. The new DSC design will be referred to as MK III.

  A preliminary dose rate assessment has been completed for MKIII DSC, which indicates that dose rates do not change significantly and remain within the available margin at the site boundaries. MKIII is planned to be implemented across OPG's three nuclear waste facilities following the OPG ECC process and written notification to the CNSC will be provided for licensing basis document changes prior to implementation as per the LCHs.



2.5.5 Pressure Boundary

The *Pressure Boundary (PB)* program manages the processes that control the quality of PB activities at OPG Nuclear with a goal of no failure of pressure retaining parts. The program establishes the infrastructure and defines the activities necessary to maintain a sustainable managed process that allows OPG to perform activities associated with repairs, replacements, modifications and alterations to pressure retaining items, components and systems, including installation of new systems.

The OPG PB Program ensures PB activities at WWMF are in accordance with the codes and standards required by the WFOL. The PB program is a mature program that is compliant with the licence mandated codes and standards.

In addition, OPG maintains a PB program document roadmap that is in compliance with Annex N of CSA N285.0-12 and update no. 1. The index is a document that correlates OPG's processes and procedures to the PB program elements identified in CSA N285.0-12 and update no. 1, Annex N, Table N.1.

Based on the agreement reached with the CNSC, the OPG PB program, including the PB program document roadmap and all PB activities at WWMF will be compliant with CSA N285.0:23 effective January 1, 2027. Only PB activities that are already in progress by this date will be permitted to follow transitional provisions as agreed to by the CNSC.

WWMF uses the Technical Standards and Safety Authority (TSSA) as the Authorized Inspection Agency, under a contract between OPG and TSSA, to comply with CNSC requirements for the inspection of pressure boundaries and for design registrations.

Pressure boundary self-assessments for NSS were performed annually, the latest one being completed in 2025, which concluded that NSS meets the requirements as specified in the pressure boundary program manual and program compliance is adequate with areas for improvement. As a result of the PB audits, the renewal of the WWMF TSSA Certificate of Authorization for pressure boundary activities was successful.

2.6 Fitness for Service

The WWMF fitness for service program covers the activities that monitor and mitigate the physical condition of systems, structures and components to ensure they remain effective over time. This includes programs that ensure the equipment is available to perform its intended design functions when called upon to do so. The physical condition of Systems, Structures and Components at WWMF remain available, reliable, effective and consistent with design, analysis and quality control measures.

OPG is committed to maintaining WWMF systems, structures, equipment and components that are critical to the safe, economic, and reliable processing and storage of nuclear waste in a fit-for-service state. The implementation of OPG's *Equipment Reliability* and *Aging Management* Programs ensures the ongoing fitness-for service of these systems. The following subsections describe aspects of the WWMF fitness for service program.

2.6.1 Equipment Reliability

The objective of the *Equipment Reliability* program is to ensure high levels of equipment reliability by ensuring reliable performance of critical components important to nuclear safety and operations.



The *Equipment Reliability* program leverages various activities to ensure ongoing high levels of reliable performance of critical components. This includes identification of critical components and maintenance strategies, executing Preventative Maintenance programs, monitoring system and component condition, identifying and predicting aging and obsolescence issues on important components and embedding mitigating strategies and actions into the business plan.

2.6.2 Maintenance

WWMF's recurring preventive maintenance activities are planned, scheduled and executed according to the preventive maintenance program. The management and scheduling of preventive maintenance activities are completed using OPG's enterprise software system which also retains records of all completed maintenance tasks. Feedback from maintenance staff and changes to preventive maintenance activities are incorporated. Non-routine maintenance (corrective maintenance) activities are requested, planned and executed using the same software. Significant corrective maintenance issues may be identified using the Corrective Action Program and tracked to completion in the Action Tracking module.

Corrective actions to address maintenance issues are provided for management approval and are monitored to completion. Corrective actions that require changes to systems, structures or components are managed through the modification process discussed in Section 2.5 Physical Design.

The maintenance program is organized to align closely with the Engineering, Work Management, Operations and Supply Chain organizations to support fitness for service requirements.

2.6.3 Aging Management and Structural Integrity

The *Integrated Aging Management* (IAM) program is a comprehensive program that supports the continued safe and reliable operation of the WWMF's Structures, Systems, and Components (SSCs). IAM provides the framework for managing aging and demonstrates how the current processes and programs meet the requirements for effective aging management in accordance with CNSC REGDOC-2.6.3, *Aging Management*.

The IAM program ensures that the condition of critical nuclear facility equipment is understood and that required activities are in place to ensure the health of these components and systems over time. This is accomplished by establishing an integrated set of programs and activities to ensure that the performance requirements of all critical equipment are met on an ongoing basis. The IAM program covers all structures, systems and components defined as critical based on a nuclear safety, production, environment and cost significance perspective. The IAM process is summarized in Figure 19.



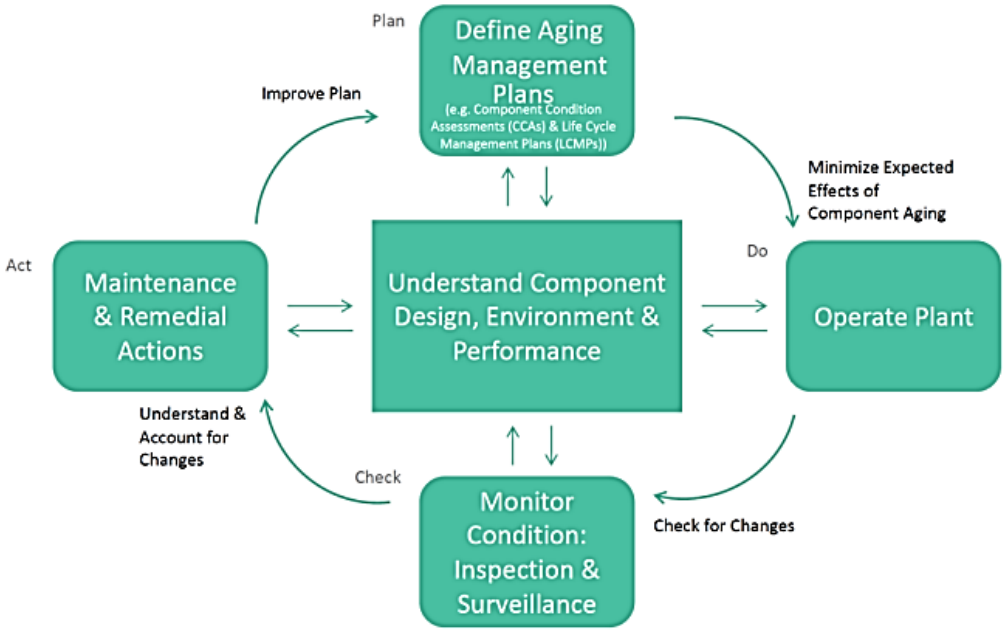


Figure 19: Integrated Aging Management Process

The aging management process uses a systematic and comprehensive approach to assess the effectiveness of an SSC's aging management plan and address any aging related issues.

NSS staff conduct maintenance, inspections, sampling and other activities to ensure the structural integrity and to manage the aging of systems, structures, and components to protect the health and safety of persons and the environment. NSS staff utilize the *IAM* program with a graded approach to manage the structural integrity and aging of systems structures and components commensurate with the risk. This is accomplished through the scoping and screening process. The scoping and screening process defines the systems, structures, and components that are low risk or have established processes in place and identifies the remaining systems, structures and components that require development of an Aging Management Plan.

2.6.4 System, Structure or Component-Specific Aging Management Programs

2.6.4.1 Dry Storage Container Aging Management Program

The *DSC Aging Management* Program addresses aging mechanisms, such as corrosion, which could potentially affect DSCs. The aging management activities have yielded the following results over the current licence period:

- Of the inspected DSCs, the overall condition of the DSC coating was reported as fair to very good condition and the reported issues were addressed through paint touchups. Very few areas on the containment welds have required re-coating.



- No change in the condition of the DSC base plates between the time of their initial inspection and re-inspection that would have any impact on their ability to safely store the fuel. CNSC staff are provided with the annual summary reports of these inspections.
- Ultrasonic re-inspection of indications in the base plate parent material have shown that there are no observed changes in laminar defects, supporting flaw stability.
- Measured chloride levels from the DSC shell have a negligible effect on the potential corrosion of the DSC external surfaces.

2.6.4.2 DSC Transfer Clamps Aging Management Program

The DSC Transfer Clamp Aging Management Program addresses aging mechanisms, such as mechanical deterioration and fitment of bushings, seals or corrosion, which could potentially affect the DSC Transfer Clamp. The aging management activities have yielded the following results over the current licence period:

- Visual inspections have shown that the transfer clamps remain in very good condition with the occasional need to apply lubrication to moving parts to maintain good working condition.
- Inspection of clamp seal and stand have shown that the seals and stand remain in very good condition. The O-ring seals are on-hand and have been replaced when deemed necessary per inspection.
- Inspection of lifting points has shown that the clamp lifting points remain in very good condition. There have been no reportable indications found and there has been no noticeable change in condition from year to year.

2.6.4.3 Low & Intermediate Level Waste Storage Structures and Containers

For the L&ILW storage structures and containers, the Aging Management Program addresses aging mechanisms such as freeze/thaw damage, chloride diffusion, sulphate attack or corrosion, which could potentially affect the structure of container. The aging management activities completed over the current licence period include:

- Visual inspections showing generally good condition;
- Condition assessments showing generally good condition;
- Water monitoring not indicating negative adverse trends;
- Radiation monitoring not indicating negative adverse trends; and
- Pressure-holding capability verification of IC-HXs.

2.6.5 Planned Activities

OPG is planning to carry out a number of activities to address aging, obsolescence, general improvements and to ensure ongoing fitness for service of critical structures, systems and components in the next licence period.

(a) **Dry Storage Containers and storage buildings**
- Upgrade to a new automated DSC lid to base welding system;
- New Dry Storage Container V-Groove weld design;
- Phased Array Ultrasonic Testing system upgrades;
- Processing and storage building roof replacements; and
- Electrical system upgrades.

(b) **Facility Component Replacements**
- Replacement of Air Conditioning Units that utilize Hydrofluorocarbons;



- Replacement of Air Handling Units that are approaching end of design life;
- Motor Control Center replacement;
- Box Compactor replacement; and
- Stack monitor replacements.

(c) **Low and ILW Storage Structures and Containers**

- Low Level Storage Building roof maintenance;
- On-going storage structure inspections;
- Asphalt maintenance and repairs; and
- Low Level Waste sorting activities.

(d) **Incinerator Improvements**

- Upgrades to the spray cooler system and programmable logic controller power supply module to improve Incinerator reliability and maintainability.

2.7 Radiation Protection

WWMF maintains a comprehensive *Radiation Protection* (RP) program that establishes the controls, processes, and practices necessary to achieve radiation protection objectives and maintain compliance with all applicable regulatory requirements.

The RP program controls occupational and public radiation exposure As Low As Reasonably Achievable (ALARA) and prevents the uncontrolled release of contamination or radioactive material through the movement of personnel and materials from the site. This is achieved through a clear organizational commitment to effective radiation protection practices and the implementation of appropriate controls.

2.7.1 Application of ALARA

ALARA is a foundational principle of radiation protection, requiring that radiation doses to all persons be maintained as low as reasonably achievable, taking economic and social factors into account. At WWMF, ALARA is implemented in accordance with OPG's *Radiation Protection* Program, which ensures compliance with regulatory requirements, establishes controls for occupational and public exposure, and supports effective planning for unusual situations. Notable elements of this program include:

- Limiting individual worker dose
- Managing dose as a resource, in terms of constraints on work activities
- Ensuring facility design is aligned with ALARA principles, including the consideration of ALARA requirements during the planning and implementation of any facility modifications
- Assessing hazards for planning and maintaining knowledge of conditions
- Planning and performing work to keep exposures ALARA and avoiding unplanned exposures
- Controlling the use of licensed radioactive devices and equipment

Controlling Exposures As Low As Reasonably Achievable and *Engineering Change Control*, are processes that drive the use of tools and checklists for radiological safety to ensure a comprehensive, robust review is performed during the design phase of new designs or proposed engineering changes. These reviews help to understand how radiological exposures can be eliminated or reduced. When appropriate, the administrative controls within the RP program help bridge areas within the chosen design features.

The ALARA program drives continuous improvement through annual self-assessments to align with industry best practices and the latest technological development that can be used to minimize dose.



2.7.2 Radiation Protection Program

2.7.2.1 Program and Objectives

The *Radiation Protection* Program, receiving authority from the *Nuclear Management System* is implemented through a series of standards and procedures for the conduct of activities within nuclear sites and with radioactive materials intended to achieve and maintain high standards of radiation protection including the achievement of the following objectives:

(1) Controlling occupational and public exposure by:
- Keeping individual doses below regulatory limits.
- Avoiding unplanned exposures.
- Keeping individual risk from lifetime radiation exposure to an acceptable level, and
- Keeping collective doses As Low as Reasonably Achievable (ALARA).

(2) Preventing the uncontrolled release of contamination or radioactive materials from the nuclear sites through the movement of people and materials, and

(3) Demonstrating the achievement of (1) and (2) through monitoring.
The key program elements are:
- Program Management,
- Management Control over Work Practices,
- Personnel Qualification and Training,
- Exposure Control,
- Contamination Control, and
- Ascertainment and Recording of Doses.

This program is designed to comply with the radiation protection program requirements of the following acts and regulations as applied to licensed OPG facilities and licensed OPG activities:

- *General Nuclear Safety and Control Regulations* (Statutory Orders and Regulations (SOR)/2000-202)
- *Radiation Protection Regulations* (SOR/2000-203)
- *Class II Nuclear Facilities and Prescribed Equipment Regulations* (SOR/2000-205)
- *Nuclear Substances and Radiation Devices Regulations* (SOR/2000-207)
- *Occupational Health and Safety Act*, Revised Statutes of Ontario (R.S.O.) 1990, Chapter O.1.
- *Occupational Health and Safety Act,* Revised Regulations of Ontario (R.R.O.) 1990, Regulation 861, X-Ray Safety
- *Radiation Emitting Devices Act*, R.S., 1985, c. R-1
- *Radiation Emitting Devices Regulations,* Consolidated Regulations of Canada (C.R.C.), c. 1370

2.7.2.2 Worker Practices for Dose and Contamination Control

Performing radioactive work within the WWMF requires a systematic approach and is managed by the OPG *Radiation Protection* Program, which includes the following processes:

- Limiting individual worker dose.
- Managing dose as a resource, in terms of constraints on work activities.
- Establishing facility design consistent with ALARA principles.
- Assessing hazards for planning and maintaining knowledge of conditions.
- Controlling the use of licensed radioactive devices and equipment.



- Planning all radioactive work, taking into account personnel, hardware, procedures, supervision, and the physical environment of the job.

The planning process includes the anticipation and evaluation of radiation hazards and the selection of appropriate protective measures and dosimetry. The degree of formalization of the planning process and the approval levels for a job are proportional to the potential for exposure. Oversight is provided to improve performance and lessons learned are shared with other station departments to drive overall station RP performance improvements.

Radioactive contamination controls are in place to reduce occupational and public exposure, and to minimize the release of radioactive materials to the environment.

2.7.2.3 Radiation Protection Program Monitoring and Oversight at WWMF

Established Key Performance Indicators are used to monitor *Radiation Protection* Program effectiveness measures commonly used in the nuclear industry. Radiation Protection Report Cards include radiation protection indices and are prepared monthly. Specific measures include personnel contamination incidents, regulatory infractions, as well as dose performance versus dose targets. The *Radiation Protection Program* is subject to ongoing monitoring through mechanisms including but not limited to:

- Management review and assessment which includes:
  - Joint Committee on Radiation Protection, and
  - Monthly Management Oversight Meetings,
- Exceptional dosimetry and dose control device measurement results,
- Dose trends,
- Observation and Coaching,
- Annual preparation and review of ALARA targets,
- Radiation Protection program self-assessments and independent audits, and
- Investigation of events in which an Action Level has been exceeded, trending, benchmarking, and review of industry operating experience.

2.7.3 Current Operations and Results

2.7.3.1 Dose and Contamination Control

As per the requirements of the *Radiation Protection Regulations* and the WWMF WFOL, OPG has established Action Levels for WWMF. These Action Levels serve as indicators to prompt a review and ensure continued effective control of the RP program. Exceeding an Action Level requires notification and reporting to the CNSC, investigation of the cause, and corrective action as required.

During the current licence period there have been no action level exceedances related to worker dose at the WWMF or any loss of contamination control events in excess of WWMF's contamination control action levels.

OPG's administrative limits include two control levels for exposure:

1. the Exposure Control Level is 10 mSv/year, and
2. the Administrative Dose Limit is 20 mSv/year.

Exposure control levels are set below administrative control levels, which are in turn below the regulatory limits. Figure 20 shows the OPG individual exposure control level of 10 mSv (1 rem) per calendar year is



significantly below the single year regulatory limit of 50 mSv (5 rem) in a year, and the five-year regulatory limit of 100 mSv (10 rem) over five years for a Nuclear Energy Worker (NEW).

Doses are maintained ALARA through the use of engineered barriers, work planning and use of exposure control levels for NEWs.

