



Record of Decision

DEC 23-H9

In the Matter of

Applicant Ontario Power Generation Inc.

Subject Application to Renew the Class IB Waste Facility
Operating licence for Ontario Power Generation
in Darlington, Ontario

Public Hearing
Date January 26, 2023

Record of
Decision Date April 19, 2023

RECORD OF DECISION – DEC 23-H9

Applicant: Ontario Power Generation Inc.

Address/Location: 700 University Avenue, Toronto, Ontario M5G 1X6

Purpose: Application to Renew the Class IB Waste Facility Operating licence for Ontario Power Generation in Darlington, Ontario

Application received: December 16, 2021

Date of public hearing: January 26, 2023

Location: Virtual Hearing

Members present: R. Velshi, Chair
T. Berube
S. Demeter

Registrar: D. Saumure
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Licence: Renewed

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1.0 INTRODUCTION	
1.	Ontario Power Generation Inc. (OPG) has applied to the Canadian Nuclear Safety Commission ¹ (CNSC or the Commission), under subsection 24(2) of the Nuclear Safety and Control Act ² (NSCA), for a 10-year renewal of the Class IB Waste Facility Operating licence for its Darlington Waste Management Facility (DWMF). OPG’s current licence, WFOL-W4-355.01/2023, is valid until April 30, 2023. The licence authorizes OPG to possess, transfer, use, process, package, manage and store dry storage containers of used nuclear fuel (high-level waste) generated at the Darlington Nuclear Generating Station (NGS) and intermediate-level radioactive waste generated from the ongoing refurbishment of the Darlington NGS, and transport nuclear substances on the site of the Darlington NGS. The DWMF is located at the Darlington NGS in the Municipality of Clarington, Ontario, and on the traditional territory of the Wendat, Anishinabek Nation, and the territory covered by the Williams Treaties with the Michi Saagiig and Chippewa Nations.
2.	The DWMF consists of the following buildings: <ul style="list-style-type: none"> • Dry Storage Container Processing Building • Used Fuel Dry Storage Building #1 • Used Fuel Dry Storage Building #2 • Retube Waste Storage Building for the storage of intermediate level waste from the Darlington Refurbishment Project.
3.	OPG’s current licence ^{3,4} authorized the construction of 4 used fuel dry storage buildings, 2 of which have been built. The other two additional used fuel dry storage buildings that were authorized to be built would have a combined storage capacity of 1,000 dry storage containers. With this licence renewal application, OPG is requesting: <ul style="list-style-type: none"> • to carry over the authorization for the future construction and operation of the two additional used fuel dry storage buildings; • an increase in the combined capacity of the two additional used fuel dry storage buildings, to store up to 1,200 dry storage containers; and • that the terminology in the licence for the additional buildings be changed from “used fuel dry storage buildings” to “used fuel dry storage structures”.
4.	OPG is also requesting a change in the name of the facility, from the “Darlington Waste Management Facility” to “Nuclear Sustainability Services – Darlington”, to be reflected in the licence.

¹ The *Canadian Nuclear Safety Commission* is referred to as the “CNSC” when referring to the organization and its staff in general, and as the “Commission” when referring to the tribunal component.

² Statutes of Canada (S.C.) 1997, c. 9

³ CMD 23-H9, page 115.

⁴ OPG’s current licence was issued in [2013](#), and amended in [2016](#).

	<u>Issues</u>
5.	The Commission is required to determine whether and what requirements the Impact Assessment Act ⁵ (IAA) imposes in relation to the activities sought to be authorized in OPG's application to renew the licence for its Class IB Waste Facility. Satisfying any such requirements can be a prerequisite to licensing.
6.	Pursuant to paragraphs 24(4)(a) and (b) of the NSCA, the Commission must be satisfied that: a) OPG is qualified to carry on the activity that the licence would authorize; and b) in carrying on that activity, OPG will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.
7.	As an agent of the Crown, the Commission recognizes its role in fulfilling the Crown's constitutional obligations, along with advancing reconciliation with Canada's Indigenous peoples. The Commission's responsibilities include the duty to consult and, where appropriate, accommodate Indigenous interests where the Crown contemplates conduct which may adversely impact potential or established Aboriginal ⁶ or treaty rights ⁷ . As such, the Commission must determine what engagement and consultation steps and accommodation measures are called for respecting Indigenous interests.
	<u>Public Hearing</u>
8.	On July 21, 2022, the Commission published a Notice of Public Hearing and Participant Funding for this matter. The Commission subsequently published two revised notices, one on October 27, 2022 to reflect a change of date for interventions and on November 14, 2022 to announce that the hearing would be held in the virtual format only.
9.	Pursuant to section 22 of the NSCA, the President of the Commission established a Panel of the Commission over which she would preside, including Commission Members Dr. T. Berube and Dr. S. Demeter, to decide on the application. The Commission, in making its decision, considered all the information submitted for the

⁵ S.C. 2019, c. 28, s. 1.

⁶ "Aboriginal" is the term used in this document when referring to the Crown's duty to consult as that is the term used in s. 35 of the *Constitution Act, 1982*. In all other cases, "Indigenous" is the preferred terminology and used accordingly.

⁷ *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73; *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director)*, 2004 SCC 74.

	<p>public hearing held on January 26, 2023. The public hearing was conducted in accordance with the Canadian Nuclear Safety Commission Rules of Procedure⁸ (the Rules). During the public hearing, the Commission considered written submissions and heard oral presentations from OPG (CMD 23-H9.1 and CMD 23-H9.1A) and CNSC staff (CMD 23-H9, CMD 23-H9.A and CMD 23-H9.B). The Commission also considered oral and written submissions from 30 intervenors (see Appendix A for a list of interventions). The hearing was webcast live via the CNSC website, and video archives are available on the CNSC’s website.</p>
	<u>Participant Funding Program</u>
10.	<p>Pursuant to paragraph 21(1)(b.1) of the NSCA, the Commission has established a Participant Funding Program (PFP) to facilitate the participation of Indigenous Nations and communities, members of the public and stakeholders in Commission proceedings. In June 2022, up to \$75,000 in funding was made available through the CNSC’s PFP to review OPG’s licence renewal application and associated documents, and to provide the Commission with value-added information through topic-specific interventions. A Funding Review Committee (FRC), independent of the CNSC, reviewed the funding applications received and made recommendations on the allocation of funds. Based on the recommendations from the FRC, the CNSC awarded a total of \$69,735.95 to 5 applicants:</p> <ul style="list-style-type: none"> • Curve Lake First Nation – up to \$14,806 • Mississaugas of Scugog Island First Nation – up to \$14,772.40 • Nuclear Transparency Project– up to \$10,000 • Canadian Association of Nuclear Host Communities– up to \$15,000⁹ • Northwatch – up to \$15,157.55
	<u>Scope of Hearing</u>
11.	<p>The Commission notes that the proposed licence is for the safe storage of used fuel that is produced from OPG’s current Darlington NGS, and does not include provisions for storing any used fuel from potential future small modular reactors (SMR).</p>

⁸ SOR/2000-211.

⁹ Canadian Association of Nuclear Host Communities canceled its contribution agreement before filing its submission and therefore did not receive funding.

	2.0 DECISION
12.	<p>Based on its consideration of the matter, as described in more detail in the following sections of this <i>Record of Decision</i>, the Commission concludes the following:</p> <ul style="list-style-type: none">• the Impact Assessment Act does not impose any obligation upon the Commission in this matter• the contemplated activities do not present any novel adverse impact on any potential or established Aboriginal claim or right• the Commission’s responsibility to uphold the honour of the Crown and its constitutional obligations with regard to engagement and consultation respecting Indigenous interests have been satisfied• OPG is qualified to carry on the activity that the licence will authorize• OPG, in carrying on these activities, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed. <p>Therefore,</p>
	<p>the Commission, pursuant to section 24 of the <i>Nuclear Safety and Control Act</i>, renews the Class IB Waste Facility Operating licence issued to Ontario Power Generation Inc. for its Darlington Waste Management Facility located at the Darlington NGS in the Municipality of Clarington, Ontario. The renewed licence, WFOL-W4-355.00/2033, is valid from May 1, 2023 to April 30, 2033, unless suspended, amended, revoked or replaced.</p>
13.	<p>The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 23-H9.A, with a slight wording change to Licence Condition 15.1 (Construction Plans) to read as follows:</p> <p>The licensee shall not carry out the activities referred to in paragraph (iv) of Part IV of this licence without the submission of an environmental management plan, a construction verification plan, the project design requirements and a preliminary safety analysis report and without prior written approval of the Commission or a person authorized by the Commission.</p>
14.	<p>The Commission delegates authority to CNSC staff with respect to the administration of licence conditions 12.2 (Construction), 13.1 (Safeguards Program), 15.1 (Construction Plans) and 15.2 (Commissioning Report), as recommended by CNSC staff in section 5.6 of CMD 23-H9. Licence conditions and the delegation of authority are further discussed in section 4.5 of this <i>Record of Decision</i>.</p>

15.	With this licence renewal, the Commission renews the authorization for the construction and operation of the additional Used Fuel Dry Storage Structures #3 and #4. The Commission also authorizes the increase in the combined total capacity of Used Fuel Dry Storage Structures #3 and #4 from 1,000 to 1,200 dry storage containers. The renewed licence reflects the Commission’s acceptance of the change in terminology for these structures, from “used fuel dry storage buildings” to “used fuel dry storage structures”.
16.	The renewed licence also reflects the Commission’s decision not to accept the requested name change of the Darlington Waste Management Facility to Nuclear Sustainability Services-Darlington.
17.	With this decision, the Commission directs CNSC staff to report on the performance of OPG and the DWMF as part of the periodic Regulatory Oversight Report for Nuclear Power Generating Sites . CNSC staff shall present this report at a public proceeding of the Commission, where members of the public will be able to participate. The Commission directs CNSC staff to inform the Commission, as part of the <i>Regulatory Oversight Report</i> , of any changes made to the Licence Conditions Handbook. CNSC staff may bring any matter to the Commission’s attention, at any time, as required.
3.0 APPLICABILITY OF THE <i>IMPACT ASSESSMENT ACT</i>	
18.	In coming to its decision, the Commission was first required to determine whether any requirement under the IAA applied to the licence renewal application and whether an impact assessment was required.
19.	The IAA came into force on August 28, 2019. Pursuant to the IAA and the Physical Activities Regulations ¹⁰ made under it, impact assessments are to be conducted in respect of projects identified as having the greatest potential for adverse environmental effects in areas of federal jurisdiction. A licence renewal is not a project designated under the <i>Physical Activities Regulations</i> .
20.	The Commission is satisfied that there is no requirement under the IAA for an impact assessment to be completed in order to renew this licence. The Commission is also satisfied that there are no other applicable requirements of the IAA to be addressed in this matter. ¹¹ The Commission notes that the NSCA provides a strong regulatory framework for environmental protection and the health and safety of persons. Environmental protection is further discussed in section 4.2.9 of this <i>Record of Decision</i> .

¹⁰ SOR/2019-285.

¹¹ The IAA can impose other requirements on federal authorities in respect of authorizing projects that are not designated as requiring an impact assessment, including projects that are to be carried out on federal lands, or projects outside of Canada. This licence renewal does not engage any such applicable IAA requirements.

	4.0 ISSUES AND COMMISSION FINDINGS
21.	In making its licensing decision, the Commission considered specific relevant issues and submissions relating to OPG’s qualification to carry on the licensed activities. The Commission also considered the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed.
22.	<p>The Commission’s decision focuses on the issues most relevant for this application, specifically:</p> <ul style="list-style-type: none"> • Assessment of the licence application • OPG’s performance in relevant safety and control areas (SCAs) over the past licence period • Indigenous engagement and consultation • Other matters of regulatory importance • Licence length and conditions, including the delegation of authority • Proposed name change from Darlington Waste Management Facility to Nuclear Sustainability Services-Darlington • Proposed name change from Used Fuel Dry Storage Buildings to Used Fuel Dry Storage Structures • Proposed change in the total capacity of Used Fuel Dry Storage Buildings
	4.1 Assessment of Licence Application
23.	OPG submitted its renewal application on December 16, 2021 . In its consideration of this matter, the Commission examined the completeness of the application and the adequacy of the information submitted by OPG, as required by the NSCA, the General Nuclear Safety and Control Regulations ¹² (GNSCR), and the Class I Nuclear Facilities Regulations ¹³ , and other applicable regulations made under the NSCA, including the Radiation Protection Regulations ¹⁴ , the Nuclear Security Regulations ¹⁵ , and the Packaging and Transport of Nuclear Substances Regulations, 2015 ¹⁶ .
24.	<p>The GNSCR call on an applicant for a licence renewal to provide information regarding any changes in information to the CNSC as part of its application. Section 5 provides:</p> <p style="text-align: center;">An application for the renewal of a licence shall contain</p>

¹² SOR/2000-202.

¹³ SOR/2000-204.

¹⁴ SOR/2000-203.

¹⁵ SOR/2000-209.

¹⁶ SOR/2015-145.