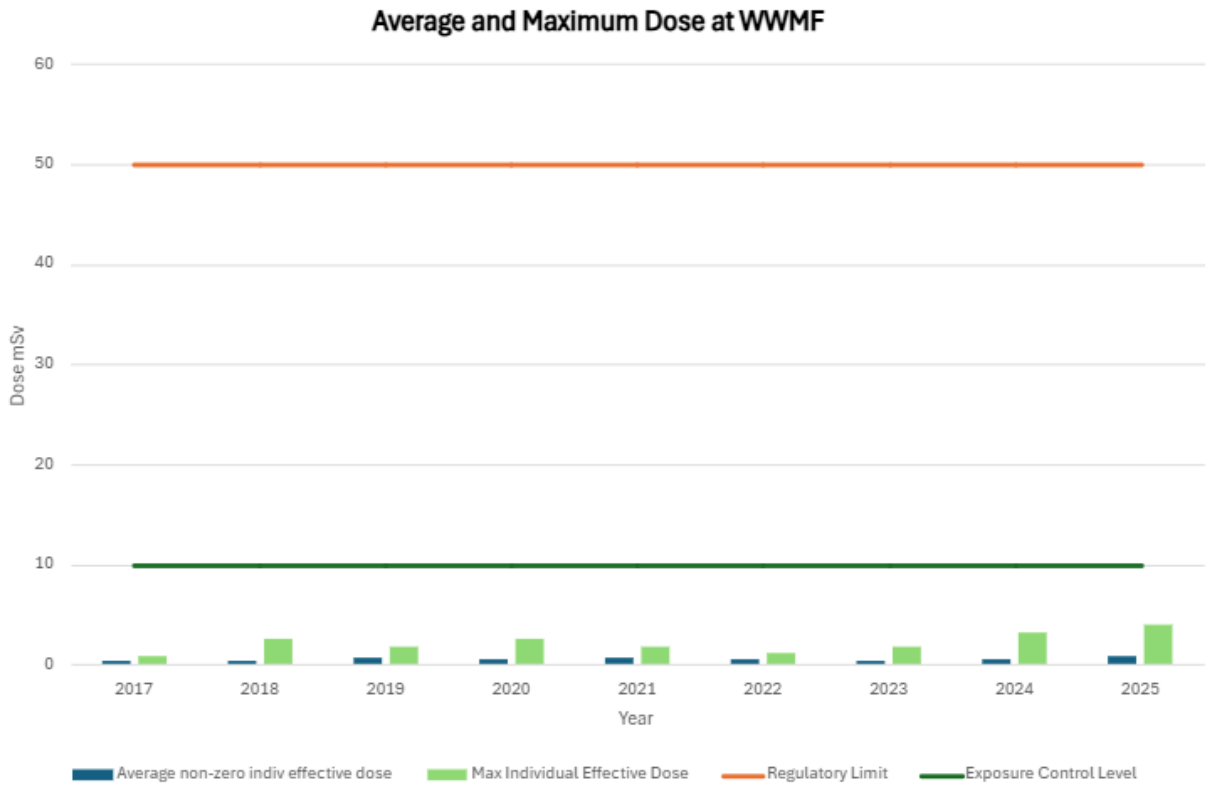


Figure 20: Average and Maximum Doses at WWMF

OPG's contamination control measures within the RP Program continue to be in full compliance with regulatory requirements. Facility targets are set annually, based on DSC throughput and other waste operations, and overall radiation protection performance is reported in the Annual Compliance Report.

2.7.4 WWMF Perimeter Dose Monitoring (non-NEW and Public)

Ambient radiation dose rates at the WWMF boundary fences are measured by Environmental Thermoluminescent Dosimeters mounted on the perimeter fence of the WWMF and are collected, replaced and analyzed quarterly. The Thermoluminescent Dosimeters are located along the perimeter fence, which establishes the boundary for non-NEW personnel. The results are reported to CNSC staff in the WWMF Annual Compliance Report and are used to confirm that the average gamma dose rate – specifically, the Average Air Kerma Rate – at the perimeter fences remain below the derived dose rate target of 0.5 µGy/h at the public domain boundary.

A dose rate of 0.5 µSv/h for 2,000 hours of exposure would result in a dose to the public of 1 mSv, the regulatory annual limit. The average actual perimeter dose rate at the WWMF has consistently been less



than the 0.5 µSv/h, with an overall average less than 0.1 µSv/h. The maximum potential dose at the site boundary over the course of a year to a member of the public is well below the regulatory annual dose limit of 1 mSv.

All measured dose rates during the licence period have been below target. Annual performance is reported as the average of all dose rates.

2.7.5 Future Plans and Improvements

The NSS Radiation Protection organization has plans to review the radiological surveys program to assess frequency and scope. It will be revised to reflect the many years of operating experience to improve the effectiveness of routine survey program by focusing resources and surveys on higher risk areas.

RP instruments are managed through a documented lifecycle process that governs their selection, calibration, maintenance, and performance monitoring. Characterization studies are performed by OPG Radiation Protection/Health Physics personnel and qualified external vendors, as appropriate, with results verified and reviewed to confirm that identified hazards remain within their predicted operating envelope. As part of ongoing lifecycle management and continuous improvement, OPG Health Physics will continue to assess emerging RP instrumentation and technologies to identify opportunities to enhance measurement capability, reliability, and operational effectiveness.

RP continuing training will continue into the future, with hands-on instrumentation sessions led by experienced health physics personnel. These sessions will support practical skill development and promote the exchange of technical knowledge and operating experience among participating organizations.

Overall, the OPG *Radiation Protection* program is subject to periodic reviews against applicable industry standards to ensure continued alignment with evolving regulatory requirements, industry practices, and emerging best practices.



2.8 Conventional Health and Safety

OPG is committed to preventing workplace injuries, optimizing health, and continuously improving employee health and safety performance. The foundational document that upholds this commitment is the *Employee Health and Safety Policy*. The *Health and Safety Policy* describes OPG's approach to Conventional Health and Safety for the organization and outlines the requirements and accountabilities of all employees to uphold this commitment.

2.8.1 Employee Health and Safety Policy

The objectives of the *Employee Health and Safety* Policy are to:

- Meet or exceed all applicable health and safety legislative requirements and other associated health and safety standards OPG subscribes to. OPG shall require that its contractors maintain a level of safety equivalent to that of OPG employees while at OPG workplaces.
- Ensure that employees are involved in decisions that have an impact on their health and safety, either individually, as a group, or through their employee representative groups.
- Ensure that work is planned and performed to protect workers. It shall provide its employees with the information, training, tools, procedures, and support required to do their jobs safely.
- Set health and safety targets as part of the annual business planning process. Health and safety performance against these targets shall be regularly measured and evaluated to ensure the effectiveness of OPG's health and safety systems.

2.8.2 Program and Objectives

OPG's *Environment Health and Safety Managed Systems* program and its supporting governance documents establish operating standards and process requirements for health and safety risk identification, elimination, and where not possible, mitigation control or reduction. It also prescribes the roles and responsibilities of various entities and individuals at all levels in the organization to ensure the activities meet the requirements of OPG's *Health and Safety Policy.*

The objective of the Conventional Health & Safety section of the *Environment Health and Safety Managed Systems* Program is to ensure the safety and well-being of its workers. This is achieved by ensuring that safety is a core value and by managing conventional risks in the workplace associated with WWMF's operations. This program is designed to be an integrated system with OPG Nuclear business managed processes, where appropriate, and considers the current organizational structure.

The Environment Health and Safety Managed Systems include:

- Occupational conditions and factors that could affect the health and safety of workers in all workplaces, or work-related activities under OPG's control.
- Non-occupational health-related conditions and factors that could affect the health of OPG's workers, which impacts the achievement of OPG's business objectives.
- Contractor health and safety.

Risk reduction activities occur across multiple levels. Building resilience to risk is a function of cultivating a competent and proficient workforce and maintaining meticulous safe work planning practices. This approach ensures the implementation of redundant controls capable of mitigating human error and achieving safe outcomes across all aspects of OPG's operations.



OPG's *Health and Safety Managed Systems* program ensures alignment with internal and external specifications or standards such as the *Nuclear Management System* and is based on the International Organization for Standardizations (ISO) 45001, *Occupational Health and Safety Management System*.

2.8.3 Health and Safety Management Practices and Awareness

The WWMF is subject to a robust framework of conventional health and safety regulations. These aim to protect workers from non-radiological hazards such as slips, trips, falls, mechanical injuries, and exposure to hazardous substances. Conventional Health and Safety is distinct from radiation protection and is governed by both federal and provincial legislation, as well as regulatory guidance from CNSC REGDOC-2.8.1, *Conventional Health and Safety*.

2.8.3.1 Occupational Health and Safety Act and Corporate Safety Rules

OPG is committed to upholding robust workplace health and safety practices aimed at managing risk for both employers and workers. To fulfill this commitment, OPG has established the OPG *Corporate Safety Rules* ensuring compliance with or exceeding applicable health and safety legal obligations mandated by the *Occupational Health and Safety Act, R.S.O. 1990, c. O.1* (OHSA) and applicable regulations.

2.8.3.2 Health and Safety Managed Systems Program

Continuous improvement opportunities for OPG's *Health and Safety Managed Systems* (HSMS) program are identified using a "Plan-Do-Check-Review" management cycle. The objective is to ensure conventional health and safety risks, work practices and conditions are appropriately managed to achieve a high degree of employee safety. OPG's internal compliance audits function to assess the effective implementation and maintenance of the HSMS, in accordance with applicable ISO standards and regulatory requirements.

2.8.3.3 WWMF Joint Health and Safety Committee

To further enhance worker safety, WWMF Joint Health and Safety Committee consisting of both front-line and management representatives has been established to work cooperatively to improve health and safety in the workplace, as set out in the OHSA.

2.8.3.4 Internal Responsibility System

The Internal Responsibility System is a system applied consistently throughout OPG's nuclear operations, where everyone has personal and shared responsibility for working together co-operatively to prevent occupational injuries and illnesses. The duties for a healthy and safe workplace fall on every individual, to the degree they have authority (based upon their position) and ability (based upon their expertise and qualifications) to do so. Each person is expected to take the initiative on health and safety issues, work to solve problems, and make improvements on an ongoing basis.

The Internal Responsibility System outlines the appropriate resolution level for timely corrections. As part of this system, employees have the right to refuse work if they believe it poses an undue health or safety risk to themselves or others, as per OPG's *Health and Safety Hazard Resolution and Management of Work Refusals and Work Stoppages* procedure. This right is protected and is integral to the governance of the system. Management and leadership are committed to listening to these concerns and resolving them in a timely manner, in alignment with the core principles of the Internal Responsibility System.



2.8.3.5 Incident Investigation

OPG's *Incident Investigation* provides a systematic and consistent approach for evaluating adverse conditions at OPG's nuclear facilities, including determining the cause of an adverse condition or event and developing effective corrective actions to eliminate or reduce the probability of similar events occurring in the future.

2.8.3.6 Workplace Hazardous Materials Information System

OPG is compliant with Workplace Hazardous Materials Information System and has processes in place for the management, handling, and storage of hazardous materials to ensure regulatory compliance and to ensure workers have information to safely work, store and dispose of hazardous materials in the workplace.

2.8.3.7 Training

The Nuclear Conventional Safety Training and Qualifications document describes required initial and Continuing Conventional Safety Training and related qualifications for all major job families and contractors.

2.8.4 Current Operations and Results

OPG staff engagement in personal safety and associated initiatives and programs has instilled behaviours within the organization that have contributed to performance free of lost time injuries since 2011. NSS staff continuously strive for excellence and continual improvement in our Health and Safety performance. Health and Safety has focused efforts on benchmarking with industry leaders; and based on these benchmarks, OPG has introduced new initiatives and programs to support continual improvement in Conventional Safety.

OPG's Fail Safe strategy drives continuous improvement of OPG's performance in *Health and Safety Managed Systems* and human performance. It relates to the concept that OPG's programs have built-in protections (capacity) against significant injury and consequences, even in the event of employee error or equipment failure. OPG's Fail-Safe approach to safety and human performance is proactive and focuses on building a resilient organization.

To ensure that the overall objective of managing occupational hazards is met, OPG monitors the following performance indicators / elements:

- Total Recordable Injury Frequency (TRIF)
- Accident Severity Rate (ASR)
- Serious Injury Incidence Rate (SIIR)
- Timely Completion of Safety Corrective Actions (TCSCA)
- High Maximum Reasonable Potential for Harm Events (HMRPHE)/Safety Classification and Learning Model (SCL)

2.8.4.1 Total Recordable Injury Frequency

The Total Recordable Injury Frequency (TRIF) is defined as the number of fatalities, lost-time injuries, restricted work, and medically treated injuries divided by exposure hours and multiplied by 200,000. In 2018, the decision was made to change the safety performance indicator from All Injury Rate (AIR) to TRIF.



The TRIF and AIR are inclusive for the entirety of NSS, which includes the WWMF. In 2024, the NSS TRIF target was updated to align with organizational changes and to ensure consistency with the Corporate Administrative Office (CAO) TRIF target of 0.47. This change allows for up to one recordable injury over a 12-month period (based on hours worked), providing a more realistic and achievable goal given NSS's operational context. This ensures that NSS's safety performance metrics are consistent with those of its new reporting structure.

During the licence period, there were five (5) safety events that occurred at the WWMF that impacted the TRIF for the reporting period. In 2017, there was one medically treated injury (laceration to ankle); one medically treated injury (shoulder strain) in 2020; two medically treated injuries (laceration to thumb & back pain) in 2021; and in 2022 there was one medically treated injury (knee strain). All events were thoroughly investigated, and corrective actions were implemented to drive improved safety performance. Current TRIF performance is better than target.

2.8.4.2 Accident Severity Rate

The Accident Severity Rate (ASR) is defined as the total number of calendar days lost due to a work-related injury multiplied by 200,000 person-hours, divided by the total exposure hours worked.

NSS ASR remained at zero from 2016 through 2025, as there were zero lost time injuries experienced in the reporting period. Specifically, at WWMF, there have not been any lost time incidents since 2011. This shows a strong commitment to safety and continued focus over the last 15 years.

2.8.4.3 Serious Injury Incidence Rate

Serious Injury Incidence Rate is defined as the number of work-related accidents for all OPG employees that result in serious injuries or fatalities, per 200,000 person-hours worked. This metric focuses on more serious injuries, assists in maintaining attention on high-consequence hazards, and accounts for the actual injury instead of the type of medical treatment.

WWMF Serious Injury Incidence Rate has remained at zero (0) since the introduction of the new safety performance metric in 2020.

2.8.4.4 Timely Completion of Safety Corrective Actions

Timely Completion of Safety Corrective Actions (TCSCA) aims to prioritize completion of safety related actions in a timely manner. TCSCA is the percentage of corrective actions, arising from safety events, that are completed on or before the initial due date (zero extensions).

Strong TCSCA performance has been observed for WWMF since the introduction of the metric in 2020 with a 100% completion rate, which is better than the target of 98%. In 2025, TCSCA was evaluated and found to have achieved its intended goal of increasing oversight of safety-related corrective actions, resulting in sustained excellence in action completion. As a result, TCSCA has been discontinued on January 1, 2026.

2.8.4.5 High Maximum Reasonable Potential for Harm / Safety Classification and Learning Model

The High Maximum Reasonable Potential for Harm (HMRPH) is an OPG rating system used to classify incidents, and to determine the potential severity of safety incidents. These are incidents with potential for injury to personnel; however, no actual injury may have occurred. High Maximum Reasonable Potential



for Harm incident investigations offered learning opportunities for continued improvement in safety performance.

During the current licence period, there were 4 HMRPH events in Falling Material, Electrical, Working at Heights and Flying Object at WWMF. Each of these events were investigated, corrective actions taken and lessons learned shared to prevent future occurrences.

In April 2024, OPG introduced the Safety Classification and Learning (SCL) model and transitioned away from the MRPH event classification. The SCL model is focused on learning from events to prevent recurrence and keep workers safe. The SCL also aligns with OPG's Fail Safe shift by focusing on high-energy, high-consequence events and the use of barriers and strong defences.

Since the SCL model was adopted, there have been no high-energy, high-consequence events.

2.8.5 Safety Enhancements

During the current licence period, a number of safety enhancements have been made to equipment and systems at WWMF, some examples are:

- LED lighting upgrades completed within the facility to increase visibility in work areas.
- Replacement of the degrading incinerator primary chamber refractory eliminating the risk of falling material.
- Upgraded epoxy floor in the incinerator building removing trip hazards and to allow for more effective cleaning.
- Establishment of the Engineering General Modification to support the electrical safety program with the installation of receptacles to limit the use of extension cords.
- Added permanent stairs to the Waste Volume Reduction Building, enhancing the safety of accessing the roof.

A number of health and safety improvement initiatives have been identified for the WWMF as part of the continuous improvement cycle of the health and safety management system, which include:

- Implementation of Fail-Safe Culture Change initiatives. Fail-safe is a culture shift that recognizes that human error can occur, and when that happens, the individuals are protected. It is a shift in mindset to proactively identify whether the defences in place are sufficient. This culture has been incorporated into safe work planning, work execution, and event learning. This provides the platform to further improve OPG's safety program.
- OPG has introduced industry accepted hazard assessment tools including the energy wheel, to better identify hazards in the planning stage to eliminate, control and ultimately protect workers against workplace hazards.
- Continued adoption of the Safety Classification and Learning (SCL) Model. The SCL model will allow OPG to take its safety performance to the next level by increasing the number of learning opportunities from events and to better characterize our safety performance.
- OPG's commitment to continuously improve performance is reflected by setting challenging targets for safety performance metrics.



2.9 Environmental Protection

OPG's comprehensive environmental protection programs aim to continually minimize impacts from nuclear facility operation on the environment and human health. This is achieved by ensuring that there are multiple barriers in place to control and minimize emissions to the environment and to ensure emissions are monitored.