	<p>(a) the information required to be contained in an application for that licence by the applicable regulations made under the Act; and (b) a statement identifying the changes in the information that was previously submitted.</p> <p>Section 7 of the GSNCR also provides that:</p> <p style="padding-left: 40px;">An application for a licence or for the renewal, suspension in whole or in part, amendment, revocation or replacement of a licence may incorporate by reference any information that is included in a valid, expired or revoked licence.</p> <p>Additionally, Sections 3 and 6 of the <i>Class I Nuclear Facilities Regulations</i> specify the application information required in respect of an operating licence.</p>
25.	<p>Section 3 of OPG’s application provides clause-by-clause responses to the requirements set out in the GSNCR and the <i>Class I Nuclear Facilities Regulations</i>. As detailed in Appendix B of CMD 23-H9, CNSC staff reported that OPG’s application complies with regulatory requirements.</p>
26.	<p>Based on the evidence presented, the Commission concludes that OPG’s licence renewal application is sufficient and complies with the regulatory requirements respecting an application for licence renewal set in the <i>Class I Nuclear Facilities Regulations</i>. OPG’s application and supporting documents identify how OPG will meet regulatory requirements and CNSC staff’s assessment demonstrates to the Commission’s satisfaction how OPG has adequately addressed the licence renewal application requirements.</p>
4.2 OPG’s Performance for the Darlington Waste Management Facility	
27.	<p>The Commission examined CNSC staff’s assessment of OPG’s performance in all 14 SCAs for the purpose of evaluating this licence renewal application. The Commission considered OPG’s performance over the licence period, as of the time of the hearing. Throughout the licence period, CNSC staff rated OPG’s overall performance in all applicable SCAs as “satisfactory”.</p>
<i>4.2.1 Management System</i>	
28.	<p>OPG’s management system covers the framework that establishes the processes and programs required to ensure that OPG achieves its safety objectives, continuously monitors its performance against these objectives, and fosters a healthy safety culture. Section 3.1 of OPG’s CMD summarizes information about its management system, including its:</p>

	<ul style="list-style-type: none"> • governing management system document • organization and organizational structure • implementation and maintenance of programs, processes and procedures • safety culture assessments <p>OPG submitted that its Management System meets CSA N286-12, <i>Management system requirements for nuclear facilities</i>¹⁷ and CNSC regulatory document (REGDOC) REGDOC-2.1.2, Safety Culture¹⁸. OPG also submitted that it continues to maintain and improve its management system in accordance with regulatory requirements. OPG noted that it conducts safety culture self-assessments every 5 years, per REGDOC-2.1.2.</p>
29.	<p>OPG described its use of contractors to engineer, procure, and construct new facilities or to implement design improvements to OPG's existing facilities. OPG reported that it implemented a process to ensure that each contractor has developed and implemented a management system that meets the applicable requirements outlined in CSA N286-12. OPG also reported that it assesses its contractors' capability of working at OPG's nuclear facilities through audits of contractors' processes.</p>
30.	<p>In section 3.1 of CMD 23-H9, CNSC staff confirmed that OPG has implemented a management system that meets regulatory requirements, in accordance with CSA N286-12, REGDOC-2.1.1, Management System¹⁹ and REGDOC 2.1.2. CNSC staff submitted that it assessed OPG's performance in this SCA through compliance verification activities, including onsite inspections in 2017. CNSC staff stated that OPG adequately addressed all findings and recommendations from these compliance verification activities.</p>
31.	<p>The Commission concludes that OPG has the appropriate organization and management system in place to carry on the licensed activities. The Commission finds that the information provided by OPG and CNSC staff demonstrates that OPG has acceptable programs in place to ensure that its facility achieves its safety objectives, fosters a healthy safety culture and has an appropriate reporting process applicable to all events in respect of which OPG is required to report. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff's assessment that OPG has implemented and maintained a management system to operate the facility, and that the management system meets the requirements of CSA N286-12 and REGDOC-2.1.1

¹⁷ CSA N286-12, *Management system requirements for nuclear facilities*, CSA group, 2012.

¹⁸ REGDOC-2.1.2, *Safety Culture*, CNSC, April 2018.

¹⁹ REGDOC-2.1.1, *Management System*, CNSC, May 2019.

	<ul style="list-style-type: none"> • The Commission is satisfied that the evidence presented by OPG demonstrates that OPG has made a continued commitment to maintaining and improving its management system in accordance with regulatory requirements • The Commission is satisfied that the evidence presented by OPG demonstrates that OPG has an acceptable safety culture and a process in place to monitor safety culture in the organization through different avenues, such as safety culture self assessments, in accordance with REGDOC-2.1.2.
	<i>4.2.2 Human Performance Management</i>
32.	Human performance management encompasses activities to ensure that OPG workers are sufficient in number in all relevant job areas, and have the necessary knowledge, skills, procedures, and tools in place to safely carry out their duties.
33.	In section 3.2 of CMD 23-H9.1, OPG submitted that it has implemented a systematic approach to training (SAT) which identifies the training needed to meet the skill and knowledge requirements of the position, in accordance with the requirements of REGDOC-2.2.2, Personnel Training, Version 2 . ²⁰ OPG added that it performs annual self assessments of Human Performance to determine any gaps with regulatory requirements.
34.	OPG submitted that it complies with the requirements in CNSC REGDOC-2.2.4, Fitness for Duty: Managing Worker Fatigue ²¹ and REGDOC-2.2.4, Fitness for Duty, Volume II: Managing Alcohol and Drug Use, Version 3 ²² with the exception of paragraphs 5.1 and 5.5 for pre-placement testing and random testing ²³ .
35.	In section 3.2 of CMD 23-H9, CNSC staff confirmed that OPG maintains training documentation and a SAT-based training program that are in full compliance with the requirements of REGDOC-2.2.2. CNSC staff added that it inspected OPG’s Human Performance Program in 2018 and observed that DWMF workers were well organized and understood how to carry out their tasks safely. CNSC staff further confirmed that OPG has implemented REGDOC-2.2.4, Fitness for Duty, Volume II: Managing Alcohol and Drug Use, Version 3 at the DWMF, with the aforementioned exception of pre-placement and random alcohol drug testing.
36.	The Commission concludes that OPG has appropriate measures in place to manage human performance for the conduct of licensed activities at the DWMF. The

²⁰ REGDOC-2.2.2, *Personnel Training, Version 2*, CNSC, December 2016

²¹ REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue*, CNSC, March 2017

²² REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use Version 3*, January 2021

²³ The Federal Court of Canada has ordered that the implementation of paragraphs 5.1 (pre-placement testing) and 5.5 (random testing) of REGDOC-2.2.4, *Fitness for Duty, Volume II: Managing Alcohol and Drug Use, Version 3* be stayed pending the decision of the Federal Court’s judicial review.

	<p>Commission is satisfied that OPG’s employees are appropriately trained and qualified to carry on the licensed activities. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG has a SAT-based training program in place that meets regulatory requirements, including CNSC REGDOC-2.2.2, • The Commission agrees with CNSC staff’s assessment that OPG has effectively implemented programmatic requirements and good operating practices • The Commission is satisfied that OPG has implemented REGDOC-2.2.4, Volumes I and II.
	<p>4.2.3 <i>Operating Performance</i></p>
<p>37.</p>	<p>Operating performance includes an overall review of the conduct of the licensed activities and the activities that enable effective performance at the DWMF, as well as improvement plans and significant future activities.</p>
<p>38.</p>	<p>In Section 3.3 of CMD 23-H9.1, OPG provided information on how it ensures that licensed activities are conducted safely at the DWMF. OPG explained that its operations program monitors, measures and tracks parameters to ensure that the DWMF is operated in a manner consistent with regulatory requirements. OPG added that its Operating Policies and Principles, Conduct of Regulatory Affairs program, and Performance Improvement program support operations. OPG noted that these programs include self-assessment, benchmarking, and event reporting.</p>
<p>39.</p>	<p>OPG submitted that it follows the requirements in REGDOC-3.1.2, <i>Reporting Requirements, Volume I: Non-Power Reactor Class I Facilities and Uranium Mines and Mills</i>²⁴ for reportable events. OPG reported 33 events to the CNSC over the current licence period. OPG added that it posts reportable events on the OPG public website and that it submits Quarterly Operations Reports and Annual Compliance Reports to the CNSC.</p>
<p>40.</p>	<p>OPG reported that Used Fuel Dry Storage Buildings #1 and #2 became operational in 2007 and in March 2016, respectively, and that the Retube Waste Storage Building was approved for service on September 30, 2017. OPG noted its planned future improvements for the DWMF included the construction of two new buildings and the development and procurement of a next-generation dry storage container welding machine.</p>

²⁴ REGDOC-3.1.2 *Reporting Requirements, Volume I: Non-Power Reactor Class I Nuclear Facilities and Uranium Mines and Mills*, January 2018

41.	For the buildings built by OPG during the current licence period, CNSC staff reported that it assessed OPG's commissioning reports and verified that OPG had provided adequate information for CNSC staff to authorize building operations in accordance with the delegation of authority under the licence. ²⁵ CNSC staff confirmed that the design and location of the new buildings remained within the safety and design basis of the DWMF.
42.	In section 3.3 of CMD 23-H9, CNSC staff reported that OPG has operated its DWMF in compliance with CNSC regulatory requirements. CNSC staff submitted that OPG maintains comprehensive procedures across all of its programs. CNSC staff's assessment of OPG's performance over the previous licence period was informed by compliance verification activities, including 22 inspections covering aspects of Operating Performance. CNSC staff noted that the non-compliances identified during its inspections were of low safety significance, and that OPG adequately addressed all inspection findings. CNSC staff also reviewed procedures to ensure that they reflect actual practices. CNSC staff also reported that OPG continued to submit annual compliance reports in accordance with REGDOC-3.1.2.
43.	The Commission asked for information regarding the nature of the reportable events at the DWMF. CNSC staff reported that all the events were considered to be of low safety significance, such as expired equipment calibration and a late submission of inventory change documents for dry storage containers. CNSC staff explained that it monitors the nature and frequency of the events, and whether there are trends. CNSC staff added that OPG implemented satisfactory corrective actions in response to the reportable events, and that all actions were closed.
44.	<p>The Commission concludes that OPG has appropriate programs and measures in place to conduct licensed activities at the DWMF in a manner that provides for the protection of the health and safety of persons and the environment. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none">• The Commission agrees with CNSC staff's assessment that OPG operated the DWMF in accordance with regulatory requirements over the licence period• The Commission accepts the rationale for CNSC staff's assessment that OPG's programs and procedures for operating the DWMF meet regulatory requirements, including a program for reporting that conforms with CNSC REGDOC-3.1.2• The Commission is satisfied that OPG reported and implemented corrective actions for events, and that OPG closed all actions associated with events and operating performance-related inspections during the licence period.

²⁵ The Commission may delegate authority to certain CNSC staff in order to provide adequate regulatory oversight of changes that are administrative in nature, and do not require a licence amendment nor Commission approval. The delegation of authority for the current licence period is set out in the Commission's Record of Decision.

	<i>4.2.4 Safety Analysis</i>
45.	Safety analysis, which supports the overall safety case for a facility, includes a systematic evaluation of the potential hazards associated with the conduct of the licensed activity or the operation of a facility. Safety analysis also considers the effectiveness of preventive measures and strategies in reducing the effects of such hazards.
46.	OPG described its safety analysis program in section 3.4 of CMD 23-H9.1. OPG submitted that its safety analysis reports (SARs) provide a description of the DWMF and building layouts, processes, operating limits, and scenarios based on hazards and postulated initiating events, including seismic events and tornados. OPG reported that its SARs demonstrate that dose rates and emissions from the DWMF, under normal conditions as well as for credible abnormal events, do not result in unacceptable radiation doses to the public or to workers. OPG explained that the SARs demonstrate the safety case of the DWMF through an evaluation of design provisions and procedural measures that could prevent events or mitigate their consequences through defence in depth. OPG further reported that its criticality assessments for the used fuel stored in dry storage containers have demonstrated that used CANDU fuel stored in dry storage containers could not achieve nuclear criticality ²⁶ under any postulated accident scenario.
47.	CNSC staff confirmed that, based on its review of OPG’s application and supporting documents, the radiological and non-radiological risks associated with OPG’s operations at the DWMF are low. In section 3.4 of CMD 23-H9, CNSC staff reported that OPG has an effective process in place to identify and evaluate potential safety hazards associated with the operation of the DWMF. CNSC staff noted that the CNSC published REGDOC 2.4.4, Safety Analysis for Class IB Facilities , ²⁷ in October 2022, and that OPG is expected to perform a gap analysis against the new REGDOC as part of its implementation.
48.	The Commission enquired about the worst-case accident scenario used for OPG’s safety assessment of the DWMF. An OPG representative explained that OPG used three types of accident in its safety assessment: transport accidents, processing accidents and long-term storage accidents. The OPG representative described the different assumptions for each accident scenario. For example, for transport accidents, the limiting event used in the safety assessment is an accident where 100 per cent of the fuel pencils ²⁸ are assumed to have failed, meaning that their contents would be exposed to air.

²⁶ A self-sustaining chain reaction of nuclear fission.

²⁷ REGDOC 2.4.4, *Safety Analysis for Class IB Facilities*, October 2022.

²⁸ A fuel pencil is a zirconium-tin alloy tube containing ceramic uranium dioxide (UO₂) fuel pellets. Fuel pencils are welded together to make fuel bundles.