OPG implements environmental protection programs at the WWMF in accordance with CNSC REGDOC-2.9.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures, Version 1.2*. Given OPG's robust programs and processes, it is expected that the WWMF will continue to meet or exceed regulatory requirements and expectations within this SCA over the next licence term.

2.9.1 Environmental Managed Systems

OPG maintains an Environmental Management System (EMS), *Environment Health and Safety Managed Systems*, which defines the procedures and supporting documents that implement the requirements of OPG's *Environmental Policy*. The EMS is consistent with the International Organization for Standardization (ISO) 14001 *Environmental Management System Standard* and CNSC REGDOC-2.9.1: *Environmental Protection, Environmental Principles, Assessments and Protection Measures, Version 1.2.*

The objectives of the OPG *Environmental Policy* are to:

- Establish an EMS and maintain registration for this system to the ISO 14001.
- Work to prevent or mitigate adverse impacts on the environment, with a long-term objective of continual improvement in its EMS and its environmental performance.
- Strive to be a leader in climate change mitigation.
- Manage OPG's sites in a manner that strives to maintain, or enhance where it makes business sense, significant natural areas and associated species of concern. OPG will work with its community partners to support regional ecosystems and biodiversity through science-based habitat stewardship. Where disruption is required, OPG shall take reasonable steps to manage the residual impact to these areas and species.
- Set environmental objectives as part of its annual business planning process. Performance against these environmental objectives will be monitored and associated documented information will be maintained.
- Communicate its environmental performance to employees, governments, local communities, and other stakeholders.

The current OPG ISO 14001 EMS certificate, issued in 2024 following a successful external audit, is valid for 3 years.

The EMS uses a risk-based approach to identify and assess areas of concern with respect to environmental management at the WWMF. Elements of OPG's activities, products, and services that interact or can interact with the environment are considered environmental aspects per the *Environment Health and Safety Managed Systems* program. Significant environmental aspects, as determined by assessing risks and opportunities, are environmental aspects that have or can have a significant environmental impact. Identified environmental aspects, including significant environmental aspects, are managed as appropriate through operational controls at the sites. Performance measures are established to ensure the controls perform as designed and are corrected and/or improved under the EMS framework.



The identification of significant environmental aspects which apply to the WWMF allows for more focus on areas where there is the potential to have a negative or positive impact on the environment. The significant environmental aspects that have been identified for WWMF include the following:

- Spills (refer to section 2.9.1.1 for details),
- Wildlife habitat: enhancement or disruption (refer to section 2.9.1.3 for details),
- Radiological emissions: production or reduction (refer to section 2.9.4.1 for details),
- Non-radiological emissions: production or reduction (refer to section 2.9.4.2 for details),
- Low or intermediate radiological waste: generation or diversion (refer to SCA 11 Waste Management Program), and
- Non-radiological waste: generation or diversion (refer to SCA 11 Waste Management Program).

The continual improvement of WWMF operations is an ongoing effort under OPG's ISO 14001-certified EMS. Opportunities for continual improvement are identified through routine EMS audit activities, the OPG performance improvement program, and strategic initiatives such as the execution of OPG's Climate Change Plan and Reconciliation Action Plan (available at www.opg.com).

2.9.1.1 Spill Management Program

OPG has a framework in place to manage spills, ensuring implementation of spill prevention, preparedness, response, clean-up, and remediation processes in accordance with applicable regulations. Spills are classified as Category A (Very Serious), Category B (Serious), Category C (Less Serious), or Category D (Exempted or Potential Spills). Spills are identified, classified, and reported.

During the current licence period (2017 to 2025), there were no Category A or B spills. Between 2017 and 2025, there were three Category C spills at WWMF. Although reportable, these spills were minor in nature with no impacts to the public and environment. Corrective actions were implemented to prevent recurrence.

2.9.1.2 Regulatory Compliance

The WWMF site operates under numerous environmental regulations governing plant operations. The primary regulators from an environmental perspective are the CNSC, Environment and Climate Change Canada and the Ontario Ministry of the Environment, Conservation and Parks (MECP).

During the 2017–2025 licence period, 44 events related to the incinerator were reported to the MECP. These events were mainly due to instantaneous spikes in carbon monoxide, brief temperature drops or momentary by-pass stack openings. There were no significant impacts to the environment or public associated with these non-compliances of the performance requirements or by-pass stack openings. Most events were linked to waste feeding and air flow challenges, temperature probe failures, and service water interruptions, particularly following the 2019 upgrades. Subsequent operational and maintenance improvements have reduced the frequency of these events in recent years. Figure 21 illustrates this downward trend and demonstrates the effectiveness of improvements implemented.



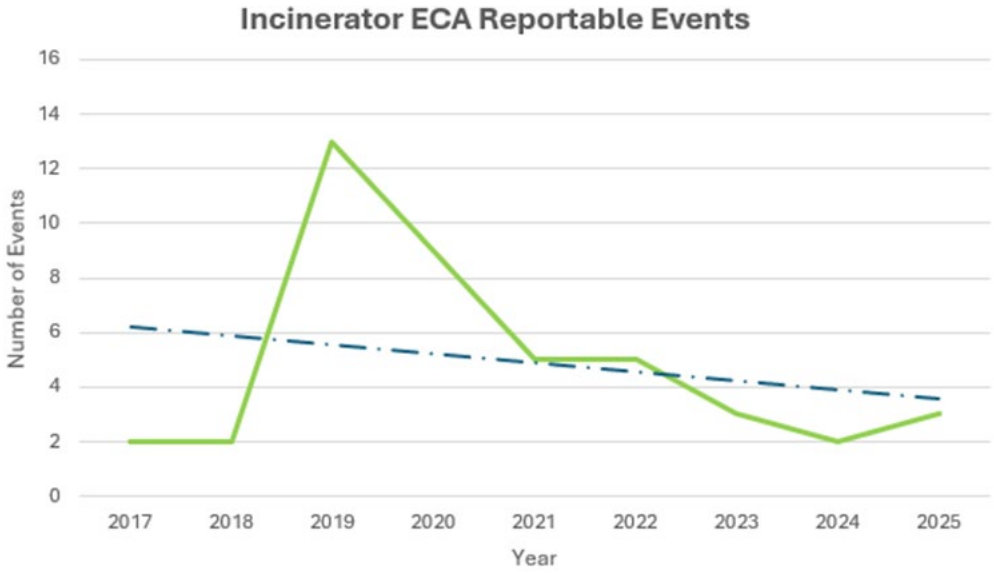


Figure 21: Incinerator ECA Events

2.9.1.3 Biodiversity

The WWMF site has a strong Biodiversity program and Natural Areas Management program to protect, maintain and enhance the natural environment, species and wildlife habitat on, and in the vicinity of, the WWMF.

There has been a variety of on-site biodiversity initiatives at the WWMF which support species and habitats across the site. Projects include:

- avian monitoring of nest boxes,
- Butternut inventorying, health monitoring, and seed collection for reproduction, and
- migratory and marsh bird monitoring and habitat protection for the Eastern Meadowlark, a species at risk on our site.

Habitat enhancement projects at site include:

- native pollinator gardens,
- tree plantings,
- bird strike prevention measures at the OPG office buildings,
- installation of bird boxes, and
- establishing no mow areas for grassland species.

OPG is also participating in the Long-Term Snake Monitoring program with Ontario Nature where coverboards on the WWMF site are surveyed for snake observations.

The NSS staff continues to enhance habitat offsite through the ongoing partnership with the Invasive Phragmite Control Center. Since 2018, the Invasive Phragmite Control Center has been removing non-native, invasive phragmites and OPG has been conducting annual aerial drone surveys to monitor the progress of these efforts. OPG has also conducted environmental community engagement during local tree planting events, the Huron Fringe Birding Festival, and Pumpkinfest in Port Elgin.



OPG submits applications for Tandem Global (formerly Wildlife Habitat Council) certification of select sites. Tandem Global is an international non-profit, non-lobby group that promotes and independently certifies habitat conservation and management on corporate lands through partnerships and education. The WWMF currently holds the gold standard Tandem Global certification for the period of 2024 to 2026, which is the top tier certification.

2.9.2 Environmental Risk Assessment

Consistent with CNSC REGDOC-2.9.1 *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, Version 1.2, OPG updates the WWMF site Environmental Risk Assessment (ERA) at least once every five years. The purpose of the WWMF site ERA is to assess potential human health and ecological risks to the most critical receptor from exposure to radiological contaminants, conventional contaminants, and physical stressors (e.g. noise) present in the environment as a result of site operations. This is achieved through completion of a human health risk assessment and an ecological risk assessment.

The 2026 ERA, *Environmental Risk Assessment 2026 Update for Nuclear Sustainability Services – Western Waste Management Facility*, focused on the years 2021 to 2025 and meets the requirements of CSA N288.6-22 *Environmental risk assessments at class I nuclear facilities and uranium mines and mills*. The ERA is reviewed and updated based on ongoing environmental monitoring data, operational experience, and advances in scientific knowledge.

The results of the ERA inform the Environmental Monitoring program and Effluent Monitoring programs, as per CSA N288.4-10, *Environmental monitoring program at class I nuclear facilities and uranium mines and mills,* and CSA N288.5-22, *Effluent monitoring programs at class I nuclear facilities and uranium mines and mills*. These programs are also used as guidance for the ERA by providing information on effluent concentrations and loading, and by providing environmental data to assist in model calibration and validation.

The 2026 ERA confirms that the WWMF continues to operate in a manner that is protective of the health of the public and the environment. The ERA results are intended to be conservative to not underestimate any risk to the public and the environment.

The 2026 ERA report was submitted to the CNSC and details of the ERA were shared with Indigenous Nations and communities. OPG is committed to facilitating Indigenous engagement on ERAs and will continue to work with Indigenous Nations and communities to develop comprehensive and ongoing engagement around ERAs.

2.9.2.1 Predictive Environmental Risk Assessment

The purpose of a Predictive Environmental Risk Assessment (PERA), previously referred to as a Predictive Effects Assessment (PEA), is to identify and assess the potential interactions with the environment as a result of future site activities and to determine whether adequate provision for the protection of the environment and health of persons has been made.

In 2016, OPG undertook a PEA to support the WWMF licence renewal application process (2017 licence renewal) to evaluate the potential for adverse effects to human health and the environment from the activities associated with expansion of the site to accommodate additional waste storage buildings.

In 2025, OPG issued a PEA Addendum, *2024 Predictive Effects Assessment Addendum for the Western Waste Management Facility Expansion Project – Multi-Purpose Storage Building* to demonstrate



continued protection of human health and the environment based on an updated storage plan and building design for the north portion of the WWMF site.

Both the 2016 PEA and the 2025 PEA Addendum reports concluded that there are no potential adverse effects predicted to human health or the environment from continued operation of the WWMF site.

2.9.3 Assessment and Monitoring

OPG maintains an Environmental Monitoring Program (EMP) in the vicinity of the WWMF site in accordance with licence requirements. The EMP complies with CSA N288.4-10, *Environmental Monitoring Programs at Nuclear Facilities and Uranium Mines and Mills*. The scope of the WWMF EMP encompasses protection of both the public and the environment from nuclear substances, hazardous substances, and physical stressors resulting from operations at the WWMF site.

Additionally, the Bruce Power Environmental Monitoring Program for Bruce A and B Nuclear Generating Stations as required by their licence covers the overall Bruce nuclear site operations, which includes the WWMF. The annual public dose attributed from the operations of the Bruce Nuclear Site during the licence period has consistently been a very small fraction of the public dose limit of 1,000 µS/year.

OPG reports the results of the WWMF site specific facility EMP annually to the CNSC. The report is also made available to the public on www.opg.com and is a regular topic of engagement with Indigenous Nations and communities. The Bruce Power EMP for the overall Bruce Nuclear Site is available on www.brucepower.com.

2.9.3.1 Groundwater Protection and Monitoring Program

The WWMF Groundwater Protection and Monitoring program was established to confirm the predominant on-site groundwater quality and flow characteristics of the WWMF site and to detect any emergent issues. The overall objective of the program is to ensure there are no adverse off-site impacts from contaminants in groundwater.

In 2021, the WWMF implemented the requirements of CSA N288.7-15, *Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills*. This standard focuses on both groundwater monitoring and groundwater protection. As of June 30, 2025, OPG has been compliant with CSA N288.7-23.

As part of the WWMF's annual groundwater monitoring program, samples are collected from various groundwater wells and subsurface drainage locations at the WWMF site. Collected samples are analyzed for tritium with the sampling points including monitoring wells and subsurface drainage features. These samples are analyzed statistically to identify any trends.

From 2017 to 2025, the groundwater data collected from many of the key areas at WWMF indicate that tritium concentrations are consistent with results from previous years with expected fluctuations associated with on-going operations. Where tritium concentrations have been elevated above background conditions historically, they are generally showing improvement (decreased concentrations). In a small number of wells where tritium concentrations in groundwater were showing an increasing trend, the increases are understood to be associated with historical conditions and do not represent inadvertent releases. Tritium concentrations within the site perimeter wells are at background levels indicating that elevated concentrations of tritium are not migrating off-site.



Water level elevation data collected as part of the WWMF site's annual *Groundwater Protection and Monitoring* program has shown that groundwater flow patterns over the licence period remained consistent with historical interpretations. The 2024 WWMF Shallow Groundwater Contour Map is provided in Figure 22. The flow directions are complex in this hydrostratigraphic unit, which is considered to reflect influences from subsurface drainage infrastructure and the heterogeneous nature of the till/fill material. The shallow groundwater unit is inferred to discharge to the South Railway Ditch and other drainage ditches at the WWMF (e.g. perimeter ditches in the laydown area) which ultimately discharge to Lake Huron.

Groundwater flow in the middle sand aquifer is directed towards the east (Figure 23). Groundwater in the middle sand aquifer also flows downward into the bedrock. In the bedrock aquifer, groundwater is inferred to flow north towards Lake Huron, as shown in Figure 24.

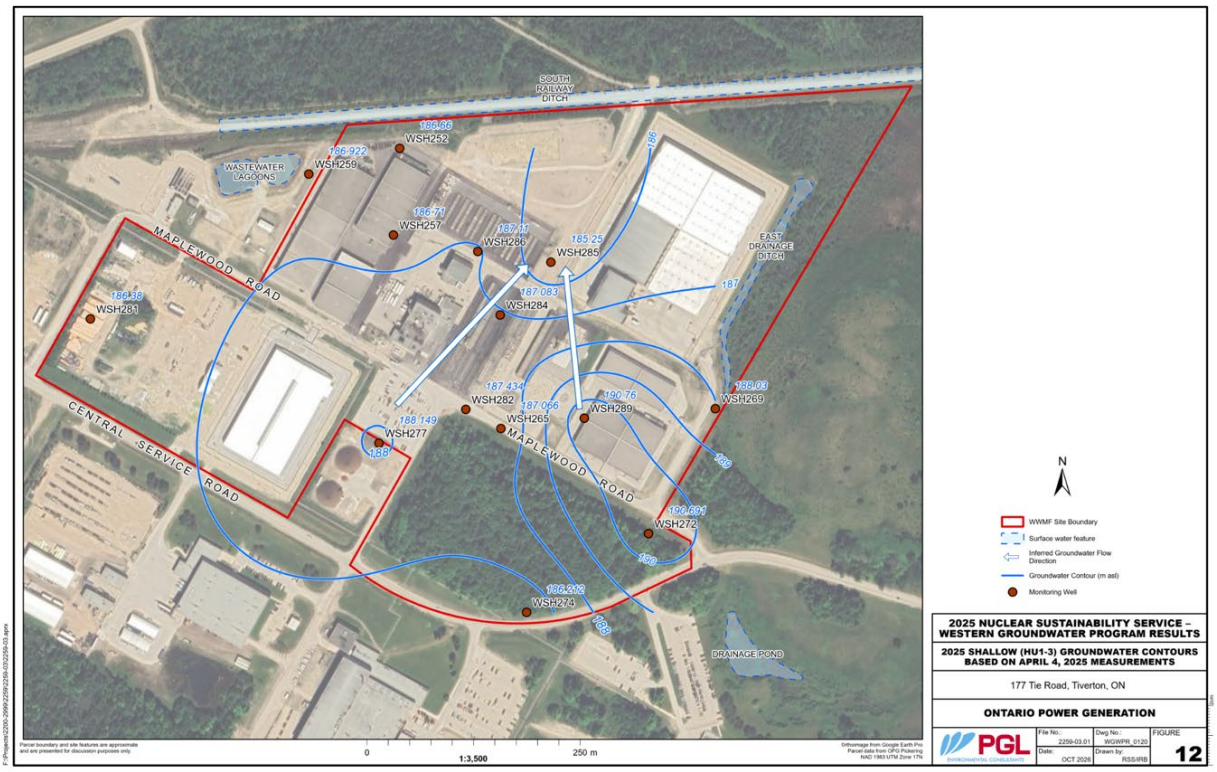


Figure 22: 2025 WWMF Shallow Groundwater Contour Map

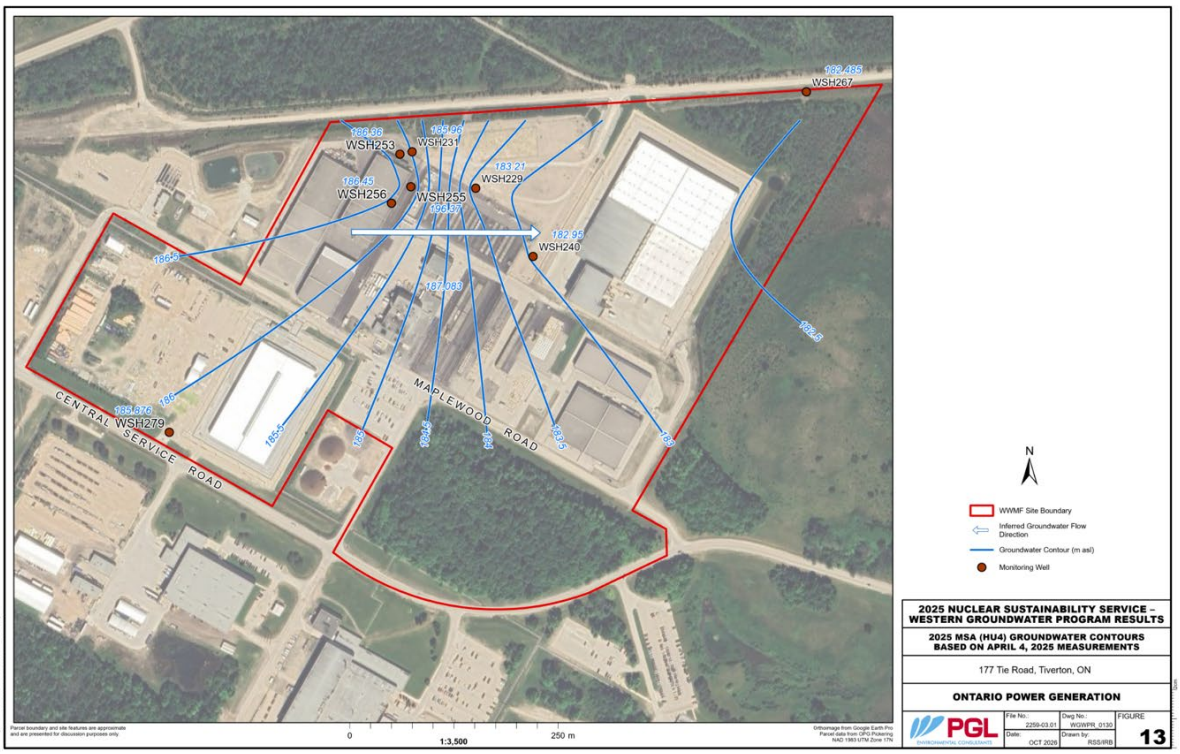


Figure 23: 2025 WWMF Middle Sand Aquifer Groundwater Contour Map



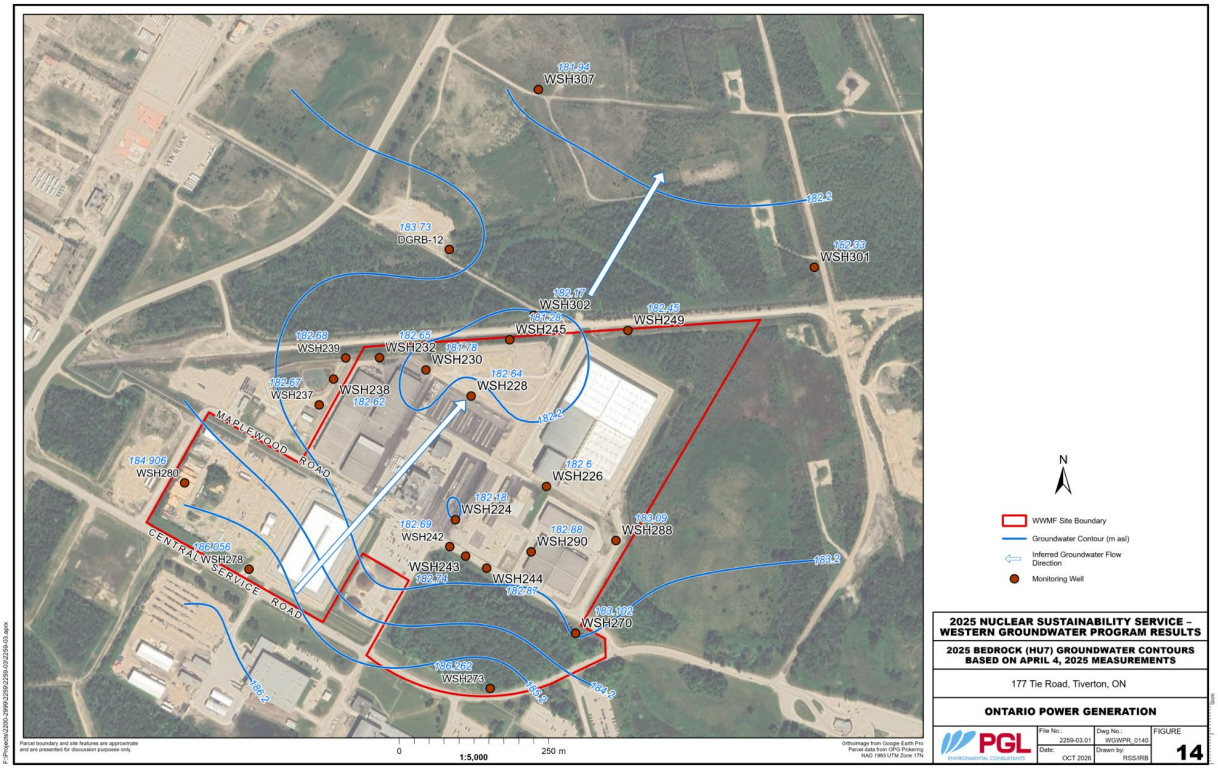


Figure 24: 2025 WWMF Bedrock Groundwater Contour Map

2.9.4 Effluent and Emissions Control

2.9.4.1 Radiological Emissions to Air and Water

The WWMF site effluent monitoring program is compliant with CSA N288.5-22, *Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills*. The objectives of the effluent monitoring program include to:

- Demonstrate compliance with authorized release limits and any other regulatory requirements concerning the release of nuclear and hazardous substances from the source.
- Demonstrate adherence to internal objectives and targets set on release amounts, for purposes of effluent control.
- Confirm the adequacy of controls on releases from the source.
- Provide an indication of unusual or unforeseen conditions that might require corrective action or additional monitoring.
- Provide data to assess the level of risk on human health and safety, and potential biological effects in the environment of the nuclear and hazardous substances of concern released from facility.
- Confirm predictions in the environmental impact statement made through the environmental review process.
- Provide assurance to the public on the effectiveness of effluent and emissions control.



- Provide data which, when combined with the results of environmental monitoring and modelling, can be used to test or refine the models used in the ERA or dose assessments.

A *Site Emissions Monitoring Plan* addresses design requirements, reporting requirements, and sampling/analytical procedures use, in alignment with CSA N288.5-22.

Derived Release Limits

Derived Release Limits (DRLs) are calculated using CSA N288.1-20, *Guidelines for calculating derived release limits for radioactive material in airborne and liquid effluents for normal operation of nuclear facilities* and submitted to the CNSC. The DRL for a given radionuclide is the release rate to air or surface water during normal operation of a nuclear facility that would cause an individual of the most highly exposed group around the WWMF site to receive and be committed to a dose equal to the annual regulatory dose limit over the period of a calendar year.

DRLs are used to establish controls on the releases of radioactive materials and are calculated for radionuclides of potential dose significance in effluent streams, to facilitate the control, reporting, and regulation of radionuclide emissions. New DRLs were implemented as of January 1, 2026, and are documented in the *Derived Release Limits for the Western Waste Management Facility* report. The DRL values up to the end of 2025 are shown below in Table 14. For operational purposes, the airborne DRLs are divided into weekly amounts and waterborne DRLs into monthly amounts.

Table 14: WWMF - Derived Release Limits

Release Category	Radionuclide	DRL (Becquerel/year)	Operational DRL (Becquerel/week)
Air	Tritium	3.45E+17	6.64E+15
	Particulate	6.65E+11	1.28E+10
	Iodine-131	1.99E+12	3.83E+10
	Carbon-14	2.41E+15	4.63E+13
	Gross Alpha	3.36E+11	6.46E+09
Release Category	**Radionuclide**	**DRL (Becquerel/year)**	**Operational DRL (Becquerel/month)**
Water	Tritium	3.59E+15	2.99E+14
	Carbon-14	7.02E+12	5.85E+11
	Gross Beta-Gamma	4.01E+10	3.34E+09
	Gross Alpha	7.09E+09	5.91E+08



Action Levels

An Environmental Action Level (EAL) for an environmental release is an effluent monitoring level (concentration, activity, rate, etc.) that, if exceeded, triggers an investigation to determine whether a loss of control of the *Environmental Protection Program* has occurred, and enables corrective action, if warranted. In 2017, a standardized methodology for calculating and applying EALs at Class 1 nuclear facilities and uranium mines and mills was developed and documented in CSA N288.8-17, *Establishing and implementing action levels for releases to the environment from nuclear facilities*. The primary change introduced by the standard is that EALs are to be calculated based on the historical performance of the site.

The current licence requires EALs to be in place for the WWMF. The current EALs in the Licence Conditions Handbook for the WWMF are shown in Table 15. Exceeding an EAL requires notification and reporting to the CNSC, investigation of the cause, and corrective action as required.

Table 15: WWMF – Action Levels for (EAL) for Environmental Releases

Release Category	Radionuclide	EALs: Gaseous Releases (Becquerel/week)
Air	Tritium	6.91E+14
	Particulate	1.33E+09
	Iodine-131 (mfp)	3.98E+09
	Carbon-14	4.82E+12
	Gross Alpha	6.72E+08
Release Category	**Radionuclide**	**EALs: Liquid Releases (Becquerel/month)**
Water	Tritium	2.87E+13
	Carbon-14	5.62E+10
	Gross Alpha	5.67E+07
	Gross Beta-Gamma	3.20E+08

In 2021, the EALs for the WWMF site were evaluated against the requirements of CSA N288.8-17. The assessment determined that radiological emissions from the WWMF were below the threshold requiring EALs. These results were communicated to and accepted by the CNSC. Accordingly, as part of this licence renewal, OPG is requesting an amendment to Licence Condition 9.1 to remove the following text from the Licence Condition: "...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." This amendment would ensure consistency between the Licence Condition and the action level framework established in CSA N288.8-17.



Airborne Emissions

During the current licence term, the emissions from the WWMF have consistently been orders of magnitude below DRL values as shown in Figure 25.

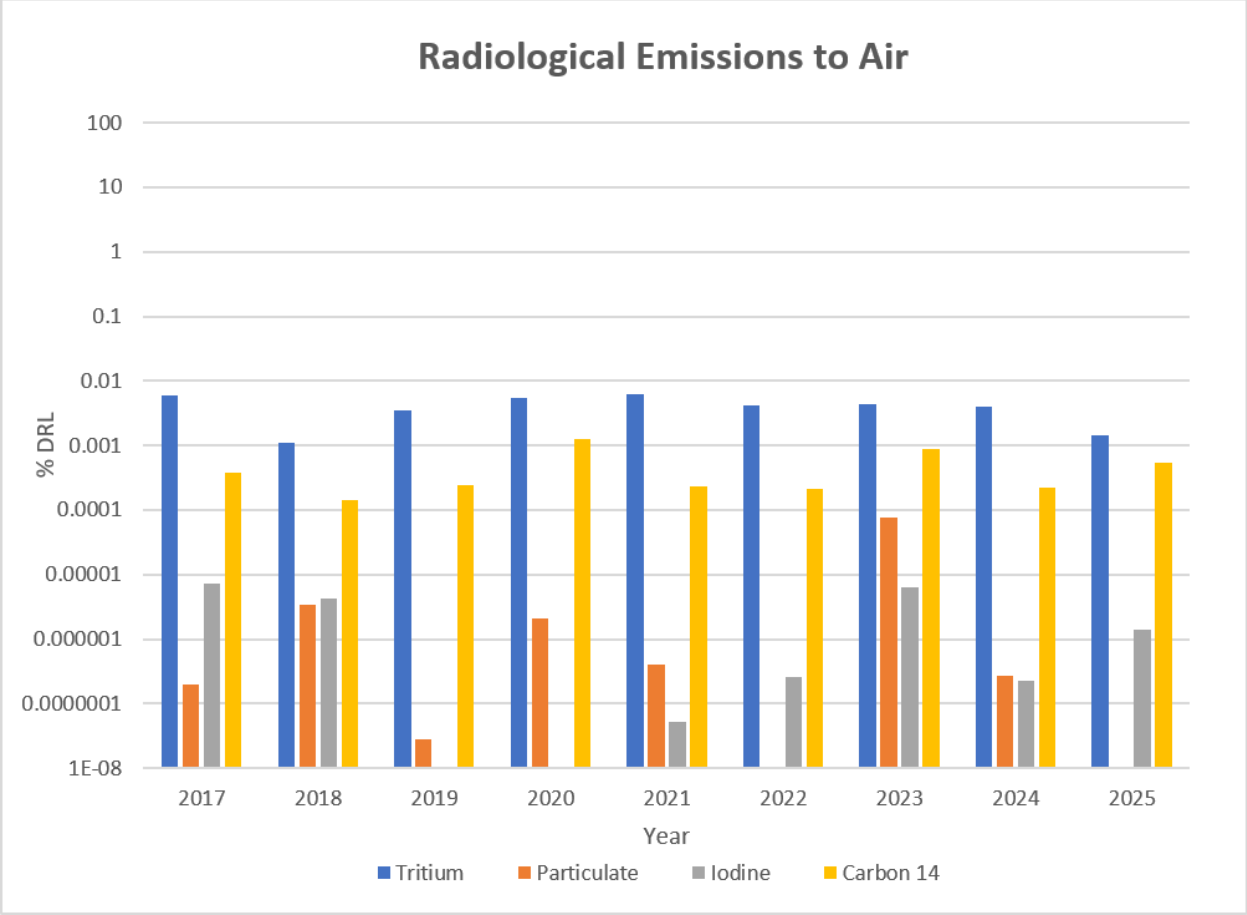


Figure 25: Radiological Emissions to Air

Note: Action levels are set at 10% of the weekly DRL.

Note: Gross Alpha is not monitored at the WWMF since it does not meet the threshold for monitoring.

At the WWMF, the WVRB radioactive waste incinerator stack and ventilation exhaust stack are monitored for gaseous effluent releases of tritium, particulate and iodine-131 while carbon-14 emissions are monitored on the incinerator stack only. The TPMB ventilation stack is monitored for tritium and particulate emissions. The airborne results are compiled weekly and compared to the applicable weekly DRL. Ventilation exhaust is equipped with High-Efficiency Particulate Air (HEPA) filters and are tested in accordance with the requirements of CSA N288.3.4, *Performance testing of nuclear air-cleaning systems at nuclear facilities*.

The UFDSF ventilation stack was formerly monitored for radioactive particulate for confirmation purposes. Past monitoring results have consistently demonstrated negligible particulate emissions from this building.



Based on the monitoring results over the years and in alignment with the monitoring standards, this monitoring was determined to be no longer required. As per CNSC acceptance, this particulate emissions monitoring was discontinued in 2024.

Waterborne Emissions

There are no direct discharges to water from the WWMF site. Any water removed from the WWMF building sumps or storage structures is transferred to Bruce Power for discharge in their Active Liquid Waste system and is accounted for in that station's emissions. Surface water and subsurface groundwater drainage monitoring was formerly part of waterborne emissions prior to 2021. However, since there are no direct discharges to water at the WWMF, this monitoring was transitioned to the *Environmental Risk Assessment* program under CSA N288.6-12 and the *Groundwater Protection* Program under CSA N288.7-23.

2.9.4.2 Conventional Emissions

Monitoring and reporting on emissions of conventional substances are completed in accordance with provincial and federal regulatory requirements and submitted to provincial and federal agencies annually. The WWMF has two ECAs from the MECP for air emissions and stormwater management.

Incinerator

Under the Air ECA, continuous monitoring of the incinerator is completed for carbon monoxide, nitrogen oxides, hydrogen chloride, oxygen, temperature, and opacity to ensure optimal waste combustion and emissions treatment is being achieved. If any of these parameters exceeds a performance requirement in the ECA, the waste feed is suspended until the performance requirement is met and the MECP is notified of the exceedance with the cause and corrective actions.

Source testing of incinerator emissions is also completed once a year to quantify overall emission rates of particulate matter, metals, polychlorinated biphenyls, dioxins and furans, polycyclic aromatic hydrocarbons and volatile organic compounds. The annual source testing results indicate that incinerator emissions are well within the regulatory limits. Table 16 provides a summary of key parameters of the source testing results since 2017 for incinerator stack emissions in comparison to the allowable limits specified in the Environmental Compliance Approval.

Table 16: Incinerator Source Testing Results

Parameter		Particulate Matter	Mercury	Dioxins & Furans	Total Hydrocarbons
Units		**mg/Rm³**	**Mg/Rm³**	**pg TEQ/Rm³**	**ppm**
Allowable Limit		**14**	**20**	**80**	**50**
Measured Concentration	2017	0.95	<0.22	2.04	0.80
	2018	--	--	--	--
	2019	--	--	--	--



2020	0.60	<0.30	14.2	16.10
2021	0.90	<0.32	21.1	1.04
2022	0.55	<0.38	14.7	1.41
2023	0.24	<0.32	7.66	1.41
2024	0.34	<0.32	3.91	1.74
2025	<0.390	<0.491	<21	0.783

Note: Emission source testing was exempted for 2018 and 2019 with MECP approval due to the unavailability of solid waste burning.

Stormwater

The ECA for industrial sewage works, related to the WWMF stormwater system is designed to ensure the stormwater from the works is essentially free of floating and settleable solids and does not contain oil or any other substances in amounts sufficient to create a visible film, sheen, foam, or discolouration on the receiving area.