<p>49.</p>	<p>In its intervention, the Ontario Clean Air Alliance (CMD 23-H9.2) expressed concerns regarding the safety of the DWMF buildings and structures. The Ontario Clean Air Alliance advocated for OPG to instead build above-ground reinforced concrete vaults, positing that they would be safer than the existing buildings and structures. The intervenor noted an example of such a facility in Germany. The Commission asked for more information concerning international expectations respecting used fuel waste facilities. CNSC staff responded that International Atomic Energy Agency (IAEA) safety standards do not prescribe the type of storage facilities that are to be used, but that the waste be packaged and designed so that radioactive material is appropriately contained during normal operations as well as in accident scenarios. CNSC staff confirmed that the CNSC’s regulatory framework and expectations are aligned with the IAEA safety standards.</p>
<p>50.</p>	<p>In its intervention, Northwatch (CMD 23-H9.24) submitted an expert report prepared by Dr. S. Nijhawan. The report raised a number of concerns regarding the dry storage containers, including:</p> <ul style="list-style-type: none"> • the adequacy of fuel bundle qualification before storage; • potential escaping gaseous fission products from dry storage containers; and • the safety of the design of dry storage containers. <p>With respect to potential off-gassing from dry storage containers, the Commission asked whether OPG had a system to monitor for off-gassing of dry storage containers in the storage building. An OPG representative explained that dry storage containers are seal-welded and stored at a slight vacuum with a helium backfill to prevent any potential off-gassing from releasing. The OPG representative added that OPG monitors the storage buildings for radiation levels, but not for off-gassing.</p>
<p>51.</p>	<p>On the same topic, CNSC staff explained that there is no source of gassing in the dry storage containers as OPG procedures do not allow placing damaged or defective fuel into the dry storage containers. CNSC staff added that it does not have concerns as confirmed through the review of OPG’s quarterly reports, annual reports, and inspection and monitoring programs.</p>
<p>52.</p>	<p>The Commission asked whether OPG had ever had an issue with the integrity of a dry storage container. An OPG representative confirmed that OPG had not experienced any leaks from a dry storage container.</p>
<p>53.</p>	<p>The Commission concludes that OPG’s safety analysis is adequate for the licensed activities associated with the operation of the DWMF under the proposed license. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission is satisfied that the evidence provided by OPG and CNSC staff on the systematic evaluation of potential hazards and preparedness for reducing the effects of such hazards demonstrates the safety case through defence in depth

	<ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG’s DWMF Safety Analysis Report is adequate. • The Commission is satisfied that the CNSC’s regulatory requirements are aligned with the IAEA safety standards, and that the safety case for the DWMF, including the dry storage containers, meets CNSC requirements and international expectations. <p>The Commission notes that OPG is expected to implement REGDOC-2.4.4. The Commission expects to be updated on the status of OPG’s implementation of REGDOC-2.4.4 as part of CNSC staff’s <i>Regulatory Oversight Report</i>.</p>
	<p>4.2.5 <i>Physical Design</i></p>
<p>54.</p>	<p>Physical design includes the activities to design systems, structures and components to meet and maintain the design basis of a facility. The design basis is the range of conditions, according to established criteria, that the facility must withstand without exceeding authorized limits for the planned operation of safety systems.</p>
<p>55.</p>	<p>In section 3.5 of its CMD, OPG described its physical design program for the DWMF, which includes facility and process changes and control, and a pressure boundary program. OPG noted that its programs and procedures, including engineering change control, comply with CSA N286.0, <i>Overall Quality Assurance Program Requirements for Nuclear Power Plants</i>,²⁹ and all relevant legal and regulatory requirements. OPG also submitted that its Nuclear Pressure Boundary program complies with the requirements of CSA N285.0, <i>General Requirements for Pressure-Retaining Systems and Components in CANDU Nuclear Power Plants</i>.³⁰ OPG further submitted that all design changes during the current licence period were in accordance with the National Fire Code of Canada, 2010³¹ and National Fire Code of Canada, 2015³² and CSA N393-13, <i>Fire Protection for Facilities that Process, Store and Handle Nuclear Substances</i>.³³</p>
<p>56.</p>	<p>In section 3.5 of its CMD, CNSC staff confirmed that OPG is meeting regulatory requirements for the physical design SCA. CNSC staff reported that OPG maintains a Fire Hazard Assessment, which it updates periodically to reflect changes and modifications in the DWMF. CNSC staff added that the Fire Hazard Assessment found that that the performance goals, objectives and criteria of CSA N393-13 have been satisfied for the DWMF.</p>

²⁹ CSA N286.0, *Overall Quality Assurance Program Requirements for Nuclear Power Plants*, CSA Group, 2012.

³⁰ CSA N285.0, *General Requirements for Pressure-Retaining Systems and Components in CANDU Nuclear Power Plants*, CSA Group 2008.

³¹ *National Fire Code of Canada 2010*, National Research Council Canada, 2010.

³² *National Fire Code of Canada 2015*, National Research Council Canada, 2015.

³³ CSA N393-13, *Fire Protection for Facilities that Process, Store and Handle Nuclear Substances*, CSA Group, 2013 (reaffirmed in 2018).

57.	With respect to Used Fuel Dry Storage Buildings #1 and #2 and the Retube Waste Storage Building, which OPG built during the current licence period, CNSC staff submitted that it confirmed that the commissioning results demonstrated that the installations met the functional, performance and safety requirements of the design and regulatory requirements. In accordance with the delegated authority, CNSC staff verified and authorized OPG to operate the new installations which meet the parameters of the licensing basis.
58.	<p>The Commission concludes that the physical design program that OPG continues to implement and maintain at its DWMF is adequate for the requested licence period. The information provided demonstrates that OPG has adequate resources in place to safely manage and implement design changes that are within the licensing basis. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG’s physical design program meets regulatory requirements, including applicable CSA Group standards and the <i>National Fire Code of Canada</i> • The Commission is satisfied that OPG’s Fire Hazard Assessment demonstrates that the DWMF satisfies the objectives and criteria of CSA N393-13.
	<i>4.2.6 Fitness for Service</i>
59.	Fitness for service covers activities that are performed to ensure that systems, structures and components at the DWMF continue to effectively fulfill their intended purpose.
60.	In section 3.6 of CMD 23-H9.1, OPG described its fitness for service programs and activities, including details on the programs in place to monitor the performance of structures, systems, and components and ensure sufficient reliability. OPG submitted that it has implemented a maintenance program, which includes programs for equipment reliability and aging management, to ensure the ongoing fitness-for-service of the DWMF’s systems. OPG explained that it plans, schedules, and executes preventive maintenance activities according to its preventive maintenance program. OPG noted that it also monitors and trends system performance, including process parameters, field observations, maintenance work order backlogs, inspection results and spare parts status, to initiate maintenance activities before failures occur.
61.	CNSC staff assessed OPG’s fitness for service program and confirmed that it meets regulatory requirements of REGDOC-2.6.3, Aging Management . ³⁴ In section 3.6 of CMD 23-H9, CNSC staff submitted that OPG has adequate preventative maintenance and in-service inspection programs in place at its DWMF to ensure structures, systems and components remain effective over time. CNSC staff reported that OPG inspects dry

³⁴ REGDOC 2.6.3, *Aging Management*, March 2014.

	storage container seal welds after fuel loading, loaded dry storage containers for aging related degradation, and storage facilities.
62.	The Commission noted that the Dry Storage Containers have a design life of 50 years while the planning assumption from the Nuclear Waste Management Organization is that the shipping of used fuel from Darlington NGS to a permanent repository would start in 2050 and finish in 2088 ³⁵ . Asked about aging management, an OPG representative reported that, as part of its life cycle management program, OPG performed an engineering assessment on the container’s design that concluded that, with proper maintenance, the life of containers would be around 100 years. ³⁶
63.	The Commission concludes that the measures OPG has in place to ensure the fitness for service of equipment at its DWMF are adequate to carry on licensed activities under the renewed licence. The Commission comes to this conclusion on the following basis: <ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG’s fitness for service program meets regulatory requirements, including REGDOC-2.6.3 • The Commission agrees with CNSC staff’s assessment that OPG has implemented and maintained a program for periodic inspection and testing for the facility • The Commission agrees with CNSC staff’s assessment that OPG’s governing documents for the conduct of maintenance meet regulatory requirements.
	<i>4.2.7 Radiation Protection</i>
64.	As part of its evaluation of the adequacy of the measures for protecting the health and safety of persons, the Commission considered the past performance of OPG in radiation protection. The Commission considered the information provided by OPG and CNSC staff to assess whether OPG’s radiation protection program for the DWMF satisfies the requirements of the Radiation Protection Regulations . The Commission also considered whether OPG’s radiation protection program ensures that radiation doses to persons and contamination are monitored, controlled and kept as low as reasonably achievable (ALARA), with social and economic factors taken into consideration.
65.	In section 3.7 of CMD 23-H9.1, OPG submitted that doses to OPG workers remained low over the current licence period. OPG listed its controls and programs for worker and public protection, which include the following: <ul style="list-style-type: none"> • 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

³⁵ Transcript of hearing, January 26, 2023, page 223.

³⁶ Transcript of hearing, January 26, 2023, page 234.

	<ul style="list-style-type: none"> • Controlling the use of licensed radioactive devices and equipment • Planning all radioactive work, considering personnel, hardware, procedures, supervision, and the physical environment of the job • Controlling facility access and working rights through comprehensive training and qualification program.
66.	<p>OPG reported that, over the licence period, it did not exceed any regulatory limits with respect to radiation protection at the DWMF. The maximum annual effective dose for a Nuclear Energy Worker (NEW) was 1.7 millisieverts per year (mSv/y) in 2014 and 2015, which was well below the regulatory dose limit.³⁷ OPG explained that it maintains doses ALARA through the use of:</p> <ul style="list-style-type: none"> • engineered barriers • work planning and • exposure control levels for NEWs. <p>OPG noted that dose rates are sufficiently low at DWMF that public tours are regularly carried out in both the storage and processing buildings.</p>
67.	<p>In section 3.7 of CMD 23-H9.1, OPG submitted that it uses dosimeters mounted on the DWMF perimeter fence to monitor doses. OPG reports the data to the CNSC in the DWMF Quarterly Operations report. OPG reported an overall average of 0.09 µSv/h around the DWMF main facility and 0.06 µSv/h around the Retube Waste Storage Building, adding that these dose rates were very close to ambient background radiation levels.</p>
68.	<p>In section 3.7 of CMD 23-H9, CNSC staff submitted that OPG’s radiation protection program meets regulatory requirements and confirmed that OPG’s effective dose trends have been maintained well below regulatory dose limits. CNSC staff assessed the compliance of OPG’s radiation protection program through a focused inspection in 2022. CNSC staff reported that the findings from this inspection were of low safety significance and that OPG was in the process of addressing them. CNSC staff added that it would assess the adequacy of OPG’s corrective actions and monitor their implementation through ongoing compliance verification activities.</p>
69.	<p>CNSC staff reported that there were no action level exceedances at the DWMF during licence period.³⁸ CNSC staff added that the quarterly reports submitted by OPG for DWMF during the licence period met the regulatory requirements specified in REGDOC-3.1.2, and that no adverse trends were noted.</p>

³⁷ The regulatory dose limits for nuclear energy workers are 50 mSv in any one year and 100 mSv in a five-year dosimetry period. The regulatory dose limit for members of the public is 1 mSv in one calendar year.

³⁸ Action levels are designed to alert licensees before regulatory dose limits are reached. By definition, if an action is reached, a loss of control of some part of the associated radiation protection program may have occurred, and specific action is required, as defined in the *Radiation Protection Regulations*. The licensee shall notify the Commission or a person authorized by the Commission within 24 hours of becoming aware that an action level has been exceeded and shall file a written report within 45 working days of becoming aware of the matter.

70.	<p>The Commission concludes that OPG has implemented and maintained an adequate radiation protection program to protect the health and safety of persons and the environment from radiation hazards associated with the OPG DWMF. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG has implemented a radiation protection program that meets the requirements of the <i>Radiation Protection Regulations</i> • The Commission is satisfied that effective and equivalent doses to NEWs at the OPG facility are below regulatory requirements • The Commission is satisfied that OPG has addressed – or has plans in place to address – all action items raised during radiation protection-related inspection over the current licence period
	<p><i>4.2.8 Conventional Health and Safety</i></p>
71.	<p>A conventional health and safety program’s objective is to minimize risk to the health and safety of workers posed by conventional (non-radiological) hazards in the workplace. A conventional health and safety program manages conventional workplace safety hazards and ensures compliance with applicable labour codes. OPG falls under the dual regulatory oversight of the CNSC and the Ontario Ministry of Labour and therefore must also comply with the <i>Occupational Health and Safety Act of Ontario</i>³⁹ and the <i>Labour Relations Act 1995</i>.⁴⁰</p>
72.	<p>In section 3.8 of CMD 23-H9.1, OPG provided information regarding its conventional health and safety program, including the implementation of its safety policy and setting site safety and health objectives. OPG reported that no lost time accidents or medically treated injuries have occurred at the DWMF for its entire operational period, which began in 2007.</p>
73.	<p>OPG described the safety enhancements it made to its equipment and systems over the current licence period, as well as future improvement initiatives. OPG highlighted the implementation of a “Total Health Initiative” to support employees and their families, primarily through health education, health promotion, and disease and injury prevention.</p>
74.	<p>In section 3.8 of CMD 23-H9, CNSC staff reported that OPG had effectively implemented a conventional health and safety program to keep workers safe. CNSC staff explained that it verified OPG’s conventional health and safety program during routine onsite inspections over the licence period. CNSC staff noted that its inspectors</p>

³⁹ R.S.O. 1990, c. O.1

⁴⁰ S.O. 1995, c. 1, Sched. A

	issued one low safety significance notice of non-compliance for conventional health and safety during the licence period, and that OPG addressed it to CNSC staff's satisfaction.
75.	<p>The Commission concludes that the health and safety of workers was adequately protected during the operation of the facility over the current licence period, and that the health and safety of persons will continue to be adequately protected throughout the proposed licence period. The Commission comes to its conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff's assessment that OPG's conventional health and safety program meets regulatory requirements • The Commission is satisfied that OPG adequately addressed the lone inspection finding over the current licence term • The Commission is satisfied that OPG had no lost-time or medical treatment injuries at the DWMF over the last 14 years
	<i>4.2.9 Environmental Protection</i>
76.	Environmental protection programs are intended to identify, control, and monitor all releases of radioactive and hazardous substances, and aim to minimize the effects on the environment which may result from the licensed activities. These programs include effluent and emission control, environmental monitoring, and estimated doses to the public.
77.	<p>In section 3.9 of CMD 23-H9.1, OPG provided the Commission with detailed information regarding its environmental monitoring and protection programs, noting that its activities to identify, control, and monitor all releases of radioactive and hazardous substances and effects on the environment include:</p> <ul style="list-style-type: none"> • Monitoring radiological emissions to air and water to ensure compliance with regulatory limits • Monitoring the concentrations of radionuclides in the offsite environment (air, water, and foodstuffs) to confirm compliance with CNSC public dose limits • Monitoring the concentrations of non-radioactive emissions to the environment to confirm compliance to environmental regulatory limits.
78.	<p>OPG submitted that it would be implementing the following CSA Group Standard and CNSC Regulatory Document at the DWMF, effective December 31, 2022:</p> <ul style="list-style-type: none"> • CSA N288.7-15, <i>Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills</i>⁴¹

⁴¹ CSA N288.7-15, *Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills*, 2015.