The WWMF stormwater system utilizes oil and grit separators and a stormwater management pond to treat the stormwater before it is discharged into the natural environment. The stormwater management pond is monitored for total suspended solids to ensure it is working as designed and the oil and grit separators are inspected routinely and cleaned out per the manufacturer's manual. During the licence period (2017 to 2025) inspections and monitoring confirm the WWMF stormwater management system is operating per the design requirements.

2.9.5 Protection of the Public

The WWMF site is located within the Bruce Nuclear Site that includes the Bruce Nuclear Generating Stations operated by Bruce Power. Bruce Power conducts a full EMP for the overall Bruce Nuclear Site (including the WWMF), which includes radiological monitoring of off-site air, water (drinking water and lake water), aquatic samples (fish, sediment, and beach sand), and terrestrial samples (fruits, vegetables, milk, soil and animal feed). Data gathered from this program, along with Bruce Nuclear Site emissions data, are used by Bruce Power to assess the annual radiological dose to members of the public living or working in the vicinity of the Bruce Nuclear Site.

The effective dose limit for members of the public as set out in the Radiation Protection Regulations, is 1,000 μSv/year. As shown in the logarithmic scale in Figure 26, dose to the public from operations on the Bruce Nuclear Site is a very small fraction of the annual legal dose limit.



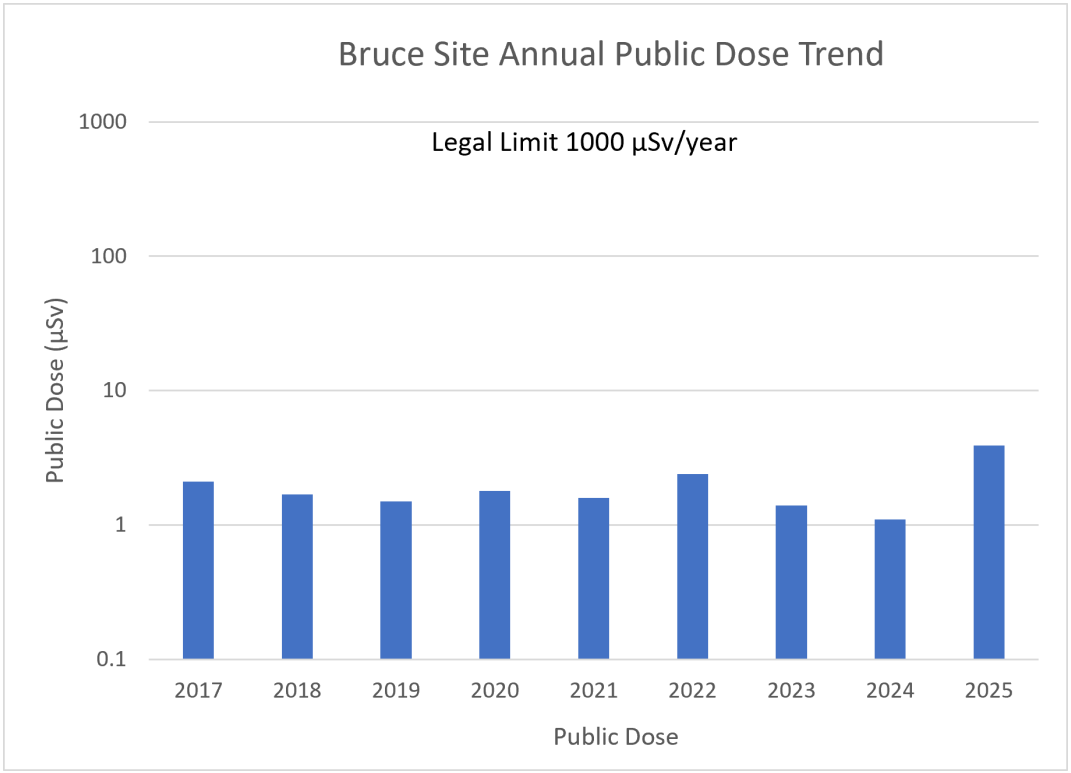


Figure 26: Bruce Nuclear Site Annual Public Dose Trend

The public radiological dose estimate from the WWMF operations is achieved by estimating the WWMF's contribution to Bruce Power's public radiological dose calculation by comparing the relative levels of their monitored radiological emissions. The public dose arising from the WWMF operations is a portion of the total dose from the Bruce Site operations. Thus, the dose to members of the public from the WWMF operations is well below the regulatory limit.

Results of the public dose assessment are published in Bruce Power's Annual Environmental Protection report which is available to the public on www.brucepower.com. Also, annual OPG EMP reports for the WWMF are available on www.opg.com, under Regulatory Reporting.



2.10 Emergency Management and Fire Protection

The WWMF has effective nuclear, conventional and fire emergency preparedness and response programs that meet regulatory requirements and related objectives. Emergency preparedness measures and fire protection response capabilities are in place at the WWMF to prevent and mitigate the effects of onsite and off-site nuclear and hazardous substances releases, and fire hazards in order to protect workers, the public, and the environment.

In accordance with the contractual agreements between OPG and Bruce Power, Bruce Power provides Emergency Response Services to OPG for all fire, medical, rescue and spill emergencies that arise at the WWMF. Such services are available 24 hours a day, 365 days a year.

In accordance with the *Provincial Nuclear Emergency Response Plan* (PNERP) and the *Bruce Power Nuclear Emergency Response Plan*, OPG staff at the WWMF follow the emergency response instructions from Bruce Power for a Station Emergency at either Bruce Power Nuclear Generating Station.

2.10.1. Emergency Response Plan for Radioactive Materials Transportation

OPG's *Transportation Emergency Response Plan* (TERP) provides guidelines to ensure adequate emergency response capability is in place to support a coordinated response in the event of a transportation incident involving radioactive material.

The *Radioactive Materials Transportation Emergency Response Plan* includes:

- Emergency response capability for all off-site shipments.
- Defined roles, responsibilities, and notification protocols.
- Written reporting to CNSC within 21 days of a dangerous occurrence, as per Packaging and Transport of Nuclear Substances Regulations Section 38.
- Maintenance of an Emergency Response Assistance Plan and supporting documentation for Transport Canada.

OPG's TERP is activated through a 24-hour emergency contact system, upon notification of a transportation incident involving radioactive material. OPG is responsible for dispatching a Response Team within 90 minutes of notification.

On-site incidents at the WWMF fall under the *Bruce Power Emergency Plan,* not OPG's TERP.

2.10.2 Nuclear Emergency Preparedness and Response

Staff at the WWMF follow *Employee Emergency Response*, to ensure appropriate actions are taken during emergencies such as fire, medical incidents, radiation events, severe weather, tornadoes, seismic events, and station blackouts.

Nuclear emergency planning at the WWMF is aligned with both the PNERP and the *Bruce Power Nuclear Emergency Response Plan.* Staff at the Bruce Site, including those at the WWMF, adhere to Bruce Power's instructions during a station emergency at a Bruce Power Nuclear Generating Station.

The *Bruce Power Nuclear Emergency Response* Plan defines the key program elements, objectives, roles, and responsibilities required for an effective response to nuclear emergencies. This plan applies to the entire Bruce Power site, including the WWMF, and outlines Bruce Power's capability to respond to nuclear emergencies with its primary objective to protect the public, employees, and the environment.



While potential scenarios at the WWMF do not pose a radiological hazard to the public and therefore do not require protective actions under the PNERP, there may still be risks to on-site personnel on the Bruce Nuclear site. In such cases, the procedures outlined in the Bruce Power Nuclear Emergency Response Plan are implemented to manage the situation, particularly if a station emergency is declared or if support from the Emergency Response Organization is needed.

WWMF on-site staff participate in annual building evacuation drills, personnel accounting drills, and early dismissal drills for non-essential personnel. Due to the frequency of severe winter weather, staff are regularly involved in site evacuations during early dismissal days.

OPG is in compliance with CNSC REGDOC 2.10.1 *Nuclear Emergency Preparedness and Response, Version 2*. OPG is committed to enhancing and refining its Emergency Preparedness program to ensure compliance with evolving regulatory requirements and industry best practices. OPG maintains a robust framework for continuous improvement by incorporating valuable insights and lessons learned from drill and exercise reports. These reports play a pivotal role in identifying areas for enhancement, enabling OPG to continuously strengthen its preparedness, response capabilities, and overall program effectiveness.

2.10.3 Conventional Emergency Preparedness and Response

Staff at the WWMF follow the *Employee Emergency Response* procedure, to identify emergency response requirements for fire, medical, radiation, severe weather, tornado, seismic events, and station blackout conditions.

Response to non-radiological adverse conditions is managed in accordance with Bruce Power's emergency response and station procedures. Staff participate in drills and exercises as required by the *Bruce Power Nuclear Emergency Response Plan*.

2.10.4 Fire Emergency Preparedness and Response

The purpose of the *Fire Protection* Program is to define the key program elements, objectives, and roles and responsibilities with the overall goal to minimize the risks and consequences of fire to OPG Nuclear facilities.

The key program elements for the WWMF are:

- Fire Safety Plan
- Inspections, Testing, Maintenance
- Analysis, Assessments, Reviews, Audits
- Drills

The fire protection codes and standards that the WWMF complies with are:

- CSA N393-22, *Fire protection for facilities that process, handle or store nuclear substances,* implemented December 20, 2024;
- NBCC 2020, *National Building Code of Canada*, implemented December 19, 2025; and
- NFCC 2020, *National Fire Code of Canada,* implemented December 19, 2025.



2.10.4.1 Current Operations and Results

Highlights

During the current licence period:

- Annual Fire drills were performed in accordance with the CSA N393-22 and the *National Fire Code of Canada* (NFCC) 2020, and the results from these drills have been satisfactory.
- Third-party reviews, analysis and audits were completed confirming compliance with CSA N393-22 requirements.
- OPG revised the *NSS Combustible Material Safety Instruction* in December 2025, to ensure that all transient combustible materials are minimized in NSS facilities, including the WWMF.

The new structures within the WWMF will comply with CSA N393 (2022), NBCC (2020), and NFCC (2020).

Governance

The site-specific Fire Protection Program requirements at the WWMF have been integrated into OPG Nuclear's overall *Fire Protection Program* to promote a consistent fire protection strategy across all nuclear facilities. The WWMF fire protection procedures and related elements derive their authority from this program, and WWMF governance has been reviewed against OPG Nuclear's program. This comprehensive approach supports adequate fire protection by reducing both the likelihood and potential impact of fire events at the facility.

Fire Safety Plan

The WWMF *Fire Safety Plan* provides direction with respect to fire prevention, fire protection, emergency procedures, training and drills. The *Fire Safety Plan* is reviewed and revised accordingly on an annual basis to ensure it reflects current field conditions and practices. The *Fire Safety Plan* at the WWMF meets the requirements of the NFCC.

Inspection, Testing, and Maintenance

During the current licence period, in accordance with the WWMF WFOL, the inspection, testing and maintenance of the fire detection and suppression systems was performed at the required frequency, as stipulated in the NFCC (2020). The inspection and testing were performed by OPG and reviewed by a third party tri-annually, to confirm the WWMF fire systems have been operated, inspected, tested, and maintained in accordance with the NFCC (2020) and the standards listed therein.

The 2026 independent third-party Fire Protection Program Audit (FPPA) identified seven (7) minor findings including one recurring item from 2023 audit. All findings are being addressed through OPG's work management process. The overall conclusion of the FPPA is that the WWMF and its Fire Protection Program meet the objectives of CSA N393-22 and the NFCC–2020 requirements.

Fire Drills

During the current licence period, fire drills were performed in accordance with the CSA N393 and NFCC. The results from the drills have been satisfactory with no major adverse findings. The full-scale fire drills were performed with the participation of the Bruce Power Emergency Protective Services (BP EPS).



Analysis, Assessments, Reviews, Audits

To maintain the compliance of the WWMF with CSA N393, the following required third-party reviews, analysis and audits have been completed within the intervals stipulated in CSA N393:

- Fire Hazard Assessment.
- Code Compliance Review.
- Fire Protection Program Audit, including Inspection, Testing and Maintenance of Fire Protection Systems.
- Annual Facility Condition Inspection.
- Fire Response Needs Analysis.

The results of the compliance reviews were submitted to the CNSC as required by the WWMF WFOL and CSA N393. The analysis, assessment and audit reports have confirmed the overall compliance of the WWMF with the requirements of CSA N393.

Fire Protection Response

As per a Memorandum of Understanding (MoU) between Bruce Power and OPG, Bruce Power provides emergency response services to OPG for fire, medical, rescue and spill emergencies that arise at the WWMF.

Bruce Power Emergency Protective Services is familiar with the WWMF site, participating with the facility's annual fire drills at the WWMF.

NSS Fire Impairment Manual

The *NSS Fire Impairment Manual* describes how OPG manages impairments for OPG's NSS facilities, including the WWMF. This manual provides resource information to guide trained staff who are directly involved with planned and unplanned impairments to the fire protection system in evaluating, establishing, planning, controlling and executing outages of fire protection systems. The manual also provides detailed compensatory measure information for impaired fire systems.

NSS Combustible Material Safety Instruction

OPG revised and issued the *NSS Combustible Material Safety Instruction* in December 2025 to ensure that all transient combustible materials are minimized, properly assessed, analyzed, and authorized before being placed in the waste management facilities, including the WWMF. Combustible materials, combustible equipment, and ignition sources, other than that forming part of the approved facilities design that is located outside of designed storage areas, shall be eliminated. When elimination is not practical, combustibles shall be minimized, controlled, analyzed, and located in accordance with this combustible material safety instruction.

Engineering Change Control

All new structures and existing design modifications are reviewed for fire protection impact through the *Engineering Change Control* process which is described in section 2.5.1.



2.10.4.2 Future Plans and Improvements

Governance

Fire Protection governance will be frequently reviewed to maintain the alignment of NSS, including the WWMF, with OPG Nuclear.

Fire Protection - Detection System:

- The WWMF will continue to perform inspections, testing, and maintenance of the fire detection system as per the current preventive maintenance schedule.
- Replace the existing (obsolete) fire panels at the WWMF.

Fire Protection - Suppression System:

- The WWMF will continue to perform inspection, testing, and maintenance of the fire suppression systems as per the applicable codes and standards.
- Upgrade the current Carbon Dioxide (CO_2) tanks fill lines to ensure that CO_2 delivery process does not impact the safety and functionality of CO_2 fire protection system.

Fire Protection of New Structures

When the design of the new structures is initiated by the Design Engineering team, as per the *Engineering Change Control Process*, the *Fire Protection Impact Evaluation* form is prepared. This form is sent to the OPG Fire Protection organization to perform a review and provide comments.

As required, OPG's Fire Protection organization will also provide support to the Design Engineering team, by providing interpretation of code and standard requirements, as well as reviewing the proposed new structure's Fire Hazard Assessment, Code Compliance Review and Third-Party Review reports.

The construction of new structures within the WWMF will comply with CSA N393-22, NBCC 2020, NFCC 2020, and applicable fire Codes and Standards. The new structure's Fire Hazard Assessment report, Code Compliance Review report and the results of the Third-Party Review, will be added to the overall site WWMF Fire Hazard Assessment report, Code Compliance Review report, and Fire Response Needs Analysis report during the next review/update cycle of these reports, as stipulated in CSA N393-22.

2.11 Waste Management

OPG has a mature and effective waste management program that ensures appropriate measures are in place to minimize the generation of both radioactive and conventional waste and, where waste is generated, to control and manage its safe handling, storage, and disposal. This program ensures the safety of workers and the public and facilitates continuous improvement in environmental performance supporting OPG's *Environmental Policy*.

OPG's *Environment Health and Safety Managed Systems* establishes the framework for meeting the requirements of ISO 14001, *Environmental Management Systems*, including waste management activities. Waste management activities are conducted in compliance with applicable federal and provincial waste management regulations which include general waste management practices, transportation of dangerous goods, Polychlorinated Biphenyl management, Ozone Depleting Substances management, and CNSC requirements for nuclear facilities.



The *Nuclear Waste Management Program* is a well-established program applicable to all of OPG's nuclear operations. The program ensures that effective controls are in place to minimize the generation of radioactive waste and to manage its handling, storage, and disposal. Activities are performed in accordance with OPG's licensing basis, and governing documents that prescribe controls and responsibilities to ensure the activities are carried out in a safe and effective manner by qualified personnel.

The program implements the requirements of:

- CNSC REGDOC-2.11.1 *Waste Management*,
- CSA N292.0-19 *General principles for the management of radioactive waste and irradiated fuel*, and
- CSA N292.4-23 *Storage of radioactive waste and irradiated fuel*.

Program effectiveness is verified through audits and self-assessments conducted in accordance with OPG's *Management System* and internal governance requirements. These activities confirm compliance with regulatory requirements and support the identification and implementation of opportunities for continual improvement.

All waste handling and management activities are conducted in accordance with OPG's *Radiation Protection* Program. Waste streams are characterized, segregated, processed, and managed using established controls and industry best practices to protect workers, the public, and the environment while supporting waste minimization objectives. Radioactive waste generated at the WWMF is retained onsite for interim storage. Additionally, OPG's RP program ensures the safe transfer of radioactive materials on site.

2.11.1 Waste Characterization

Waste Characterization supports the *Nuclear Waste Management* program ensuring that waste is sufficiently characterized, and the characteristics (i.e. physical, chemical, biological and/or radiological characteristics) are documented to meet the requirements at each step of the waste lifecycle, including generation, handling, packaging, transportation, processing, storage and disposal.

CANDU used fuel has historically been characterized and documented to support the development of safe handling and storage requirements. The *Nuclear Waste Characterization* procedure documents the requirements for the characterization of L&ILW and has recently been updated to comply with the requirements of CSA N292.8-21, *Characterization of radioactive waste and irradiated fuel,* including guidance on preparing a waste characterization plan.