	<ul style="list-style-type: none"> • REGDOC 2.9.1, version 1.1, <i>Environmental Protection: Environmental Principles, Assessments and Protection Measures</i>⁴².
79.	<p>OPG reported that the DWMF does not have any specific environmental action levels as the emissions from the facility have historically been a small fraction of the emissions from the Darlington NGS. OPG explained that no airborne emissions are expected from loaded dry storage containers during transfer from the Darlington NGS to the DWMF, nor during storage of seal welded dry storage containers under normal operating conditions. OPG submitted that there is a small potential for airborne emissions resulting from dry storage container processing operations such as welding and vacuum drying, and that the dry storage container processing building has a dedicated active ventilation system, with a particulate filter that is replaced and analyzed on a weekly basis. CNSC staff also submitted that releases to air at the DWMF from 2013 to 2021 remained well below the licence limit and the action level.</p>
80.	<p>OPG reported that an assessment of dry storage container processing building ventilation exhaust identified that routine monitoring is not required since the contribution of the stack exhaust is negligible and does not meet monitoring or reporting criteria as per CSA N288.5-11, <i>Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills</i>.⁴³ Based on this assessment, OPG submitted that it intends to discontinue monitoring the dry storage container processing building ventilation stack exhaust. OPG added that it provided the results of this assessment and notification of the planned program change to the CNSC. The Commission notes that CNSC staff will evaluate proposed program changes against the licensing basis under licence condition G.2 Notification of Changes.</p>
81.	<p>CNSC staff submitted that OPG’s implementation of the environmental protection program meets CNSC’s regulatory requirements and expectations. CNSC staff added that the design and implementation of the environmental protection program at the DWMF complies with REGDOC 2.9.1. CNSC staff added that REGDOC-2.9.1, <i>Environmental Principles, Assessments and Protection Measures, Version 1.2 (2020)</i>⁴⁴ was published in September 2020. CNSC staff reported that it requested that OPG conduct a gap analysis and implementation plan to align the environmental protection program with the requirements.</p>
82.	<p>CNSC staff reported that OPG calculates an annual site public dose for the entire Darlington NGS site, which incorporates the DMWF. CNSC staff confirmed that radiological emissions from the DWMF are low and that public dose remained well below the regulatory limit throughout the current licence period. CNSC staff added that</p>

⁴² REGDOC 2.9.1, version 1.1, *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, April 2017.

⁴³ CSA N288.5-11, *Effluent Monitoring Programs at Class I Nuclear Facilities and Uranium Mines and Mills*, 2011.

⁴⁴ REGDOC 2.9.1, version 1.2, *Environmental Protection: Environmental Principles, Assessments and Protection Measures*, September 2020.

	<p>the maximum annual site public dose, calculated for the entire Darlington site, was 0.0008 mSv/y in 2018.</p>
83.	<p>OPG further reported that DWMF has no source for tritium releases, and noted that gross gamma⁴⁵ monitoring results from stormwater and foundation drainage were typically below the minimum detectable activity and consistently below administrative limits. OPG attributed the gross gamma detections to naturally occurring radionuclides present in the sediment runoff from the site. OPG reported that it discontinued routine stormwater and foundation drainage monitoring at the DWMF in December 2021, adding that potential impacts to surface water and groundwater at the site will continue to be assessed through its Environmental Risk Assessment and groundwater protection programs. CNSC staff informed the Commission⁴⁶ that it reviewed and accepted OPG's assessment demonstrating that routine monitoring is not required for radionuclides in stormwater and foundation drainage as the emissions from the DWMF are low.</p>
84.	<p>OPG noted that groundwater monitoring at the DWMF is integrated into the Darlington NGS groundwater monitoring program. OPG submitted that its groundwater monitoring program objectives are:</p> <ul style="list-style-type: none"> • Confirm predominant on-site groundwater flow characteristics at the Darlington NGS • Monitor changes to on-site groundwater quality to ensure timely detection of inadvertent releases to groundwater • Ensure that there are no adverse off-site impacts from the Darlington NGS groundwater <p>OPG reported that samples collected for groundwater monitoring are predominantly analyzed for tritium and that results show that there is no impact to groundwater associated with the operation of DWMF.</p>
85.	<p>OPG reported that its Environmental Risk Assessment (ERA) for the Darlington NGS incorporates the DWMF, and complies with the requirements of CSA N288.6-12, <i>Environmental Risk Assessment at Class I Nuclear Facilities and Uranium Mines and Mills</i>.⁴⁷ OPG explained that the ERA characterizes the baseline environment and assesses the human health and ecological risks from operations of the facilities located on the Darlington Nuclear site. OPG added that the ERA is reviewed every 5 years. OPG submitted that its 2020 Environmental Risk Assessment concluded that the Darlington Nuclear site, including DWMF, is operating in a manner that is protective of human and ecological receptors residing in the surrounding area. CNSC staff confirmed</p>

⁴⁵ Gamma gross count rates are measurements made by a detector that analyzes radiation emitted

⁴⁶ CNSC Staff, *CMD 23-H9: Ontario Power Generation Inc. – Darlington Waste Management Facility – Application to Renew the Class IB Waste Facility Operating licence for Ontario Power Generation in Darlington, Ontario*, 27 October 2022, page 47.

⁴⁷ CSA N288.6-12, *Environmental Risk Assessment at Class I Nuclear Facilities and Uranium Mines and Mills*, 2012

	that OPG’s ERA complies with CSA N288.6-12, and that no new risks have emerged since the previous ERA. ⁴⁸
86.	OPG also submitted information about its biodiversity conservation program at the Darlington NGS, as well as regarding habitat restoration and enhancements. OPG explained that its Nuclear Biodiversity Conservation Plan incorporates the restoration, retention, replacement, and recovery of multiple significant natural areas and related species at risk. OPG noted that it would work with community partners to support regional ecosystems and biodiversity through science-based habitat stewardship, where disruption is required.
87.	CNSC staff submitted that, through its Independent Environmental Monitoring Program (IEMP), CNSC staff analyzed samples from publicly accessible areas around the OPG site. CNSC staff completed IEMP campaigns around the OPG site in 2014, 2015, 2017 and 2021. CNSC staff noted that the results from the most recent campaign indicated that concentrations of radioactive substances and hazardous substances around the Darlington facility were well below guideline levels. Further, CNSC staff reported that the results from each of the IEMP campaigns are consistent with the monitoring results submitted by OPG and indicate that the public and the environment surrounding the OPG facility are protected, and no human health impacts are expected. ⁴⁹
88.	<p>The Commission concludes that, based on the results and information provided, and given the mitigation measures and programs that are in place to control hazards, OPG has and will continue to provide adequate protection to the health and safety of persons and the environment. The Commission is satisfied that the measures implemented at the DWMF are adequate for the purposes of environmental protection under the NSCA. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission is satisfied that OPG has maintained an environmental management system in compliance with REGDOC-2.9.1 • The Commission is satisfied that releases to the environment from the DWMF during the licence period were well below licence limits • The Commission agrees with CNSC staff’s assessment that OPG’s environmental monitoring program meets regulatory requirements • The Commission is satisfied that environmental monitoring data have shown that public dose remained well below the regulatory limit throughout the current licence period • The Commission is satisfied that results from the CNSC’s IEMP support CNSC staff’s assessment that the public and the environment surrounding the PHAI sites are protected

⁴⁸ CNSC Staff, *CMD 23-H9: Ontario Power Generation Inc. – Darlington Waste Management Facility – Application to Renew the Class IB Waste Facility Operating licence for Ontario Power Generation in Darlington, Ontario*, 27 October 2022, page 50.

⁴⁹ [IEMP results](#) for the OPG Darlington Nuclear Generating Site are available on the CNSC’s website.

	<ul style="list-style-type: none"> • The Commission is satisfied that OPG’s 2020 Environmental Risk Assessment meets regulatory requirements <p>The Commission notes that OPG is expected to implement the following CNSC REGDOC and CSA Group standards:</p> <ul style="list-style-type: none"> • REGDOC-2.9.1, • CSA N288.1-20, <i>Guidelines for modelling radionuclide environmental transport, fate and exposure associated with the normal operation of nuclear facilities</i>⁵⁰ • CSA N288.8-17, <i>Establishing and Implementing Action Levels to Control Releases to the Environment from Nuclear Facilities</i>⁵¹ <p>The Commission expects to be updated on the status of OPG’s implementation of these documents as part of CNSC staff’s <i>Regulatory Oversight Report</i>.</p>
	<p><i>4.2.10 Emergency Management and Fire Protection</i></p>
89.	<p>Emergency management and fire protection programs cover the measures for preparedness and response capabilities implemented by OPG in the event of emergencies and non-routine conditions at the DWMF. These measures include nuclear emergency management, conventional emergency response, and fire protection and response.</p>
90.	<p>In section 3.10 of CMD 23-H9.1, OPG submitted that it maintains a Consolidated Nuclear Emergency plan that documents the emergency response capabilities in the event of a nuclear emergency at OPG’s nuclear stations, in compliance with CNSC REGDOC-2.10.1, Nuclear Emergency Preparedness and Response, Version 2.⁵² OPG also submitted that its Fire Protection Program meets the requirements of CSA N393-13. OPG noted that the Darlington NGS Emergency Response Team will support Clarington Emergency and Fire Services as the first responders to events at the DWMF, in accordance with the Memorandum of Understanding between the Municipality of Clarington and OPG.</p>
91.	<p>OPG reported that it performs fire drills annually with the participation of Clarington Emergency and Fire Service, in accordance with the CSA N393-13 and the <i>National Fire Code of Canada, 2010</i>. OPG also reported that, during the current licence period, independent third-party reviews were completed tri-annually to confirm the DWMF fire system has been operated, inspected, tested, and maintained in accordance with the</p>

⁵⁰ CSA N288.1-20, *Guidelines for modelling radionuclide environmental transport, fate and exposure associated with the normal operation of nuclear facilities*, 2020.

⁵¹ CSA N288.8-17, *Establishing and Implementing Action Levels to Control Releases to the Environment from Nuclear Facilities*, 2020.

⁵² REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response, Version 2*, February 2016.

	<p><i>National Fire Code of Canada, 2010</i>. OPG added that it was also compliant with the <u><i>National Building Code of Canada, 2010</i></u>.⁵³</p>
92.	<p>In section 3.10 of CMD 23-H9, CNSC staff confirmed that OPG meets the CNSC regulatory requirements in this SCA, including compliance with REGDOC-2.10.1, the <i>National Fire Code of Canada, 2010</i>, the <i>National Building Code of Canada, 2010</i> and CSA N393-13. CNSC staff reported that OPG has an acceptable fire hazard assessment that indicates that OPG has implemented adequate fire mitigation measures.</p>
93.	<p>CNSC staff submitted that it conducted inspections focused on emergency preparedness and fire response during the licence period. CNSC staff reported that its March 2018 inspection found that OPG was not conducting the required annual fire drills to test fire response capability. CNSC staff also reported that during its September 2019 inspection, it identified a finding of medium safety significance where one OPG staff member did not evacuate an assembly area during a fire alarm. CNSC staff verified OPG’s corrective actions and confirmed that OPG adequately addressed all non-compliances.</p>
94.	<p>The Commission asked for additional details on the reason for OPG missing the required annual fire drills in 2018. CNSC staff explained that OPG had performed annual fire drills for the Darlington NGS site in accordance with CSA N293, <i>Fire protection for nuclear power plants</i>⁵⁴ and had misunderstood that these drills would also suffice for the DWMF. CNSC staff clarified with OPG that, under the DWMF licence, OPG needed to conduct separate and distinct fire drills at the DWMF to meet CSA N393-13 requirements.</p>
95.	<p>The Commission concludes that OPG’s nuclear and conventional emergency management program and the fire protection measures in place at the DWMF are adequate to protect the health and safety of persons and the environment for the proposed licensed activities. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG’s emergency preparedness program meets regulatory requirements, including REGDOC-2.10.1, the <i>National Fire Code of Canada, 2010</i>, the <i>National Building Code of Canada, 2010</i> and CSA N393-13 • The Commission is satisfied that OPG has an acceptable fire hazard assessment that indicates that OPG has implemented adequate fire mitigation measures • The Commission is satisfied that OPG has qualified emergency response personnel onsite, and arrangements with Clarington Emergency and Fire Services and the Municipality of Clarington.

⁵³ *National Building Code of Canada 2010*, National Research Council Canada, 2010.

⁵⁴ CSA N293, *Fire protection for nuclear power plants*, CSA Group, 2012 (Reaffirmed 2022)

	<i>4.2.11 Waste Management</i>
96.	Waste management covers waste-related programs that form part of a facility's operations up to the point where the waste is removed from the licensed site for storage, treatment, or disposal at another licensed location, and includes waste minimization, segregation, characterization, and storage programs. Waste management covers the waste generated during the operations of the DWMF.
97.	<p>In section 3.11 of CMD 23-H9.1, OPG described its waste management program and reported that it complies with the requirements of the following CSA Group standards and CNSC regulatory document:</p> <ul style="list-style-type: none"> • CSA N292.0-19, <i>General Principles for the Management of Radioactive Waste and Irradiated Fuel</i>⁵⁵ • CSA N292.2-13, <i>Interim Dry Storage of Irradiated Fuel</i>⁵⁶ • CSA N292.3-14, <i>Management of low- and Intermediate-Level Radioactive Waste</i>⁵⁷ • CNSC REGDOC-2.11.1, Waste Management Volume I: Management of Radioactive Waste⁵⁸, except for section 10.5, which requires the implementation of REGDOC-2.11.2, Decommissioning⁵⁹ <p>OPG committed to submit a gap analysis and implementation plan for compliance with REGDOC-2.11.2 to the CNSC by March 17, 2023.</p>
98.	OPG explained that the waste generated at the DWMF is low-level waste and that the DWMF does not generate intermediate or high-level radioactive wastes. OPG reported that its employees use waste management procedures to ensure that waste generated at the DWMF is separated properly, and that the annual volumes amount to less than one drum.
99.	In section 3.11 of CMD 23-H9, CNSC staff confirmed that OPG maintains a waste management program in compliance with CSA N292.0-19 and N292.3-14. CNSC staff added that, during the licence period, CNSC inspectors observed that OPG continued to employ effective programs for the waste characterization, minimization, and management practices at the DWMF.
100.	CNSC staff noted that, in addition to the CNSC REGDOCs on waste management, REGDOC-2.11.1, and REGDOC-2.11.2, OPG is expected to implement CSA N292.8,

⁵⁵ CSA N292.0-14, *General principles for the management of radioactive waste and irradiated fuel*, CSA group, 2014.

⁵⁶ CSA N292.2-13, *Interim Dry Storage of Irradiated Fuel*, CSA group, 2013.

⁵⁷ CSA N292.3-14, *Management of low- and intermediate-level radioactive waste*, CSA group, 2014.

⁵⁸ REGDOC-2.11.1, *Waste Management Volume I: Management of Radioactive Waste*,⁵⁸, January 2021.

⁵⁹ REGDOC-2.11.2, *Decommissioning*, January 2021.

	<p><i>Characterization of radioactive waste and irradiated fuel</i>,⁶⁰ which was published in 2021. CNSC staff expect OPG to submit a gap analysis and implementation plan to align its waste management program with the requirements of CSA N292.8.</p>
101.	<p>The Commission concludes that OPG has implemented and continues to maintain a waste management program to safely manage waste at the DWMF. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG has implemented a waste management program that meets regulatory requirements • The Commission is satisfied that OPG has plans in place to implement REGDOC-2.11.1 and REGDOC-2.11.2 on waste management. <p>The Commission expects to be updated on the status of OPG’s implementation of REGDOC-2.11.2 and CSA N292.8-21 as part of CNSC staff’s <i>Regulatory Oversight Report</i>.</p>
	<p><i>4.2.12 Security</i></p>
102.	<p>OPG’s security program at the DWMF must comply with the applicable provisions of the <i>General Nuclear Safety and Control Regulations</i>⁶¹ (GNSCR) and the <i>Nuclear Security Regulations, Part 2</i>⁶² (NSR). The Nuclear Security program supports OPG’s need to protect nuclear materials, respond to threats, and comply with legislative requirements.</p>
103.	<p>In section 3.12 of CMD 23-H9.1, OPG submitted that it implements and maintains a facility security program, which goal is to establish a state of security readiness to ensure safe and secure operation of OPG stations and facilities. OPG submitted that it complies with the following CNSC REGDOCs:</p> <ul style="list-style-type: none"> • <i>REGDOC-2.12.1, High-Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices</i>.⁶³ • <i>REGDOC-2.12.2, Site Access Security Clearance</i>.⁶⁴ • <i>REGDOC-2.2.4, Fitness for Duty, Volume III: Nuclear Security Officer Medical, Physical and Psychological Fitness</i>.⁶⁵

⁶⁰ CSA N292.8-21, *Characterization of radioactive waste and irradiated fuel*, CSA Group, 2021.

⁶¹ SOR/2000-202.

⁶² SOR/2000-209.

⁶³ REGDOC-2.12.1, *High-Security Facilities, Volume II: Criteria for Nuclear Security Systems and Devices*, April, 2018

⁶⁴ REGDOC-2.12.2, *Site Access Security Clearance*, April 2013.

⁶⁵ REGDOC-2.2.4, *Fitness for Duty, Volume III: Nuclear Security Officer Medical, Physical and Psychological Fitness*, September, 2018.

	OPG noted its commitment to submit a gap analysis and implementation plan for REGDOC-2.12.1, High Security Facilities, Volume I: Nuclear Response Force, Version 2 ⁶⁶ for DWMF to CNSC staff by February 28, 2023.
104.	OPG also submitted that it implemented a cyber security program to provide secure operations of computer systems and components important to nuclear safety, nuclear security, emergency preparedness, grid reliability and nuclear safeguards. OPG noted that it is working on continuous improvement initiatives to enhance its cyber security posture, such as: <ul style="list-style-type: none"> • Centralized Security Operations Centre, • Operational Technology Security Information and Event Management, and, • Operational Technology Passive Monitoring.
105.	In section 3.12 of CMD 23-H9, CNSC staff confirmed that OPG has implemented and maintained a security program that meets regulatory requirements under the GNSCR, Part 2 of the NSR, and REGDOC-2.12.3, Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material, Version 2.1 ⁶⁷ to prevent the loss, unauthorized removal and sabotage of nuclear substances, nuclear materials and prescribed equipment or information. CNSC staff also noted that, it inspected the DWMF on an 18-month cycle to verify compliance with regulatory requirements for security. CNSC staff reported that, over the licence period, CNSC security inspections confirmed that OPG is implementing and maintaining a satisfactory security program that meets the requirements set out in Part 1 of the NSR
106.	CNSC staff reported that it assesses OPG’s annual Threat and Risk Assessment. CNSC staff found the most recent update, submitted by OPG in December 2021, to be satisfactory. CNSC staff also reported that OPG performs suitable security training, exercises and drills as a means of validating security procedures, regulatory compliance and identifying areas for improvement in all facets of security operations.
107.	CNSC staff noted that OPG reported three security events of low security significance during the licence period, one in 2020 and two in 2018. CNSC staff confirmed that OPG implemented satisfactory compensatory and corrective measures in response to these events.
108.	In its intervention, the Ontario Clean Air Alliance (CMD 23-H9.2) expressed concerns regarding the security of the DWMF and the dry storage containers, noting its preference for attack-resistant, reinforced concrete vaults. In CMD 23-H9, CNSC staff described the robustness of the dry storage containers, explaining that they are concrete and steel-lined, and weigh about 90 tons each when loaded. CNSC staff submitted that, given the physical barriers in place along the protected area perimeter, there is

⁶⁶ REGDOC-2.12.1, *High Security Facilities, Volume I: Nuclear Response Force, Version 2*, September, 2018.

⁶⁷ REGDOC-2.12.3, *Security of Nuclear Substances: Sealed Sources and Category I, II and III Nuclear Material, Version 2.1*, September 2020.

	sufficient delay time for a response force to make an effective intervention in the event of attempted theft or sabotage of nuclear material at the DWMF. ⁶⁸
109.	The Commission, noting the robustness of the dry storage containers, asked CNSC staff for more information on the design-basis threat for the DWMF. CNSC staff explained that the design-basis threat describes the range of adversary characteristics against which all high-security site licensees have to design their security program to prevent any attempt of theft or sabotage. CNSC staff added that OPG's security program employs a defence in depth strategy that relies on multiple layers for detection, delay, denial, and defence. CNSC staff reiterated that OPG's security program meets that requirement in accordance with the NSR.
110.	The Commission enquired why the Retube Waste Storage Building for the storage of low- and intermediate-level radioactive waste from the Darlington Refurbishment Project was located in a non-protected area. An OPG representative clarified that a protected area is within a security-controlled, fenced-in area and that the Retube Waste Storage Building was within the protected area for the Darlington NGS site. CNSC staff confirmed that the NSR do not require the quantities and categories of nuclear materials stored in the Retube Waste Storage Building to be in a protected area.
111.	The Commission concludes that OPG's programs and measures in place to provide for the physical security of the DWMF are adequate. The Commission comes to this conclusion on the following basis: <ul style="list-style-type: none"> • The Commission agrees with CNSC staff's assessment that OPG's security program meets regulatory requirements, including the GNSCR, NSR, and REGDOC-2.12.3 • The Commission is satisfied that OPG has adequately addressed all findings associated with reportable security events to CNSC staff's satisfaction.
	<i>4.2.13 Safeguards and Non-Proliferation</i>
	The CNSC's regulatory mandate includes ensuring conformity with measures required to implement Canada's international obligations under the Treaty on the Non-Proliferation of Nuclear Weapons ⁶⁹ (NPT). Pursuant to the NPT, Canada has entered into a Comprehensive Safeguards Agreement ⁷⁰ and an Additional Protocol ⁷¹ (safeguards agreements) with the IAEA. The objective of these safeguards agreements

⁶⁸ CNSC Staff, CMD 23-H9, *supra* note 43, page 60.

⁶⁹ INFCIRC/140, 22 April 1970 (International Atomic Energy Agency).

⁷⁰ *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, 2 June 1972 (entered into force on 21 February 1972).

⁷¹ *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/Add.1, 11 October 2000.

	is for the IAEA to provide credible assurance on an annual basis to Canada and to the international community that all declared nuclear material is in peaceful, non-explosive uses and that there is no undeclared nuclear material or activity in this country.
112.	In section 3.13 of CMD 23-H9.1, OPG described its Safeguards and Non-Proliferation program, which includes verification such as Physical Inventory Taking and Physical Inventory Verification with the IAEA. OPG reported that it has met all safeguards conditions in its licence, as well as the terms of the agreement between Canada and the IAEA. OPG reported that no compliance issues have been identified by the IAEA or CNSC staff. OPG added that it has implemented a plan for tracking of non-fuel nuclear material and is now fully compliant with REGDOC 2.13.1, <i>Safeguards and Nuclear Material Accountancy</i> . ⁷²
113.	In section 3.13 of CMD 23-H9, CNSC staff reported that its assessment of OPG's documentation under the safeguards and non-proliferation SCA found OPG to be in compliance with regulatory requirements. CNSC staff further noted that the IAEA performed inspections and verifications during the licence period, including 5 Physical Inventory Verifications, 5 Design Information Verifications and 16 Unannounced Inspections. CNSC staff confirmed that, in all cases, OPG provided the IAEA with the necessary access and assistance to perform the activities and complied with all regulatory requirements. CNSC staff added that OPG continues to meet with the IAEA to discuss technical matters.
114.	The Commission concludes that OPG has implemented and maintains a safeguards program that provides for the implementation of measures that are necessary for maintaining national security, and for implementing international agreements to which Canada has agreed. The Commission comes to this conclusion on the following basis: <ul style="list-style-type: none"> • The Commission agrees with CNSC staff's assessment that OPG's Safeguards and Non-Proliferation program meets regulatory requirements, including CNSC REGDOC-2.13.1 • The Commission is satisfied that OPG has provided the IAEA with the necessary access and assistance to perform the activities and complied with all regulatory requirements.
	<i>4.2.14 Packaging and Transport</i>
115.	Packaging and transport covers the safe packaging and transport of nuclear substances and radiation devices to and from a licensed facility. OPG must adhere to the Packaging and Transport of Nuclear Substances Regulations, 2015 ⁷³ (PTNSR, 2015) and Transport Canada's Transportation of Dangerous Goods Regulations ⁷⁴ (TDGR) for all such shipments.

⁷² REGDOC 2.13.1, REGDOC 2.13.1, *Safeguards and Nuclear Material Accountancy*, February 2018

⁷³ SOR/2015-145.

⁷⁴ SOR/2001-286.