2.11.2 Waste Minimization

The objectives of WWMF's waste minimization activities are to:

1. minimize the overall volume of waste generated,
2. maximize diversion of materials to the conventional waste streams, thereby reducing the quantity of waste that must be treated and managed as radioactive waste requiring long term storage, and
3. minimize the volume of radioactive waste requiring long-term storage through effective sorting and segregation for maximum volume-reduction opportunities.



The WWMF continues to strive to reduce its environmental footprint by reducing waste generated. Waste minimization is a shared responsibility amongst all the WWMF staff. The WWMF staff segregate waste at the point of generation into conventional, radioactive, and hazardous waste streams.

Employee task proficiency is achieved through initial training and ongoing communications around the importance of proper segregation of waste materials.

OPG implemented the reporting of a station-specific LLW diversion metric in 2021. The LLW diversion metric calculates the volume of waste material that is diverted out of the radioactive waste stream to a clean conventional waste stream. The WWMF achieved a diversion level of 28% in 2025.

The key contribution to the minimization of LLW generation (diversion) is the "Likely Clean" program. The "Likely Clean" program advises employees to segregate waste generated inside the facility into "Likely Clean" receptacles instead of "Active" receptacles, if the waste is believed to be uncontaminated. "Likely Clean" waste is surveyed and, if free of contamination, is processed as conventional waste.

2.11.3 Waste Management Practices

Waste generated from the maintenance and operation of the WWMF is segregated at the point of generation into conventional, radioactive, and hazardous waste streams in alignment with OPG's *Segregation and Handling of Radioactive Wastes* procedures. The generated waste paths can be classified as follows:

- Radioactive waste, which is further segregated into incinerable, compactible, or non-processible, is then received into the WWMF's radioactive waste inventory at the licensed waste processing and storage facility.
- Inactive "clean" conventional waste is unconditionally cleared from the facility and transferred to a landfill or recycling facility.
- Inactive hazardous industrial waste is unconditionally cleared from the facility and shipped to an approved waste receiver for disposal.

2.11.3.1 Long Term Disposal

OPG remains committed to the safe and permanent disposal of OPG's nuclear waste. Pursuant to the federal Nuclear Waste Act (2002), the Nuclear Waste Management Organization (NWMO) is responsible for implementing Canada's plan for the safe, long-term management of used nuclear fuel. Under the NWMO's plan, a deep geological repository for used fuel is expected to be in service in the mid-2040s.

Additionally, under the Federal Government's Integrated Strategy for Radioactive Waste (ISRW), the NWMO is also responsible for the long-term disposal of ILW. According to the ISRW, ILW is to be disposed in a deep geological repository with an expected in-service date by 2050.

Waste generators are responsible for the disposal of LLW. OPG remains committed to finding solutions for disposal of LLW by 2050, as outlined in Canada's Radioactive Waste & Decommissioning Policy Framework. The process for finding disposal solutions will include two-way information sharing and engagement with Indigenous communities and community stakeholders.

As OPG's waste strategy for disposal continues to evolve over the licence period, OPG will continue to engage with stakeholders and seek amendments to the WWMF WFOL as required.



2.11.4 Decommissioning Plan

The *Decommissioning* program describes the requirements and processes to safely and cost effectively decommission OPG owned nuclear facilities and provide assurances that decommissioning work will be performed in accordance with the applicable regulatory requirements and Codes and Standards. Planning for the eventual decommissioning of the WWMF is an ongoing process, taking place throughout each stage of the licensed facility lifecycle.

OPG's strategy for decommissioning its nuclear waste facilities, including the WWMF, is to dismantle the facilities once all of the waste is removed and the facility is no longer required. Since all of the waste will be removed from the facility prior to decommissioning, little residual radioactivity is expected to be present at the WWMF and as such, there will be no radiation hazard driver for deferment of decommissioning.

In accordance with the requirements of CSA standard N294-19, *Decommissioning of facilities containing nuclear substances*, REGDOC-2.11.2, *Decommissioning* and REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*, OPG has prepared a Preliminary Decommissioning Plan for the WWMF site.

The WWMF Preliminary Decommissioning Plan (PDP) was submitted to CNSC staff in support of the 2023 to 2027 Financial Guarantee submission. The requirements of CSA N294-19 *Decommissioning of facilities containing nuclear substances*, as well as any relevant domestic and international experience obtained in the previous five years were incorporated into this revision.

The next revision of the PDP will be submitted to the CNSC in 2027 as part of the 2028 to 2032 Financial Guarantee submission and updated revisions submitted every 5 years after or when required by the Commission. This revision of the PDP will meet the requirements of CNSC REGDOC-2.11.2, *Decommissioning* as well as CSA N294-19 *Decommissioning of facilities containing nuclear substances.*

The WWMF PDP describes the activities that will be required to decommission and restore the site for other OPG uses. It demonstrates that decommissioning is feasible with existing technologies, and it provides a basis for estimating the cost of decommissioning. The PDP includes schedules and cost estimates based on the assumptions that form the basis for the plan. OPG will update this plan as required to incorporate lessons learned, updates to regulatory requirements, and industry best practices.

OPG continuously monitors and incorporates best practices from the industry and has a high degree of confidence that the current plans are appropriate and sufficient.

2.12 Security

The objective of the *Nuclear Security* program is to ensure the safe and secure operation of the WWMF by supporting the protection of nuclear assets in accordance with regulatory requirements and OPG policies.

The WWMF is in compliance with CNSC REGDOC-2.2.4, *Fitness for Duty, Volume III: Nuclear Security Officer, Medical, Physical and Psychological Fitness* and CNSC REGDOC-2.12.2, *Site Access Security Clearance*.

The OPG physical security program for the WWMF is implemented through contracted security services provided by Bruce Power Security through the Bruce Site Services Agreement. Bruce Power Security implements OPG's Security program at the WWMF in accordance with OPG's policies and procedures.



The Bruce Site Security program has been rated as satisfactory or fully satisfactory in all CNSC's annual Regulatory Oversight Reports for Nuclear Power Generating sites.

The Security and Emergency Services organization within OPG has the accountability and responsibility for the effective management of security risk based on OPG's risk tolerance, the Design Basis Threat (DBT) and required compliance with CNSC Regulations and regulatory documents. The Nuclear Security program meets the expectations of the *Nuclear Management System* by establishing, implementing, maintaining and improving a nuclear security management system with a focus on OPG's high security sites that encompasses all licensing activities. This includes, but is not limited to, Security Threat Identification and Risk Assessments, which are performed annually to identify credible threats to a specific site or facility. OPG takes any credible threats identified in a Threat Risk Assessment (TRA) into account in the design of the physical protection system.

The security program is based on credible risks and vulnerabilities. In accordance with the *Nuclear Security Regulations*, the WWMF has implemented physical protection measures, including:

- Access control,
- Intrusion detection and assessment, and
- Measures designed to delay and prevent unauthorized access considering the DBT and any other credible threat identified by the TRA.

OPG's security program ensures uncompromised safety and security of the WWMF's assets and of its employees, the public and the environment. OPG is committed to continuously strengthening security performance and ensuring that security activities are subject to the same high standards of performance, accountability, and independent oversight applied to all functions that have an impact on nuclear safety.

OPG Nuclear Security has progressed towards a more proactive approach to identifying program improvements that are evident in the implementation of a Security Excellence Plan that has established a Security Excellence Meeting with the pillars of Our People, Our Performance and Our Future. The Excellence Meeting process is a strategic model that has been proven to drive continuous improvement at the OPG facility level.

OPG's Security program has a comprehensive and enhanced oversight body which includes a fleetwide functional peer team, who reviews performance and trends regularly. Security performance and results are reviewed and challenged at the Nuclear Executive Committee on a regular frequency to continually drive performance. In support of OPG's safety culture, OPG's Security organization continues to work toward improved performance in all elements of the Security program through a critical lens using effective and established managed processes, in addition to new initiatives.

OPG maintains open communication with CNSC staff in forums such as the monthly and quarterly Security Director's meeting and the Nuclear Security Advisor Group which includes security representatives from all High Security Nuclear Sites in Canada. This group is focused on ensuring nuclear security programs in Canada continue to meet future requirements, through the sharing of operating experience and the promotion of best security practices. OPG's Security organization has also formed a Compliance Audit and Governance group, dedicated to unbiased, risk-based assessments of the Security program. Through these internal self-assessments, OPG is able to monitor performance and trend worker behavior indicators, gather Key Performance Indicators data for analysis and proactively identify latent organizational or process-based gaps more effectively.



Bruce Power Security conducted the most recent Performance Testing Program exercise on June 18, 2026, with the onsite Nuclear Response Force (NRF) to test the ability of their contingency plan, the nuclear security measures and the readiness of its security personnel.

The exercise tests and evaluates the integrated response capabilities of the onsite response force against adversaries equipped within the DBT. This exercise is highly dynamic and realistic. CNSC staff observe and audit these exercises.

In accordance with the *Nuclear Security Regulations* and the Security program, security drills are regularly conducted to evaluate security physical protection systems including tactical deployment plans under realistic conditions to ensure regulatory compliance as well as to identify security improvements. Bruce Power Security maintains an ongoing MoU with the Ontario Provincial Police (OPP) for offsite tactical response support. OPG's Security organization will continue to operate at a high standard and meet the CNSC licensing requirements throughout the life of the WWMF.

2.12.1 Facilities and Equipment

The OPG Security program ensures the possession, deployment and operation of required facilities and equipment at the WWMF complies with the Nuclear Security Regulations, and CNSC REGDOC-2.12.1, *High-Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices*.

The WWMF Site Security Report describes in detail the physical security measures and systems and the security organization in place to ensure security of WWMF employees, the public and the environment in accordance with the regulatory requirements. Changes to security systems are documented in the Site Security Report and are required to be submitted to the CNSC staff.

2.12.1.1 Personnel

Entry to the UFDSF protected areas at the WWMF require all personnel to be searched for weapons and explosive substances in accordance with the *Nuclear Security Regulations*. The WWMF search facilities are equipped with dedicated equipment for conducting security searches that meet the requirements of CNSC REGDOC-2.12.1, *High-Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices*. Once personnel have passed the security search screening process, they are then required to use their proximity card and a biometric scanner, two separate personnel identification verification systems, to verify their identity and confirm they have authorization for access. This verification then activates a revolving door to enter the protected area. Upon exit from the protected areas, in accordance with the *Nuclear Security Regulations*, all personnel are monitored for Category I, II or III nuclear substances.

2.12.1.2 Vehicles

All vehicles entering the UFDSF protected areas are searched for weapons, explosive substances and unauthorized persons in accordance with the *Nuclear Security Regulations* as well as contraband and prohibited items. All vehicles, upon exit from the UFDSF protected areas are monitored for Category I, II and III nuclear material.

The WWMF has physical protection measures against forced land vehicle penetration into the protected areas. The physical protection measures are compliant with CNSC REGDOC-2.12.1, *High-Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices.*



2.12.1.3 Material Security

Searches are conducted on all packages and equipment entering the protected areas for weapons, explosive substances, and unauthorized persons, in accordance with the *Nuclear Security Regulations*, as well as contraband and prohibited items.

Nuclear fuel is protected, stored and managed in accordance with the *Nuclear Security Regulations*. Security measures include access control, detection of unauthorized access, locking hardware and key control, physical barriers, alarm response protocol, and inspection, maintenance and testing of security-related equipment. Recurring WWMF familiarization training has been implemented and conducted with all Bruce Power NRF staff.

2.12.1.4 Physical Protection Systems

In accordance with CNSC REGDOC-2.12.1 *Volume II*, the WWMF protected areas are surrounded by a security fence equipped with devices intended to detect any attempt at unauthorized entry, and to detect any tampering or component failures that could cause the system to malfunction. The system is monitored at all times by Bruce Power Security in the Central Alarm Station. Bruce Power NRF staff respond to the WWMF protected area intrusion and tamper alarms. OPG employs a Defence in Depth approach to the physical security protection system which is designed to deter, prevent, detect, assess, delay and respond.

2.12.1.5 On-site and Off-site Communication

In accordance with the Nuclear Security Regulations, Bruce Power Security has a primary communications system which is interoperable with the OPP. In accordance with the terms of a written MoU, the OPP provides off-site nuclear response force for the Bruce Power site.

2.12.1.6 Planned Activities

Future improvements planned for the WWMF include the construction of UFDSB 7 and UFDSB 8, with an anticipated in-service date of 2029. Construction plans include consideration for expansion of the protected area boundary to enclose the footprint of the new UFDSB 7 and UFDSB 8, and using leading technology for perimeter intrusion detection and assessment.

2.12.2 Response Arrangements

In accordance with the Nuclear Security Regulations, Bruce Power Security has a written MoU with the OPP to provide off-site armed response force support to the Bruce Nuclear Power Development. The OPP has agreed that any services it provides to Bruce Power, pursuant to the MoU, at the Bruce Nuclear Power Development, will include the WWMF located at that site in the event of identified security incidents.

Bruce Power's tactical response plan for the WWMF is in place that sets out clear expectations on how to provide effective response to security events including the unauthorized removal of nuclear or radioactive material or to the sabotage of nuclear facilities, as required by the *Nuclear Security Regulations.* The tactical plan implements the primary objective of Nuclear Security to make an effective intervention taking into account the CNSC DBT and any other credible threat identified by the TRA to the protected area. The OPP provides support to this tactical plan.



2.12.2.1 Security Practices

The OPG Nuclear Security organization has accountabilities and responsibilities for the delivery of security services to effectively manage security risks based on OPG risk tolerance levels, the DBT and required assurance of compliance with CNSC regulations.

In support of the WWMF operations, Bruce Power provides on-site Nuclear Security Officer (NSO) staffing. Bruce Power provides an appropriate number of qualified staff as defined by OPG. The NSOs perform all of the security functions for personnel, bulk material and vehicle searching. On-site patrolling is conducted by Bruce Power armed NRFs, capable of dealing with situations outlined in the DBT. A defensive strategy is followed as required by the *Nuclear Security Regulations*.

The OPG Security clearance process ensures personnel requiring access to OPG business units, locations, or access to OPG Confidential, OPG Confidential Exclusive or Security Protected information do not pose a risk to the facilities, its employees, or OPG assets. Persons, including OPG employees and contractors, who require unescorted access to the WWMF protected areas must comply with the applicable requirements of the *Nuclear Security Regulations* and CNSC REGDOC-2.12.2, *Site Access Security Clearance*.

Prescribed information is controlled and released only on a 'need to know' basis to those who possess the appropriate security clearance.

The trait of Vigilance is part of OPG's *Nuclear Safety and Security Culture* traits. All of OPG's staff maintain vigilance as part of OPG's defence-in-depth security strategy through requirements such as OPG's Supervisory Awareness Program, Continuous Behavioral Observation Program. This program ensures all supervisors have the skill and knowledge to recognize behaviors that might constitute a risk to health and safety of employees, the plant and the general public.

2.12.2.2 Drills and Exercises

OPG's Security program ensures that Bruce Power Security conducts effective interventions, based on the DBT and any other credible threats identified through threat and risk assessments within the protected area. The objective is to prevent sabotage of the nuclear facilities or the sabotage and theft of Category I, II, or III nuclear materials.

Bruce Power has a comprehensive drill program which is in place for the WWMF protected areas ensuring the regulatory compliance. CNSC staff evaluated force on force exercises conducted at the nuclear facilities, providing performance testing of the nuclear security program.

Bruce Power is responsible for ensuring its personnel are fully trained and proficient in equipment operation to meet OPG's qualification standards and collaborate with OPG to ensure NSO staff assigned to the WWMF maintain current qualifications without lapses or expirations.

2.12.3 Cyber Security

OPG has established an enterprise-wide *Cyber Security* program, to establish and maintain processes, procedures and controls to ensure OPG meets or exceeds regulatory requirements for cyber security, specifically CSA N290.7-14, *Cyber Security for Nuclear Power Plants and Small Reactor Facilities*. Moreover, OPG has implemented a *Nuclear Cyber Security* procedure which identifies systems that are Cyber Essential Assets (CEA) and the requirements to protect them from internal and external cyber threats, up to and including the design basis threat. This program is under the purview of OPG's Nuclear



Cyber Security section, which operates under the Corporate & Technology Services organization. These documents are used to identify systems at WWMF that are CEAs, establish controls to protect them from threats, and secure the confidentiality, availability and integrity of prescribed and/or sensitive WWMF information. The Cyber Security program is under the authority of OPG's Corporate and Technology Service organization.