116.	In section 3.14 of CMD 23-H9.1, OPG provided information on its packaging and transport program. OPG specified that, as of June 30, 2021, OPG had safely transferred 821 loaded dry storage containers from the Darlington NGS to the DWMF for processing and safe storage, without any events or incidents. OPG added that the on-site transportation was carried on designated transfer routes, in accordance with OPG's procedures.
117.	In section 3.14 of CMD 23-H9, CNSC staff reported that OPG's packaging and transport program complies with the PTNSR, 2015 and the TDGR for all shipments, and covers elements of package design and maintenance, and the registration for use of certified packages. CNSC staff added that it assessed OPG's performance through regular compliance verification activities and found that OPG's packaging and transport program meets regulatory requirements.
118.	<p>The Commission concludes that OPG has adequate programs and measures in place to meet regulatory requirements regarding packaging and transport. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff's assessment that OPG's packaging and transport program meets regulatory requirements, including the PTNSR, 2015 and the TDGR • The Commission is satisfied that OPG has safely transferred its loaded dry storage containers from the Darlington NGS to the DWMF without any events or incidents.
	<i>4.2.15 Conclusion on OPG's Performance for the Darlington Waste Management Facility</i>
119.	Based on the review and the analysis of all of the information provided and discussed above, the Commission is satisfied and concludes that OPG is qualified to carry on the licensed activities under the proposed renewed licence. In addition, the Commission agrees that OPG has adequate programs and measures in place with respect to the 14 SCAs to ensure that the health and safety of workers, the public and the environment will be protected. The Commission further concludes that OPG has measures in place to provide for the maintenance of national security and to implement international obligations to which Canada has agreed.
	4.3 Indigenous Engagement and Consultation
120.	The Commission considered the information provided by CNSC staff and OPG regarding Indigenous consultation and engagement activities in respect of this licence

	renewal application. Indigenous consultation refers to the common law duty to consult with Indigenous Nations and communities pursuant to section 35 of the <u>Constitution Act, 1982</u> . ⁷⁵
121.	The common law duty to consult with Indigenous Nations and communities is engaged when the Crown contemplates action that may adversely affect established or potential Aboriginal and/or treaty rights. The CNSC, as an agent of the Crown and as Canada’s nuclear regulator, recognizes and understands the importance of building relationships and engaging with Canada’s Indigenous Nations and communities. The CNSC ensures that its licensing decisions under the NSCA uphold the honour of the Crown and consider potential impacts to claimed or established Aboriginal and/or treaty rights pursuant to section 35 of the <i>Constitution Act, 1982</i> .
122.	The duty to consult is engaged wherever the Crown has “knowledge, real or constructive, of the potential existence of an Aboriginal right or title and contemplates conduct that might adversely affect it”. ⁷⁶ Licensing decisions of the Commission, where Indigenous interests may be adversely impacted, can engage the duty to consult, and the Commission must be satisfied that it has met the duty prior to making the relevant licensing decision.
	<u>Indigenous Engagement by CNSC Staff</u>
123.	<p>In section 4.1 of CMD 23-H9, CNSC staff provided the Commission with information about its engagement activities with the Indigenous Nations and communities that were identified as having a potential interest in OPG’s DWMF licence renewal application. CNSC staff identified the following Indigenous Nations and communities due to the proximity of their communities, treaty areas, and/or traditional territories and homelands to the OPG facility, or due to previously expressed interest in being kept informed:</p> <ul style="list-style-type: none">● Alderville First Nation● Curve Lake First Nation● Hiawatha First Nation● The Mississaugas of Scugog Island First Nation● The Chippewas of Beausoleil First Nation● The Chippewas of Georgina Island First Nation● Chippewas of Rama First Nation● Mohawks of the Bay of Quinte● The Métis Nation of Ontario● Six Nations of the Grand River

⁷⁵ Schedule B to the Canada Act 1982 (UK), 1982, c 11.

⁷⁶ *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73 at para 35.

	CNSC staff added that it had also notified Anishinabek Nation, which is a political advocate for 39 member First Nations across Ontario, of updates provided to their member Nations, as previously requested.
124.	CNSC staff reported that in March 2022, it sent letters of notification to the Indigenous Nations and communities listed above. The letters provided information regarding the licence renewal application and details on how to participate in the Commission’s public hearing process. CNSC staff added that it made follow-up telephone calls to confirm receipt of the letters and to answer any questions.
125.	CNSC staff noted that it encouraged all of the identified Indigenous Nations and communities to participate in the regulatory review process and in the public hearing to advise the Commission directly of any concerns they may have in relation to this licence renewal application. In June 2022, and again in August 2022, CNSC staff informed the identified Indigenous Nations and communities that participant funding was available to facilitate participation in the licence application review process.
126.	CNSC staff reported that, at the time of filing its CMD, no issues had been raised by the identified Indigenous Nations and communities related to potential impacts on Indigenous and/or treaty rights as a result of the renewal of OPG’s DWMF licence.
127.	During the hearing, the Commission enquired as to how CNSC staff deals with non-responses from identified Indigenous Nations and communities. CNSC staff explained that it does not take a non-response to mean that there are no concerns or issues, and that CNSC staff follows up in different ways, including email, telephone calls and other ways that are meaningful to the communities. CNSC staff added that it also continues to engage with communities following Commission proceedings in order to look for ways to address issues on an ongoing basis.
128.	CNSC staff noted that the requirements and guidance for licensees whose proposed projects may raise the Crown’s duty to consult are set out in REGDOC-3.2.2, <i>Indigenous Engagement</i> . ⁷⁷ CNSC staff submitted that OPG’s licence renewal application is not expected to cause any new adverse impacts to potential or established Indigenous and/or Treaty rights.
	<u>Indigenous Engagement by OPG</u>
129.	In section 4 of CMD 23-H9.1, OPG provided information regarding its ongoing engagement with Indigenous Nations and communities near the DWMF. OPG’s engagement focused on the Williams Treaties First Nations, as the Darlington station is

⁷⁷ REGDOC-3.2.2, *Indigenous Engagement*, August 2019.

	<p>located on their treaty and traditional territory. Furthermore, OPG engaged with the following Nations in order to raise awareness about nuclear subjects, including the license renewal of the DWMF:</p> <ul style="list-style-type: none"> • Mohawks of the Bay of Quinte • Métis Nation of Ontario • Six Nations • Saugeen Ojibway Nation • Historic Saugeen Métis • Curve Lake First Nation • The Mississaugas of Scugog Island First Nation
130.	<p>OPG reported that it holds regular meetings regarding OPG’s nuclear operations – including waste operations and the transportation of low and intermediate-level waste – with the identified Indigenous Nations and communities in order to share information, identify issues and concerns for resolution, and to work collaboratively on areas of common interest. OPG added that, during its engagement with Indigenous Nations and communities to raise awareness about its nuclear operations, the discussed topics included:</p> <ul style="list-style-type: none"> • timing of the DWMF operating licence renewal process, • how to access the CNSC’s Participant Funding Program, and • determination of a community’s level of desired engagement <p>OPG noted that engagement with the identified Indigenous Nations and communities during the re-licensing process included communication by email, telephone, meetings (virtual and/or in-person), community information sessions as requested and presentations. OPG also offered tours of the DWMF.</p>
131.	<p>OPG further submitted that it developed and published its first Reconciliation Action Plan in October 2021. OPG explained that the Reconciliation Action Plan includes clear commitments with identified targets and timelines to advance reconciliation with Indigenous Nations, communities, and peoples across Ontario. OPG added that it would publish annual reports on the completion of these commitments.</p>
	<p><u>Submissions by Indigenous Nations and Communities</u></p>
132.	<p>The Commission received written submissions and oral interventions from two PFP recipients, the Mississaugas of Scugog Island First Nation (MSIFN) (CMD 23-H9.18, 23-H9.18A) and Curve Lake First Nation (CLFN) (CMD 23-H9.19, 23-H9.19A).</p>
133.	<p>In its written submission, MSIFN expressed the view that OPG should obtain its consent for future projects at the DWMF. MSIFN also suggested that OPG should</p>

	<p>proceed with the creation of a collaborative planning process for lands within OPG site control, and the creation of a restoration fund for the landscape around the Darlington site. In its oral intervention, a MSIFN representative also expressed concerns with the ongoing increase of nuclear waste stored within the treaty lands.</p>
134.	<p>The Commission asked MSIFN to comment on its relationship with CNSC staff and OPG. A MSIFN representative responded that CNSC staff had been very communicative and open to receiving questions during engagement activities with MSIFN. The MSIFN representative also reported that MSIFN recently signed an engagement agreement with OPG. The MSIFN representative noted that the agreement was in its infancy, and that the first meeting had not yet taken place.</p>
135.	<p>The Commission asked for CNSC staff's view on MSIFN's request to meet with senior leadership to discuss international best practices and the long-term management of waste and used fuel. CNSC staff welcomed the recommendation and indicated that it would follow up. An OPG representative added that OPG could also provide information on these topics.</p>
136.	<p>In its written submission, the CLFN acknowledged OPG and CNSC staff in their dialogue and work with the CLFN Consultation Department. The CLFN submitted that areas for improvement included:</p> <ul style="list-style-type: none"> • Clarity and recognition of Indigenous Inherent and Treaty Rights • Characterization of adequacy of responses from Indigenous Nations and communities and what might constitute a meaningful response • Continued discussions on Michi Saagiig Cultural Keystone Species • Articulating Michi Saagiig Rights in various programs <p>In its oral intervention, a CLFN representative raised that nuclear waste remains an issue of concern for CLFN. The CLFN representative also advocated for having Commission hearings take place in the CLFN community itself, to bring about direct participation from community members.</p>
137.	<p>The Commission asked the CLFN about a comment in its written submission that aquatic biota assessed during the CNSC's IEMP for the DWMF were not inclusive of everything of importance for the CLFN. A CLFN representative noted that the CLFN had been involved in the IEMP process with a goal of suggesting species that could be incorporated. CNSC staff expressed that it would incorporate the Curve Lake First Nation's recommendations into future IEMP sampling where possible.</p>
138.	<p>Asked about engagement by CNSC staff and OPG, a CLFN representative reported that both had adequately engaged with CLFN through emails, phone calls and monthly meetings. The CLFN representative added that there was always room for improvement.</p>

139.	The Commission asked whether there were any species that could be adversely affected by the construction of the additional 2 buildings. CNSC staff reported that two environmental assessments were conducted for the proposed additional storage buildings, and that in both cases the Commission had concluded that there were no significant adverse effects on the environment, including species, considering mitigation measures. CNSC staff added that the assessments also showed large margins of safety for species with respect to releases from the Darlington site. The future construction of Used Fuel Dry Storage Buildings #3 and #4 is further discussed in section 4.5.4 of this <i>Record of Decision</i> .
	<i>4.3.1 Conclusion on Indigenous Consultation and Engagement</i>
140.	The Commission acknowledges the current efforts and commitments made by OPG in relation to Indigenous engagement and CNSC staff's efforts in this regard on behalf of the Commission with regards to this application. The Commission also acknowledges and appreciates the participation of, and the information and submissions provided by, all of the Indigenous intervenors.
141.	The quasi-judicial decision-making being undertaken by the Commission in the matter – the “Crown conduct” that could trigger a duty to consult – is the licence renewal. The application for licence renewal does not include any new project or undertaking at the Darlington NGS, the construction of the Used Fuel Dry Storage Buildings having been considered as part of the previous licence renewal. The relevant question, therefore, is whether the licence renewal has the potential to affect asserted Indigenous rights in a novel way. ⁷⁸
142.	Based on the information presented on the record for this hearing, and having heard the submissions of all hearing participants, the Commission is satisfied that the renewal of OPG's Class IB licence for OPG's DWMF does not include any new activities that could cause new impacts on the environment or changes in the ongoing licensed activities at the DWMF site, and therefore, will not cause any new adverse impacts to any potential or established Indigenous and/or treaty rights. ⁷⁹ Therefore, the Commission concludes that the duty to consult was not engaged in this matter in a way to demand more than what has been done. It should also be noted that at the time of the previous licence renewal, the Commission had studied the impacts of the construction of 4 Used Fuel Dry Storage Buildings – 2 of which are now included in this licence

⁷⁸ As noted in *Rio Tinto*, the effects that would trigger a duty to consult are not the effects of the historical harm done. Where there are ongoing effects of historical harm, other types of redress are available to an Indigenous nation or community, outside the duty to consult.

⁷⁹ *Rio Tinto Alcan v. Carrier Sekani Tribal Council*, 2010 SCC 43, [2010] 2 S.C.R. 650 at paras 45, 48-49.

	renewal – and had concluded that the proposed license would not cause any adverse impacts to any potential or established Indigenous and/or treaty rights. ⁸⁰
143.	Nonetheless, the Crown’s responsibility to Indigenous peoples and in its dealings with Indigenous peoples also requires upholding the Honour of the Crown and working towards reconciliation, a fundamental purpose of section 35 of the Constitution. In seeking to uphold the honour of the Crown, the Commission considers the concerns raised by Indigenous Nations and communities carefully, keeping an open mind, and seeking to accommodate concerns where possible. A strict legal interpretation of the extent of the duty need not constrain the Commission’s commitment to reconciliation. The Commission is of the view that the Honour of the Crown ⁸¹ has been upheld in this licensing matter, given the extent of the engagement activities and the opportunities provided by the participant funding program and the public hearing.
144.	The Commission is satisfied with CNSC staff’s efforts to engage with Indigenous Nations and communities who may have interest in the DWMF, as described. The efforts made by CNSC staff in this regard are key to the important work of the Commission toward reconciliation and relationship-building with Canada’s Indigenous Nations and communities. The Commission expects CNSC staff to continue to build meaningful long-term relationships with Indigenous Nations and communities as part of the CNSC’s reconciliation efforts.
145.	The Commission also heard OPG’s clear intention regarding ongoing engagement efforts with Indigenous Nations and communities. The Commission notes the recently signed engagement agreement between MSIFN and OPG and expects that OPG will continue to make best efforts to establish relationship agreements with interested Indigenous Nations and communities for the discussion of issues and concerns regarding the DWMF.
	4.4 Other Matters of Regulatory Importance
	<i>4.4.1 Public Engagement</i>
146.	A public information and disclosure program (PIDP) is a regulatory requirement for licence applicants and licensed operators of Class I nuclear facilities. In section 5.5 of CMD 23-H9.1, OPG submitted that it implements and maintains a PIDP which meets the requirements of REGDOC-3.2.1, Public Information and Disclosure . ⁸² OPG explained that its PIDP was designed to inform persons living in the vicinity of the

⁸⁰ CNSC, *Record of Proceedings, Including Reasons for Decision In the Matter of Ontario Power Generation – Application for the Renewal of the Licence for the Darlington Waste Management Facility*, December 3, 4, 5 and 6, 2012.

⁸¹ *Rio Tinto Alcan Inc. v. Carrier Sekani Tribal Council*, *supra* note 78 at paras 45, 49.

⁸² REGDOC-3.2.1, *Public Information and Disclosure*, CNSC, May 2018

	<p>Darlington NGS site of the general nature and characteristics of the anticipated effects of the licensed activity on the environment, as well as any potential effects to their health and safety. OPG added that it maintains an on-call position 24 hours a day, seven days a week to notify key community stakeholders in a timely manner of operational status changes or unscheduled operations that may cause public concern or media interest.</p>
147.	<p>OPG reported the following activities in support of DWMF operations during the current licence period:</p> <ul style="list-style-type: none">• 18 Darlington newsletters distributed to a combined audience of 250,000 households• 69 tours and presentations of the DWMF to interested groups and stakeholders• OPG attended 28 Durham Nuclear Health Committee meetings and 54 Community Advisory Council meetings• 26 public open houses on the Darlington Refurbishment Project <p>OPG noted that it also shares documentation and information on its website and social media.</p>
148.	<p>In section 4.2.3 of CMD 23-H9, CNSC staff confirmed that OPG’s PIDP meets the specifications of REGDOC-3.2.1. CNSC staff reported that through the implementation of its PIDP, OPG has demonstrated communication of appropriate and timely information to the public and community members in proximity to the DWMF using newsletters, emails, social media, website updates, virtual and in-person events, site tours and media engagement.</p>
149.	<p>In its intervention, Northwatch (CMD 23-H9.24) commented on the challenges in navigating the OPG website and accessing information about nuclear waste, particularly with OPG’s recent use of the term “sustainability service” instead of “nuclear waste.” The Commission noted this concern and asked about OPG’s commitment to being open and transparent. An OPG representative acknowledged the concerns raised and the lessons learned from feedback from intervenors on changes in terminology. The OPG representative reported that OPG had begun making changes to its website to provide accessible and searchable information. The Commission expects CNSC staff to confirm that the changes to OPG’s website have been made.</p>
150.	<p>Northwatch also expressed difficulties obtaining information it was seeking from OPG, such as OPG’s detailed safety assessment report. Asked why Northwatch did not receive the full report, an OPG representative stated that OPG had provided a summary report because the full report contains proprietary and prescribed information. The OPG representative added that it was in the process of preparing a redacted report to be provided in response to a request that came through Ontario’s freedom of information process. The Commission notes its preference that intervenors be provided with redacted documents instead of summaries where possible.</p>

151.	On the question of timelines to respond to a request for information, an OPG representative stated that OPG responds as quickly as it is able to. The OPG representative explained that the response time depends on the nature of the information being requested and OPG’s operational obligations.
152.	In reference to a comment raised by the intervenor the Nuclear Transparency Project (CMD 23-H9.25), the Commission asked about OPG’s proactive sharing of machine-readable environmental monitoring data. An OPG representative reported that OPG’s groundwater reports were in a machine-readable format, and noted that it was looking into how to make other reports machine-readable as well.
153.	<p>Overall, the Commission concludes that OPG has adequate measures in place to communicate to the public information about the health, safety and security of persons and the environment and other issues related to its facility. The Commission comes to this conclusion on the following basis:</p> <ul style="list-style-type: none"> • The Commission agrees with CNSC staff’s assessment that OPG’s PIDP meets the requirements of REGDOC-3.2.1 • The Commission is satisfied that OPG met its public disclosure and reporting obligations throughout the current licence term <p>Notwithstanding the above, and in the spirit of continuous improvement, the Commission expects OPG to update its website and pursue how to make its reporting data available and machine readable. The Commission expects CNSC staff to confirm and report to the Commission when the changes to OPG’s website have been made. The Commission strongly encourages OPG – and all licensees – to make information on licensed activities readily available, including redacted versions of documents where possible.</p>
	<i>4.4.2 Decommissioning Plans and Financial Guarantee</i>
154.	The NSCA and associated Regulations require licensees to make adequate provision for the safe decommissioning of their facilities and for the long-term management of waste produced during the lifespan of a facility. In order to ensure that adequate resources are available for the safe and secure future decommissioning of OPG’s DWMF, the Commission requires that an adequate financial guarantee for the realization of planned activities be put in place and maintained in a form acceptable to the Commission throughout the licence period.
155.	In sections 3.11 and 5.3 of CMD 23-H9.1, OPG reported that it continues to manage and maintain an acceptable preliminary decommissioning plan (PDP) that aligns with

	CSA N294-19, <i>Decommissioning of Facilities Containing Nuclear Substances</i> . ⁸³ OPG reported that its PDP is reviewed and revised on a five-year basis.
156.	OPG added that the Commission accepted OPG’s recently revised financial guarantee in 2022. ⁸⁴ In section 5.2 of CMD 23-H9, CNSC staff confirmed that OPG’s financial guarantee meets the requirements in Regulatory Guide G-206, Financial Guarantees for the Decommissioning of Licensed Activities , ⁸⁵ which was in effect when the revised financial guarantee was submitted. CNSC staff noted that for future revisions to the financial guarantee, OPG will be required to implement REGDOC-3.3.1, Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities , ⁸⁶ which came in effect in January 2021 and superseded G-206.
157.	The Commission is satisfied that the preliminary decommissioning plan and related financial guarantee for decommissioning OPG’s facility are in place and are acceptable to the Commission.
	<i>4.4.3 Cost Recovery</i>
158.	The Commission examined OPG’s standing under the Canadian Nuclear Safety Commission Cost Recovery Fees Regulations ⁸⁷ (CRFR). Paragraph 24(2)(c) of the NSCA requires that a licence application be accompanied by the prescribed fee, as set out by the CRFR and based on the activities to be licensed.
159.	In section 5.2 of CMD H23-9.1, OPG submitted that it remained in good standing with respect to the payment of all CNSC cost recovery fees during the licence term. OPG further submitted that it would continue to meet its obligations during the proposed licence term. In section 5.1 of CMD H23-9, CNSC staff confirmed that OPG is in good standing with the CRFR requirements.
160.	Based on the information submitted by OPG and CNSC staff, the Commission is satisfied that OPG complies with the requirements of the CRFR and the NSCA for the purpose of this licence renewal.

⁸³ CSA N294-19, *Decommissioning of Facilities Containing Nuclear Substances*, CSA Group, 2019.

⁸⁴ Record of Decision, [DEC 22-H103](#), Application for Acceptance of the Revised Financial Guarantee Proposed by Ontario Power Generation for its Darlington New Nuclear Project, June 7, 2022.

⁸⁵ Regulatory Guide G-206, *Financial Guarantees for the Decommissioning of Licensed Activities*, June 2000.

⁸⁶ REGDOC 3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*, January 2021.

⁸⁷ SOR/2003-212.

	<i>4.4.4 Nuclear Liability Insurance</i>
161.	The OPG’s DWMF is identified as a nuclear installation in Schedule 2 of the Nuclear Liability Compensation Regulations ⁸⁸ and OPG is required to maintain valid insurance for the liability amount defined in those regulations, in accordance with the Nuclear Liability and Compensation Act ⁸⁹ (NLCA). While this statutory requirement is not administered by the CNSC but by Natural Resources Canada, the nuclear regulator maintains awareness of NLCA compliance, where its licensees are designated nuclear installations. In section of 5.4 of CMD H23-9, CNSC staff confirmed that OPG has nuclear liability insurance in place for the OPG facility.
162.	Based on the information provided on the record for this hearing, the Commission is satisfied that OPG continues to satisfy the requirements for the maintenance of nuclear liability insurance under the NLCA.
	4.5 Licence Length and Conditions
163.	The Commission considered OPG’s application to renew its Waste Facility Operating Licence for DWMF, WFOL-W4- 355.01/2023, for a ten-year term from May 1, 2023 to April 30, 2033. OPG’s current licence, WFOL-W4- 355.01/2023, expires on April 30, 2023.
164.	<p>With this licence renewal application, OPG is requesting:</p> <ul style="list-style-type: none"> • to carry over the existing authorization for the future construction and operation of the two additional buildings – Used Fuel Dry Storage Buildings (UFDSBs) #3 and #4 • an increase in the combined capacity of the two additional used fuel dry storage buildings, to store up to 1,200 dry storage containers • that the terminology in the licence for the additional buildings be changed from “used fuel dry storage buildings” to “used fuel dry storage structures” <p>OPG is also requesting a change in the name of the facility, from the “Darlington Waste Management Facility” to “Nuclear Sustainability Services – Darlington”, to be reflected in the licence.</p>
	<i>4.5.1 Licence Length</i>
165.	OPG applied for the renewal of its licence for a 10-year term. Based on its performance and continuous improvements OPG submitted that it is qualified to carry on the requested licensed activities planned for the proposed 10-year licence term. OPG

⁸⁸ SOR/2016-88

⁸⁹ SC 2015, c 4, s 120.

	<p>further submitted that it would continue to make the necessary provision for protecting the health and safety of workers and the public as well as the environment.</p>
166.	<p>CNSC staff recommended that the Commission renew the licence for a period of 10 years, until April 30, 2033. CNSC staff's assessment was that OPG is qualified to carry on the activities authorized by the licence. CNSC staff noted that OPG's performance was adequate over the current licence period, and that a 10-year licence term would be consistent with the current licence term.</p>
167.	<p>In their interventions, Nuclear Transparency Project (CMD 23-H9.25), and Northwatch (CMD 23-H9.24), raised concerns regarding the requested licence length. Nuclear Transparency Project submitted that, with longer licence terms, civil society organizations would have few supported opportunities to engage with licensees or CNSC staff on matters of regulatory oversight. Nuclear Transparency Project also expressed that Commission meetings regarding Regulatory Oversight Reports cannot compare procedurally with facility-specific licensing or relicensing hearings, noting that civil society organizations have generally not been invited or permitted to make oral submissions before the Commission during such meetings. The Commission acknowledges and appreciates the views shared by intervenors regarding the importance of having opportunities to present their views to the Commission.</p>
168.	<p>Based on the information examined by the Commission, the Commission concludes that a 10-year licence term is appropriate. The Commission's decision is based on the following:</p> <ul style="list-style-type: none">• the Commission agrees with CNSC staff's assessment that OPG is qualified to carry on the licensed activities• a 10-year licence term is consistent with OPG's current licence term• the Commission is satisfied that the evidence demonstrates that OPG has mature programs in place, with adequate performance and oversight• the public will have the opportunity to provide feedback to the Commission on OPG's operations periodically during the renewed 10-year licence period. <p>The Commission is of the view that, based on OPG's performance, as well as the stability of operations and low risk associated with the DWMF, the opportunities for regular engagement afforded by the <i>Regulatory Oversight Report</i> are sufficient. The Commission is of the view that the <i>Regulatory Oversight Report</i>, which allows interventions by members of the public and Indigenous Nations and communities, provides an adequate opportunity for public input in between licensing hearings concerning the DWMF.</p>

<i>4.5.2 Name Change of the Facility</i>	
169.	OPG requested that the facility name “Darlington Waste Management Facility” be changed to “Nuclear Sustainability Services Darlington (NSS-D)” in the title and in paragraph (i) of section IV) of the licence. OPG proposed this change as it had renamed its Nuclear Waste Management Division to Nuclear Sustainability Services. In section 1.1 of CMD 23-H9.1, OPG explained that the name change reflects OPG’s commitment to good stewardship of nuclear by-products, while developing lasting solutions for disposal. OPG expressed that the term “nuclear waste”, which has negative associations for public perception, is inaccurate when describing all the nuclear materials OPG handles.
170.	Although some intervenors supported OPG’s request, many intervenors expressed concerns about the proposed name change. These intervenors were of the view that the name change would remove clarity that the licensed activities occurring at the DWMF were to manage radioactive waste.
171.	In CMD 23-H9.A, CNSC staff revised its recommendation on the proposed name change ⁹⁰ . CNSC staff’s revised recommendation was that the title “Ontario Power Generation Inc. Darlington Waste Management Facility” be used in the licence. CNSC staff noted that although the name would have no impact on the activities authorized in the licence or on the CNSC’s regulatory oversight, the name “Darlington Waste Management Facility” aligns better with the terminology used in the CNSC’s regulatory framework. CNSC staff explained that the DWMF is a Class IB nuclear facility in accordance with the <i>Class I Nuclear Facilities Regulations</i> and the <i>General Nuclear Safety and Control Regulations</i> , which explicitly refer to “a facility for the management, storage or disposal of waste containing radioactive nuclear substances at which the resident inventory of radioactive nuclear substances contained in the waste is 10 ¹⁵ Bq or more.” CNSC staff also acknowledged that the name “Darlington Waste Management Facility” provides greater transparency to the public of the purpose of the facility.
172.	The Commission noted that OPG’s rationale for changing the name of the DWMF was based on the concept of reduction, recycling, reuse and repurposing of waste material. The Commission enquired about the percentage of waste material that could potentially be reduced or recycled. An OPG representative reported that OPG currently employs techniques such as incineration and compaction to reduce the volume of low-level radioactive waste. The OPG representative added that OPG was looking at other techniques like metal processing or other remediation techniques to help further reduce those volumes, with the long-term goal of reducing the volume of low-level radioactive waste at the site by 50 percent.