The cyber security program objectives address the following elements:

- Defensive strategy and security architecture: The *Defensive Cyber Security Architecture Standard* (DCSA) specifies the requirements for establishing a DCSA that is specifically tailored to the needs of OPG Nuclear Facilities including the WWMF. DCSA focuses on the arrangement of zones to establish defence-in-depth, and specifies the requirements for boundary protection, secure communications and interconnections between zones, and common security control requirements that provide for protection across the facility.
- Policies and procedures: OPG's *Cyber Security Policy* requires OPG to establish and maintain a management system that reduces cyber risk, protects critical information and operational technology assets in accordance with internationally recognized cyber security standards while, at a minimum, maintaining compliance to regulatory and legal requirements. The policy supports the respective program, nuclear specific procedure and lower-level documents tailored to address specific clauses of CSA N290.7-14.
- Asset identification and classification procedures define instructions for the identification of Cyber Assets and Cyber Essential Assets per the definitions defined by CSA N290.7-14. Further, these assets are classified and prioritized using a graded approach for applicable cyber security controls commensurate to their significance and susceptibility.
- Security Controls: OPG makes use of a graded approach to establish the necessary cyber security controls to protect Cyber Essential Assets.
- Roles and responsibilities: Roles and responsibilities for staff to meet program, process and lower-level document expectations are well defined in OPG procedures.
- Awareness and Training: Qualifications and trainings are documented in OPG's *Training Plan*. System Owners confirm that all cyber security activities performed on systems that they are responsible for are completed by competent individuals with the necessary qualifications.
- Cyber Asset Configuration Management and Life Cycle Approach: Applicable change control processes ensure Cyber Essential Asset configuration management and life cycle management follows CSA N290.7-14.
- Coordination with other programs: Nuclear Cyber Security processes are compliant with CSA N286-12, *Management system requirements for nuclear facilities*, and interfaces with other nuclear processes to provide the necessary elements of a comprehensive cyber security program in OPG Nuclear.
- Incident response, reporting and recovery plan: OPG's *Nuclear Cyber Security Incident Response Plan* provides guidance to cyber security incidents that potentially impact Nuclear Operational Technology digital assets supporting OPG Nuclear facilities.
- Program review and maintenance: OPG's Nuclear Cyber Security process emphasizes program review through monthly program performance updates, annual Fleetview reports, continuous improvement through annual self-assessments, operating experience lessons, corrective actions, and updates to relevant CSA standards, CNSC Regulations and CNSC REGDOCs. Furthermore, the process integrates lessons learned from cyber security incidents, audits, as well as supplemental drills or exercises.



Cyber security related updates have been made to the ECC process, employee training, and various maintenance and engineering instructions, guides, procedures and standards in addition to OPG's corporate cyber security policy.

OPG continues to maintain compliance with CSA N290.7-14, *Cyber security for nuclear power plants and small reactor facilities* and pursues continuous improvement initiatives to enhance our cyber security posture. This includes work efforts towards meeting the requirements identified in CSA N290.7-21, *Cyber security for nuclear facilities*, along with cyber security best practices.

2.13 Safeguards and Non-Proliferation

Safeguards and Non-Proliferation refer to an international system of monitoring and verifying nuclear material and specified nuclear activities, administered in Canada by the CNSC and verified by the IAEA, to deter the diversion of nuclear material from legitimate peaceful activities. This system facilitates the IAEA to evaluate compliance with its obligations pursuant to its international safeguards agreements.

Canada has entered into a Safeguards Agreement and an Additional Protocol (hereafter referred to as "safeguards agreements") with the IAEA pursuant to its obligations under the *Treaty on the Non-Proliferation of Nuclear Weapons* Information Circular (INFCIRC/140). The international *Treaty on the Non-Proliferation of Nuclear Weapons* is the cornerstone of Canada's efforts to promote its objectives of international disarmament, non-proliferation, and the peaceful use of nuclear energy. More specifically, Canada maintains obligations under the following Canada-IAEA safeguards agreements:

- *Agreement Between the Government of Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non- Proliferation of Nuclear Weapons INFCIRC/164*; and,
- *Protocol Additional to the Agreement Between Canada and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons INFCIRC/164/Addendum 1*.

For the WWMF, the non-proliferation program is limited to the tracking and reporting of foreign obligations and origins of nuclear material as per CNSC REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*. The Additional Protocol contains further requirements for the provision of information and access, including the obligation to allow access to some locations on 24-hours' notice, and the obligation to provide information on and access to certain nuclear manufacturers and researchers, neither of which need to involve nuclear material.

OPG is in compliance with these requirements to facilitate Canadian compliance with Canada's Safeguards agreements with the IAEA, and with OPG's obligations established in the *General Nuclear Safety and Control Regulations.*

OPG has an effective Safeguards and Non-Proliferation program that ensures compliance with Canada's safeguard agreements with the IAEA, the *General Nuclear Safety and Control Regulations* and other measures arising from the *Treaty on the Non-Proliferation of Nuclear Weapons.* This program consists of:

- OPG's *Safeguards and Nuclear Material Accountancy* program which is designed to establish, maintain, and verify compliance with Safeguards and Nuclear Material Accountancy requirements, ensuring all necessary measures are taken to facilitate Canada's compliance with international safeguards agreements and any other measures arising from the *Treaty on the Non-Proliferation of Nuclear Weapons.*



- OPG's *Safeguards and Nuclear Material Accountancy Implementation* procedure provides further direction to ensure OPG complies with its licence conditions, the *Nuclear Safety and Control Act*, the *General Nuclear Safety and Control Regulations*, and other related Regulations in support of Canada's safeguards and nuclear material accountancy agreements.
- *OPG Safeguards and Nuclear Material Accountancy Requirements* procedure captures specific requirements for the establishment and maintenance of the Safeguards program at OPG Nuclear; this procedure closely follows and where possible, exceeds the requirements in CNSC REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy.*

Throughout the current WWMF licence period, the OPG Safeguards program was successful in meeting all international Safeguards and Non-Proliferation agreements. Since 2017, all the results from inspections performed at the WWMF that OPG has received are satisfactory indicating that OPG has successfully met the Safeguards requirements for the WWMF. NSS staff at the WWMF provided satisfactory support to the IAEA including nuclear material accountancy and control, access and assistance to the IAEA, operational and design information, support for Safeguards equipment, and containment and surveillance for the WWMF. In addition, the OPG safeguards program is internally evaluated each year through self-assessments and every five (5) years through Nuclear Oversight audits to ensure the continued health of the program, ensuring that the program remains in compliance with regulatory requirements and a satisfactory working level structure is in place to ensure success in meeting OPG's obligations.

2.13.1 Nuclear Material Accountancy and Control

Nuclear material accountancy involves activities that establish and report the quantities of nuclear material present within defined areas, as well as the changes in those quantities within defined time periods. This includes nuclear material measurement, record keeping, preparation and submission of accounting reports, and verification of accounting information.

All units of nuclear material have a unique identifier which is tracked and accounted for. For all non-exempted nuclear material, the WWMF has Material Balance Areas (MBAs), where the inventory of nuclear material can be categorized, tracked, and measured. Any movements from one MBA to another are promptly reported to the CNSC and IAEA. Nuclear material movements within the same MBA are also tracked internally to ensure precise status. Inventory changes are input into Nuclear Material Accountancy software by OPG staff that are qualified to move nuclear material. This software supports tracking and report generation. Reports of inventory status are submitted to the CNSC and IAEA as required by CNSC REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*.

OPG utilizes an electronic system to help track deadlines associated with CNSC/IAEA Safeguards requirements to ensure submissions are made on time in accordance with CNSC REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*. This system also supports historical traceability by documenting when submissions were made, in addition to record keeping of submitted files.

In accordance with the *Safeguards and Nuclear Material Accountancy* program, NSS staff disclose to the CNSC, the IAEA, or an IAEA inspector, any records for the WWMF that are required to be kept, or any reports required to be made under a safeguards agreement. OPG meets all reporting requirements in Section 31 of the *General Nuclear Safety and Control Regulations*.

All communications with the CNSC and IAEA which contain sensitive information, such as nuclear material accounting, are performed using only secure means. To ensure timely communication and report submissions, procedures are kept in alignment with CNSC REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy* requirements and relevant staff are trained on these procedures to be aware of reporting requirements and timelines.



2.13.2 Access and Assistance to IAEA

In accordance with Canada's safeguards agreements with the IAEA, WWMF staff provide timely access and assistance to IAEA and CNSC inspectors, or individuals acting on their behalf, when access is required to conduct safeguards-related activities. WWMF site procedures are in place to facilitate access for inspection activities during all operating hours. Initial access to areas for inspection activities can be provided within two hours of the IAEA arrival on site, provided it is safe to do so. The IAEA may also request complementary access to locations in Canada in accordance with applicable safeguards agreements, with at least 24 hours' notice or, in certain circumstances, with two hours' notice if the IAEA is already present at a facility or location on the same site.

IAEA and CNSC inspectors regularly conduct site visits to review the status of monitoring equipment, verify accessible nuclear material inventory, verify submitted records, review facility design information, and observe worker practices. Site visits are also conducted to perform maintenance of IAEA surveillance equipment, for example the replacement of the IAEA cameras and upgrades to the IAEA Remote Monitoring System in 2019. These inspections and maintenance prevent gaps in nuclear material safeguarding provisions.

OPG's safeguards procedures are subject to periodic review to ensure continued alignment with the Safeguards agreements and Canadian Regulations. The effectiveness of these processes has been demonstrated through inspections and ongoing interaction with the IAEA and CNSC. Feedback obtained during inspection activities is used to identify opportunities for continuous improvement, further strengthening the effectiveness of OPG's safeguards program and its ability to provide timely access and assistance to regulatory and international oversight organizations.

2.13.3 Operational and Design Information

There are three primary reports that are sent to the CNSC and IAEA for the WWMF that capture relevant design and operational information required by CNSC REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*. The reports are the Design Information Questionnaire (DIQ), the Operational program, and the Additional Protocol.

Through the WWMF's internal routine electronic tracking, the DIQ is reviewed for any changes (typically yearly); any identified changes are included in a revision to the DIQ, and it is re-submitted to the CNSC and IAEA. In addition, the WWMF safeguards specialist maintains awareness of potential site developments that may necessitate updates and resubmission of the DIQ at any time. The OPG *Engineering Change Control* program also requires design changes to be reviewed for potential impact to Safeguards in the early planning phase (for additional information on OPG's ECC program see Sections 2.1.5 and 2.5.1). Design changes flagged for potential impacts to Safeguards are discussed with the WWMF safeguards specialist and reported to the CNSC and IAEA for alignment prior to implementation. Direct communications from the design change team allows for detailed and applicable information to be gathered for accurate reporting. Moreover, OPG's engineering change process requires rigorous documentation to capture all of the details that would be needed for Safeguards. Relevant information as confirmed through documentation and discussion with the design change team, IAEA and CNSC (where applicable) is then included in the DIQ update.

To further ensure the accuracy of the submitted DIQ and the site-specific safeguards measures, the IAEA also performs routine Design Information Verifications. During a Design Information Verification, the IAEA performs in-person inspections of the provided DIQ information to verify it is accurate and sufficient to make decisions on the safeguard measures.



The Operational program is submitted annually as per CNSC REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*. Typically, quarterly updates are also provided to deliver confirmation of no change or to identify any changes.

Much like the DIQ preparation, the WWMF safeguards specialist maintains awareness of site operating plans that may necessitate revision and resubmission of the Operational program at any time. The WWMF safeguards specialist gathers the required information from site contacts most applicable to the information; this ensures accurate information is provided from the source.

OPG submits the Additional Protocol annually which assists the CNSC and IAEA in reviewing the site Safeguards approach, looking for gaps, or future areas of increased concern to address.

In addition to the above three reports, the WWMF maintains communication with the CNSC and IAEA Safeguards divisions. Operational activities that could not be foreseen, such as sudden power loss, that may affect Safeguards are promptly reported to the CNSC and IAEA. Furthermore, OPG supports industry peer team meetings, benchmarking of other nuclear generating stations, and routine trilateral meetings with the IAEA and CNSC to discuss the Safeguards program, process improvements, emerging trends etc. These are excellent environments to learn from each other and identify areas for improvement in the overall safeguards program.

OPG strives to be transparent with the CNSC and IAEA to ensure alignment and facilitate the objectives of the Safeguards and Non-Proliferation agreements.

2.13.4 Safeguards Equipment, Containment, and Surveillance

IAEA Safeguards equipment is installed at the WWMF to allow remote monitoring of necessary nuclear material movements within the UFDSF: such as cameras which are strategically placed at critical transfer locations. The WWMF supports this equipment by providing the required services and operating the safeguards equipment as specified by the IAEA. Such services include power supplies, lighting, and internet connections. The installed equipment provides the IAEA with continuous detailed data of nuclear material movements. The IAEA uses the information to compare against the WWMF's nuclear material accountancy reports to ensure all nuclear material movements are accounted for and used for legitimate purposes in accordance with the non-proliferation treaty.

IAEA equipment is labelled and sealed to deter interference, damage, or tampering. Site procedures and staff training clearly state that tampering or disruption of IAEA surveillance equipment must be reported immediately to the CNSC.

Additional critical support parameters, such as the minimum required ambient lighting for IAEA cameras, have the requirements captured in site procedures and training, which reinforces expectations to perform all due diligence to satisfy these parameters.

2.13.4.1 IAEA Fuel Verification Program

The IAEA Fuel Verification program includes nuclear material accounting, the IAEA monthly remote monitoring report, and the use of surveillance equipment such as cameras, portable verification equipment, and containment equipment. WWMF's compliance with the Fuel Verification program is met through OPG's Safeguards and Non-Proliferation program.



2.13.4.2 Laser Mapping Container Verification System

The Laser Mapping Container Verification (LMCV) system (Figure 27) designed by the IAEA is a digital weld identification scanner created to verify and uniquely identify the DSC in-situ. It is a powerful tool for acquiring and verifying the "weld fingerprint" of the DSC.



Figure 27: Laser Mapping Container Verification (LMCV)

In 2019, the WWMF and IAEA completed full inventory scanning for DSCs in storage at the WWMF. All DSCs with full height welds will now only have the Cobra Seal applied, and LMCV completed negating the requirement for the metallic seals.

A DSC design change in lid to base welding process as described in Section 2.6 will likely impact the LMCV tooling. OPG continues to coordinate with the CNSC and the IAEA as per the requirements in the LCH and the established processes to implement the DSC design changes.

2.13.4.3 Planned Activities

OPG is working to implement the equipment-based approach, as proposed and developed by the IAEA, in consultation with the CNSC and other multi-unit CANDU stations across Canada.



The equipment-based approach will involve:

- Installation of Mobile Unit Neutron Detectors on the DSC Transporters
- Installation of surveillance cameras on the DSC Transporters
- Installation of equipment within the WWMF to support the charging of the Mobile Unit Neutron Detectors and surveillance cameras on the DSC Transporters.

Minor updates are also planned to the Safeguards and Nuclear Material Accountancy program to clarify requirements.

2.13.5 Import and Export

The scope of the non-proliferation program at the WWMF is limited to the tracking and reporting of foreign obligations and origins of nuclear material. Import and export of controlled nuclear substances, equipment and information as identified in the *Nuclear Non-proliferation Import and Export Control Regulations*, is not currently authorized under the current WWMF licence and any application is made in accordance with applicable regulations.

2.14 Packaging and Transport

OPG has an effective packaging and transport program that meets or exceeds all applicable regulatory requirements. NSS implements OPG's *Radioactive Material Transportation* (RMT) program to support the safe and efficient packaging and transport of nuclear substances in accordance with applicable regulatory requirements. The program establishes responsibilities, procedures and controls for the handling, classification, packaging, shipment, transportation and receipt of radioactive material to protect workers, the public and the environment.

The RMT program includes personnel training and qualifications, transportation oversight, package certification and registration for use, shipment documentation and records management. The *Radioactive Material Transportation Emergency Response Plan* establishes arrangements for responding to transportation accidents and other events involving radioactive material. The program operates within OPG's management system, with oversight and corrective action processes supporting regulatory compliance and continual improvement.

2.14.1 Package Design and Maintenance

OPG controls the design of its radioactive materials packagings and performs maintenance on the packagings to ensure compliance with the *Packaging and Transport of Nuclear Substances Regulations* (PTNSR).

Each OPG radioactive materials transportation packaging, with the exception of one-time use packagings, is subject to an annual maintenance outage. Packaging maintenance is performed in a dedicated facility called the TPMB at the WWMF.

Each packaging is maintained in accordance with a packaging-specific procedure. The containment system of each Type B or Type A packaging is tested to ensure its effectiveness.

Engineering changes to OPG's existing radioactive materials transportation packagings are a rare occurrence due to the maturity of the designs. All packagings have been maintained in good condition without any reduction in safety or operability.



An improved version of the OPG Trillium Transportation Package designated as Trillium TP-03 was added to the OPG fleet in 2026, increasing the fleet's capacity to transport spent ion exchange resins and ILW from the Darlington, Pickering, and Bruce Power stations. The design of the Trillium TP-03 was developed in accordance with OPG's *Design Management* and *Engineering Change Control* programs.

2.14.2 Packaging and Transport Program

The objective of the RMT program is to ensure that shipments of radioactive material for which OPG is the consignor are prepared and offered for transport in a manner that is compliant with the *Transportation of Dangerous Goods* (TDG) regulations and the PTNSR. The RMT program also establishes the necessary controls for safe and compliant transportation and handling aspects of radioactive material within OPG's control where OPG is the consignee or when OPG Class 7 carriers are used. This is done to ensure the safety of workers, the public, and the environment.

OPG ensures that radioactive shipments are characterized, classified, packed, shipped, and received in accordance with approved procedures and applicable Regulations. OPG ensures that staff who handle (i.e., load, unload, receive, classify or ship) radioactive material in preparation for transport are adequately trained and qualified or are under the direct supervision of qualified personnel. Competency is demonstrated by holding a valid Class 7 Certificate of Training in accordance with the TDG regulations.

All Type A and Type B radioactive shipments, as well as shipments requiring a Licence to Transport, are supported by a qualified Transportation Officer to ensure compliance with regulatory and procedural requirements.

OPG maintains a strong transportation safety record. During the current licence period, OPG has completed hundreds of radioactive material shipments to and from the WWMF with zero accidents or other dangerous occurrences.

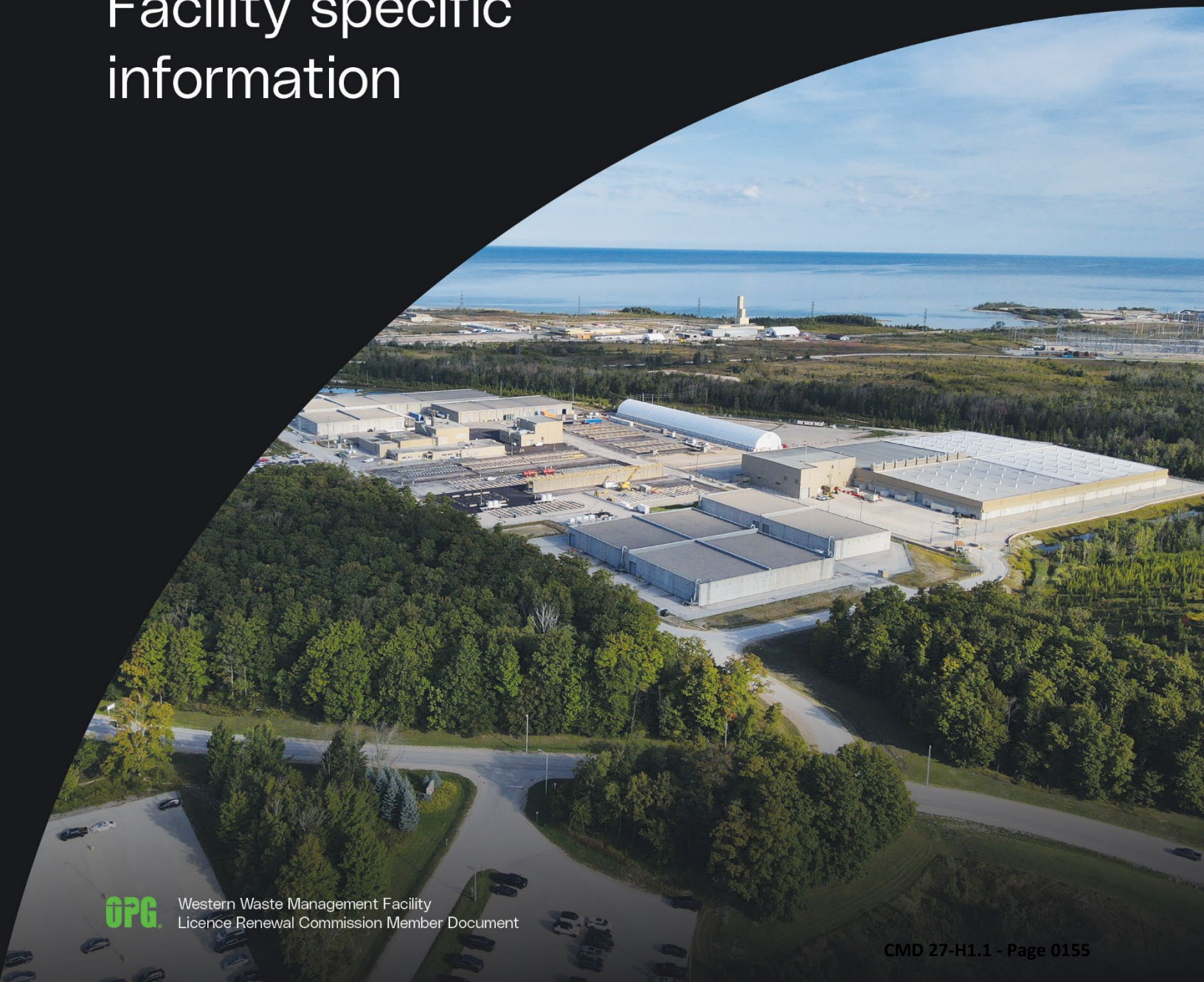
2.14.3 Registration for Use

Users of Type B packages must register with the CNSC and acknowledge that they have the necessary instructions to properly prepare the package for shipment. OPG's process for use of packages of certified design is specified in the *Radioactive Materials Transportation Records* procedure.

Currently OPG is a registered user for twelve (12) different package design certificates. These packages include OPG's ILW and tritiated heavy water transportation packages, and packages from external agencies and companies that are used to ship used fuel samples, Cobalt-60, and Molybdenum-99 to various licensed facilities.

3.0

Facility specific information





3.0 Facility Specific Information

3.1 Construction Plans

Project specific design requirements, environmental management plan, and construction verification plan will be submitted to CNSC staff prior to the commencement of construction activities in accordance with the WWMF WFOL Licence Condition 15.1 Construction Plans.

The environmental management plan, construction verification plan and project design requirements assure that the environment is adequately protected from adverse impacts resulting from approved construction activities and that the proposed design will not deviate from the licensing basis. Consistent with OPG's practice, OPG will construct new facilities that are authorized under the licence on an as needed basis utilizing a fit-for-purpose strategy.

3.2 Commissioning Report

The operation of any building or structures would only begin following OPG's submission of a commissioning report and its acceptance by the Commission or a person authorized by the Commission, in accordance with Condition 15.2 of the current licence.

The commissioning reports are submitted to the CNSC staff for any new buildings to assure that the project design requirements and the licensing basis have been met before the building is placed into operation.

OPG requests a change to Licence Condition 15.2:

In the current licence, Appendix A Table 2 shows the planned construction activities to support the extended operation of Bruce Power, after completion of the Bruce Power's Major Component Replacement Project, which was not approved by the Commission at the time of the last licence renewal, but has since been approved. Appendix A, Table 3 shows the planned construction based on current approved operations and approved projects. Now that the Bruce Power Major Component Replacement Project has been approved, OPG proposes Licence Condition 15.2 is updated to:

The licensee shall not carry out the activities referred to in paragraphs (ii) and (iii) of Part IV of this licence that relate to completed construction activities in paragraph (v) of Part IV of this licence until the submission of a commissioning report that is acceptable to a person authorized by the Commission for the structures listed in Table 1 of Appendix A.

OPG also proposes to remove Tables 2 and 3 from the licence.

3.3 Import and Export of Nuclear Substances

OPG ensures that all import and export activities involving nuclear substances comply with the *Nuclear Non-Proliferation Import and Export Control Regulations*, including obtaining the necessary licences from the CNSC.



OPG imports and exports only those nuclear substances found in Appendix B of the WFOL from the WWMF, occurring as contaminants in laundry, packaging, shielding and equipment. If the nuclear substances do not fall under this description, then an import or export licence is obtained per the *Nuclear Non-proliferation Import and Export Control Regulations.*

4.0

Additional matters of regulatory interest





4.0 Additional Matters of Regulatory Interest

4.1 Financial Guarantees, Nuclear Liability Insurance, and Cost Recovery

4.1.1 Financial Guarantees

The objective of OPG's consolidated financial guarantee is to ensure that sufficient funds are estimated, collected, and administered for the management of liabilities associated with operating, refurbishing and decommissioning of all its nuclear facilities. The WWMF is included within the scope of this consolidated financial guarantee.

In addition to the decommissioning program, OPG's Financial Guarantee also covers financial provisions for the long-term management (storage, retrieval, and eventual disposal) of all operational, refurbishment, and decommissioning wastes (Used Fuel and L&ILW).

OPG's financial guarantee is prepared and maintained on a 5-year cycle in accordance with the requirements set out in CSA Standard N294, *Decommissioning of facilities containing nuclear substances* and CNSC REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*. OPG also submits an annual financial guarantee report to the CNSC detailing the status of the guarantee including the amounts accumulated in segregated funds and the value of the Provincial guarantee, when required. The report compares the amount of the liabilities and the financial resources available to discharge the obligations.

Following the submission of the Preliminary Decommissioning Plans and respective cost estimates, OPG will also provide the necessary financial guarantee arrangements using CNSC REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities.* The financial guarantee provisions for the WWMF demonstrate that the current level of funding is adequate for decommissioning the site and returning the site to an end state as outlined in the Preliminary Decommissioning Plan. CNSC access to these funds is provided by the CNSC Financial Security and Ontario Nuclear Funds Agreement Access Agreement between the CNSC, OPG and the Province of Ontario, and, as required, the Provincial Guarantee Agreement between the CNSC and the Province of Ontario. In December 2022, the Commission accepted OPG's proposed 2023-2027 consolidated financial guarantee as documented in Record of Decision DEC 22-H104.

OPG will continue to provide annual Financial Guarantee reports to CNSC staff detailing the status of the guarantee, including the amounts accumulated in segregated funds.

4.1.2 Nuclear Liability Insurance

As required under the *Nuclear Liability and Compensation Act* (NLCA), OPG maintains a financial security in an amount equal to $13 million for WWMF in 2026.



4.1.3 Cost Recovery

Pursuant to the *CNSC Cost Recovery Fees Regulations*, the CNSC prepares a Regulatory Activity Plan for Class I Nuclear Facilities and calculates an estimated annual fee payable for that fiscal year using the estimated full cost of the plan. OPG pays the CNSC's fees on a quarterly basis upon receipt of invoices. OPG will continue to make timely payments as required.

5.0

References





5.0 References

1. OPG Letter, K. Aggarwal to C. Salmon, “Submission of Renewal Application for Western Waste Management Facility Waste Facility Operating Licence”, May 1, 2026, CD# W-CORR-00531-02105.



Appendix A: Commonly Used Acronyms

Acronym	Full Name
AIR	All Injury Rate
ALARA	As Low As Reasonably Achievable
ASME	American Society of Mechanical Engineers
ASR	Accident Severity Rate
BP EPS	Bruce Power Emergency Protective Services
CANDU	Canada Deuterium Uranium
CGA	Compressed Gas Association
CKSPFN	Chippewas of Kettle and Stony Point First Nation
CNO	Chief Nuclear Officer
CNSC	Canadian Nuclear Safety Commission
C.R.C.	Consolidated Regulations of Canada
CSA	Canadian Standards Association
DBT	Design Basis Threat
DIQ	Design Information Questionnaire
DRL	Derived Release Limit
DRP	Discrete Radioactive Particle
DSC	Dry Storage Container
EAL	Environmental Action Level
ECA	Environmental Compliance Approval
ECC	Engineering Change Control
ED&I	Equity, Diversity and Inclusion
EMP	Environmental Monitoring Program
EMS	Environmental Management System
EO	Environment Office



Acronym	Full Name
EPC	Engineer, Procure, and Construct
EPD	Electronic Personal Dosimeter
ERA	Environmental Risk Assessment
HEPA	High-Efficiency Particulate Air
HMRPH	High Maximum Reasonable Potential for Harm
HMRPHE	High Maximum Reasonable Potential for Harm Events
HoW	Hours of Work
HR	Human Resources
HSM	Historic Saugeen Métis
IAEA	International Atomic Energy Agency
IC	In-ground Container
IC-HX	In-ground Container for Heat Exchangers
IEP	Indigenous Engagement Plan
ILW	Intermediate Level Waste
INFCIRC	Information Circular
ION	Indigenous Opportunities Network
ISO	International Organization for Standardization
ISRW	Integrated Strategy for Radioactive Waste
IX	Ion Exchange
JC	Joint Council
L&ILW	Low & Intermediate Level Waste
LCH	Licence Conditions Handbook
LHD	Linear Heating Detection
LLSB	Low Level Storage Building
LLW	Low Level Waste



Acronym	Full Name
LMCV	Laser Mapping Container Verification
M&D	Monitoring & Diagnostics
MBA	Material Balance Area
MCR	Major Component Replacement
MECP	Ministry of the Environment, Conservation and Parks
MID	Mixture Identification
MNO	Métis Nation of Ontario Region 7
GBTTCC	Georgian Bay Traditional Territory Consultation Committee
MoU	Memorandum of Understanding
MPSB	Multi-Purpose Storage Building
NAC	Nuclear Advisory Council
NBCC	National Building Code of Canada
NEW	Nuclear Energy Worker
NFCC	National Fire Code of Canada
NGS	Nuclear Generating Station
NLCA	Nuclear Liability and Compensation Act
NMS	Nuclear Management System
NRC	National Research Council of Canada
NRF	Nuclear Response Force
NSCA	Nuclear Safety and Control Act
NSO	Nuclear Security Officer
NSRB	Nuclear Safety Review Board
NSS	Nuclear Sustainability Services
NSSCMP	Nuclear Safety and Security Culture Monitoring Panel
NWMO	Nuclear Waste Management Organization



Acronym	Full Name
O&C	Observation and Coaching
OSHA	Occupational Safety and Health Act
OPEX	Operating Experience
OPG	Ontario Power Generation
OPP	Ontario Provincial Police
PB	Pressure Boundary
PDP	Preliminary Decommissioning Plan
PEA	Predictive Effects Assessment
PERA	Predictive Environmental Risk Assessment
PNERP	Provincial Nuclear Emergency Response Plan
PPE	Personal Protective Equipment
PTNSR	Packaging and Transport of Nuclear Substances Regulations
RAP	Reconciliation Action Plan
RCSB	Retube Component Storage Building
RMT	Radioactive Material Transportation
ROR	Regulatory Oversight Report
RP	Radiation Protection
R.R.O.	Revised Regulations of Ontario
R.S.O.	Revised Statutes of Ontario
SCA	Safety and Control Area
SCL	Safety Classification and Learning
SEFDR	Site Event Free Day Resets
SG	Steam Generator
SGSB	Steam Generator Storage Building
SIIR	Serious Injury Incidence Rate



Acronym	Full Name
SON	Saugeen Ojibway Nation
SOR	Statutory Orders and Regulations
SSC	Structure, Systems and Components
TCSCA	Timely Completion of Safety Corrective Actions
TDG	Transportation of Dangerous Goods
TERP	Transportation Emergency Response Plan
TPMB	Transportation Package Maintenance Building
TRA	Threat Risk Assessment
TRIF	Total Recordable Injury Frequency
TSSA	Technical Standards and Safety Authority
TWE	Transport and Work Equipment
UFDSB	Used Fuel Dry Storage Building
UFDSF	Used Fuel Dry Storage Facility
VR	Virtual Reality
WAC	Waste Acceptance Criteria
WANO	World Association of Nuclear Operators
WCSR	Western Clean-Energy Sorting and Recycling
WFOL	Waste Facility Operating Licence
WHMIS	Workplace Hazardous Materials Information System
WUFDSF	Western Used Fuel Dry Storage Facility
WVRB	Waste Volume Reduction Building
WWMF	Western Waste Management Facility



Appendix B: Requests to the Commission and Activities to be Licensed

Requests to the Commission

1. Renewal of the Western WMF WFOL, authorizing OPG to carry out the activities listed in Appendix C of Reference 1 for a 10-year term from June 1, 2027 to May 31, 2037.
2. Amendment to Licence Condition 9.1 to remove the following text from the Licence Condition: "...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."
3. Removal of Tables 2 and 3 from Appendix A of the current licence.
4. Change Licence Condition 15.2 to:

   The licensee shall not carry out the activities referred to in paragraphs (ii) and (iii) of Part IV of this licence that relate to completed construction activities in paragraph (v) of Part IV of this licence until the submission of a commissioning report that is acceptable to a person authorized by the Commission for the structures listed in Table 1 of Appendix A.

The information below is provided to satisfy the requirements of Section 3(1)(b) of the *General Nuclear Safety and Control Regulations*.

Activities to be Licensed:

The application for renewal of WFOL-W4-314.01/2027 contains information for the activities to be licensed. These activities include those currently licensed in WFOL-W4-314.01/2027:

(i) operate the Western Waste Management Facility (hereinafter "the facility"), which includes the Western Low and Intermediate Level Waste Storage Facility and the Western Used Fuel Dry Storage Facility, located at the Bruce nuclear site, Municipality of Kincardine, Province of Ontario;

(ii) possess, transfer, use, process, package, manage, import, export, and store nuclear substances, except Category I, II and III nuclear material that are required for, associated with or arise from the activities described in (i);

(iii) possess, transfer, package, manage, and store Category II nuclear material that is required for, associated with or arise from the activities described in (i) that are part of the Western Used Fuel Dry Storage Facility;

(iv) transport Category II nuclear materials that are associated with the activities described in (i) on the site of the Bruce Nuclear Power Development;

(v) carry out the site preparation, construction, or construction modifications at the facility associated with the authorized additional structures, when on completion will result in a total of no more than those listed in Table 3;

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



Appendix C: Update on CSA Standards and REGDOCs

Item	CSA Standard or CNSC REGDOC	Compliance Date
1	CNSC REGDOC-2.4.4 Safety Analysis for Class IB Nuclear Facilities	December 31, 2027
2	National Building Code of Canada 2020	Compliant
3	National Fire Code of Canada 2020	Compliant
4	CNSC REGDOC-2.9.2 Controlling Releases to the Environment (2024)	January 1, 2029
5	CSA N288.4-19, Environmental Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills (2019)	To be provided on December 31, 2026
6	CSA N288.6-22, Environmental Risk Assessments at Class I Nuclear Facilities and Uranium Mines and Mills (2022)	December 31, 2026
7	CSA N288.8-17, Establishing and Implementing Action Levels for Releases to the Environment from Nuclear Facilities (2017)	December 31, 2028
8	CSA N292.0-24 Radioactive waste management: Common Requirements of the CSA N292 series of Standards (2024)	Compliant with exception to Clause 12.7.3.4 Selection of Design Extension Conditions (DEC) Sequences; full compliance by December 31, 2027
9	CSA N292.8-21 Characterization of radioactive waste and irradiated fuel (2021)	Compliant
10	CSA N292.8-26 Characterization of radioactive waste and irradiated fuel (2026)	To be provided on December 18, 2026
11	CNSC REGDOC-2.11.2, Decommissioning (2021)	December 31, 2027
12	CSA N294-25 Decommissioning of Facilities Containing Nuclear Substances (2025)	To be provided on December 10, 2027