⁹⁰ As explained in section 5.7 of CMD 23-H9, CNSC staff originally recommended accepting the proposed name change.

173.	The Commission concludes that the name “Darlington Waste Management Facility” shall remain in the title of the licence, and that paragraph (i) of section IV) of the licence shall state “operate a waste management facility”, as proposed by CNSC staff in CMD 23-H9.A. The Commission agrees with the views shared by intervenors and the explanation provided by CNSC staff that the name “Darlington Waste Management Facility” is better aligned with the CNSC’s regulatory framework and the licensed activities carried on at the facility.
	<i>4.5.3 Name Change of Storage Buildings to Storage Structures</i>
174.	OPG’s current licence for the DWMF authorizes OPG to construct and operate 2 additional Used Fuel Dry Storage Buildings (#3 and #4), provided that it also meets specific licence conditions for those activities ⁹¹ . In CMD 23-H9.1, OPG requested that the name of the two future Used Fuel Dry Storage Buildings in the licence be changed to Used Fuel Dry Storage Structures. The proposed change would be reflected in paragraph (iv) of Part IV of the licence, as well as licence condition 12.2.
175.	In section 5.8 of CMD 23-H9, CNSC staff noted that a structure is defined in CSA N292.0-19, <i>General principles for the management of radioactive waste and irradiated fuel</i> ⁹² as “passive elements such as buildings, vessels, and shielding.” CNSC staff reported that that OPG’s name change is consistent with regulatory terminology and has no impact on the activities authorized in the licence or CNSC regulatory oversight of the DWMF.
176.	The Commission concludes that the requested name change, from Used Fuel Dry Storage Buildings to Used Fuel Dry Storage Structures, has no impact on the activities authorized in the licence or CNSC regulatory oversight of the waste management facility. The Commission agrees with CNSC staff’s assessment that the term “structure” is consistent with regulatory terminology. Therefore, the Commission accepts the proposed change, to be reflected in paragraph (iv) of Part IV of the licence, and licence condition 12.2.
	<i>4.5.4 Additional Used Fuel Dry Storage Structures</i>
177.	As noted above, OPG’s current licence for the DWMF authorizes OPG to construct and operate 2 additional Used Fuel Dry Storage Buildings (#3 and #4), provided that it also meets licence conditions 12.2, 15.1 and 15.2. As described in section 1.2.1 of CMD 23-

⁹¹ Licence conditions 12.2 Construction, 15.1 Construction Plans, and 15.2 Commissioning Report

⁹² CSA N292.0-19, *General principles for the management of radioactive waste and irradiated fuel*, CSA Group, 2019.

	<p>H9.1, OPG is requesting that this authorization remain in the renewed licence. OPG is also requesting a change in the total capacity of the currently unbuilt Used Fuel Dry Storage Structures #3 and #4 – from a total of 1,000 dry storage containers (500 each) to a total of 1,200 dry storage containers. OPG submitted that the increased capacity would avoid the need for a fifth storage structure. OPG added that the new structures would require design changes.</p>
178.	<p>CNSC staff’s assessment of OPG’s request pertaining to the additional storage structures is set out in section 5.9 of CMD 23-H9. To address potential design changes, CNSC staff recommended that licence condition 15.1 be modified to include the submission of a preliminary safety analysis prior to the construction of the storage buildings. CNSC staff explained that the preliminary safety analysis must evaluate all design changes to the storage structures and ensure that the design includes effective preventative measures and strategies to address all potential hazards. CNSC staff submitted that licence conditions 12.2, 15.1 and 15.2 would allow CNSC staff to determine whether the design of the storage structures remains within the licensing basis and meets regulatory requirements, including modern codes and standards, prior to OPG being authorized to construct and operate the new storage structures.⁹³ CNSC staff added that, should CNSC staff determine that the proposed design of either of the storage structures is not within the licensing basis, it would be the Commission who would have to consider whether to authorize its construction and operation.</p>
179.	<p>Intervenors J. Fox Lee (CMD 23-H9.16) and Northwatch (CMD 23-H9.24) raised concerns that the timeline for CNSC staff’s assessment of OPG’s proposed designs was not long enough for a complete review, noting that submission of the design and design characteristics of the buildings to the CNSC is required “within 30 days prior to the start of construction.”⁹⁴ The Commission asked CNSC staff to provide more information concerning this timeline. CNSC staff responded that in some cases 30 days may be sufficient to review design information. CNSC staff further stated that, for more complex reviews, CNSC staff can take the time it needs to fully assess a proposal, and that no authorization would be granted until CNSC staff was satisfied with the information provided.</p>
180.	<p>Some intervenors, including J. Fox Lee, expressed the view that it was premature for the Commission to make a decision on buildings that had not yet been built or designed. Asked to comment on this subject, CNSC staff explained that the authorization to construct Used Fuel Dry Storage Buildings #3 and #4, granted by the Commission in 2013, was based on the fact that OPG would use the same design as Used Fuel Dry Storage Building #1, with the same safety analysis outcomes. Under this authorization, CNSC staff would review the design and safety analysis for the proposed new structures to determine whether they are within those previously authorized. CNSC</p>

⁹³ The delegation of authority for the purposes of licence conditions 12.2, 15.1 and 15.2 is discussed in section 4.5.6 of this *Record of Decision*.

⁹⁴ Section 5.9 of CMD 23-H9

	<p>staff added that it included an additional requirement for OPG to submit a preliminary safety analysis report in the proposed licence to allow CNSC staff to confirm that the new design is within the licensing basis. CNSC staff reiterated that if the proposed design is not within the licensing basis, CNSC staff would refer the matter to the Commission for its consideration.</p>
181.	<p>During its presentation, Northwatch (CMD 23-H9.24A) expressed the view that Indigenous peoples and the public should be engaged in the review of the additional dry storage structures. CNSC staff explained that, due to the nature of the information involved (e.g. prescribed information⁹⁵), it would not seek public input on the analysis of any proposed structures. CNSC staff offered that it could provide updates and information that can be made publicly available to the Commission as part of the <i>Regulatory Oversight Report</i>.</p>
182.	<p>Noting concerns from several intervenors concerning the proximity of the DWMF to Lake Ontario, the Commission enquired whether the planned locations of Used Fuel Dry Storage Buildings #3 and #4 had changed from what was presented to the Commission at the time of the previous licence renewal. An OPG representative stated that OPG was finalizing the locations and looking into whether it could move Used Fuel Dry Storage Buildings #3 further away from the shoreline of Lake Ontario. The OPG representative acknowledged the concerns from intervenors about the proposed buildings' proximity to Lake Ontario, regarding the security of the Used Fuel Dry Storage Buildings and the Storage Buildings from becoming compromised by flooding and erosion.</p>
183.	<p>Asked about the timeframe for reaching the current storage buildings' full capacity, an OPG representative reported that OPG has approximately 3 years of capacity remaining. The OPG representative explained that OPG currently has 854 Dry Storage Containers safely stored in Storage Buildings #1 and #2, which have a combined storage capacity of 1,000 dry storage containers, and that OPG typically adds 60 dry storage containers per year.</p>
184.	<p>Based on the information provided, the Commission agrees to renew the authorization for the construction and operation of the additional Used Fuel Dry Storage Structures #3 and #4, subject to licence conditions 12.2, 15.1 and 15.2. The Commission also authorizes the change in the total capacity of Used Fuel Dry Storage Buildings #3 and #4 from 1,000 to 1,200 dry storage containers. The Commission accepts OPG's rationale that the increased storage capacity would avoid the need to construct further additional buildings. The Commission notes that, should CNSC staff determine that the proposed design of either of the storage buildings is not within the licensing basis, it would be the Commission who would have to consider whether to authorize its construction and operation.</p>

⁹⁵ Prescribed information is defined under section 21 of the [General Nuclear Safety and Control Regulations](#).

	<i>4.5.5 Licence Conditions</i>
185.	Part Two of CNSC staff’s CMD 23-H9 includes a proposed draft licence with a format that incorporates the CNSC’s standardized licence conditions applicable to the DWMF. CNSC staff specified that OPG did not request any changes to the licensed activities, and that the proposed licence captures all of the needed and applicable licence conditions for the facility and does not contain any new licence conditions.
186.	<p>As explained in Part Two of CMD 23-H9⁹⁶, and as discussed above, CNSC staff proposed changes to licence conditions 12.2 and 15.1. For licence condition 12.2 Construction, CNSC staff proposed changing the word “building” to “structure”, as follows:</p> <p style="padding-left: 40px;">“The licensee shall not carry out the activities referred to in paragraph (ii) of Part IV of this licence that relates to completed construction activities in paragraph (iv) of Part IV of this licence until the submission of the proposed security arrangements and measures for the new <u>structure</u>, or any potential modifications to the protected area that may be associated with this new <u>structure</u>, that is acceptable to the Commission or a person authorized by the Commission.”</p> <p>For licence condition 15.1 Construction Plans, CNSC staff proposed the inclusion of a requirement that a preliminary safety analysis report be submitted, and that the Commission or a person authorized by the Commission must accept the submissions outlined in the condition prior to the construction of the storage structures, as follows:</p> <p style="padding-left: 40px;">“The licensee shall not carry out the activities referred to in paragraph (iv) of Part IV of this licence until the submission of an environmental management plan, a construction verification plan, the project design requirements and a preliminary safety analysis report without prior written approval of the Commission or a person authorized by the Commission.”</p>
187.	CNSC staff submitted an Amendment to a Recommendation as CMD 23-H9.A . The proposed licence in CMD 23-H9.A includes the aforementioned proposed changes to licence conditions 12.2 and 15.1, and also reflects CNSC staff’s amended recommendations concerning the name of the facility for the title, as well as updates to paragraphs (i) and (iv) in Part IV of the licence.
188.	The Commission accepts the intent of the proposed licence condition 15.1, to require that OPG submit additional analysis and have written CNSC approval before constructing additional storage structures. To clarify these requirements, the Commission imposes the following wording for licence condition 15.1:

⁹⁶ Page 115 of CMD 23-H9.

	<p>The licensee shall not carry out the activities referred to in paragraph (iv) of Part IV of this licence without the submission of an environmental management plan, a construction verification plan, the project design requirements and a preliminary safety analysis report and without prior written approval of the Commission or a person authorized by the Commission.</p>
189.	<p>The Commission accepts the proposed licence conditions, as submitted by CNSC staff in CMD 23-H9.A, with the above noted change to proposed licence condition 15.1. The Commission is satisfied that the proposed changes are consistent with the activities to be licensed as well as the current licence. The Commission notes that the licence does not contain any new licence conditions, and is satisfied that the changes to the current licence conditions clarify and strengthen regulatory requirements.</p>
	<p><i>4.5.6 Delegation of Authority</i></p>
190.	<p>In order to provide adequate regulatory oversight of changes that are administrative in nature, and do not require a licence amendment nor Commission approval, CNSC staff recommended that the Commission delegate authority for certain approval or consent, as contemplated in licence conditions that contain the phrase “a person authorized by the Commission.”</p> <p>As set out in section 5.6 of CMD 23-H9, CNSC staff recommended that the Commission delegate authority for the following licence conditions (LC):</p> <ul style="list-style-type: none"> • LC 12.2 Construction • LC 13.1 Safeguards Program • LC 15.1 Construction Plans, and • LC 15.2 Commissioning Report <p>For LC 12.2, LC 15.1 and LC 15.2, CNSC staff recommended that the Commission delegate authority for certain approval or consent to the following CNSC staff:</p> <ul style="list-style-type: none"> • Director, Wastes and Decommissioning Division • Director General, Directorate of Nuclear Cycle and Facilities Regulations, and • Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch. <p>For LC 13.1, CNSC staff recommended that the Commission delegate authority for certain approval or consent to the following CNSC staff:</p> <ul style="list-style-type: none"> • Director, International Safeguards Division • Director General, Directorate of Security and Safeguards, and • Vice-President, Technical Support Branch

191.	<p>The Commission delegates its authority for the purposes of licence conditions 12.2 Construction, 13.1 Safeguards Program, 15.1 Construction Plans, and 15.2 Commissioning Report, to the above CNSC staff as recommended. The Commission notes that the delegation of authority of the identified licence conditions is for the purpose of the administration of those licence conditions. In delegating authority for these licence conditions, the Commission is authorizing CNSC staff to provide adequate regulatory oversight on its behalf. The delegation of authority does not extend to authorizations beyond the established licensing basis; such decisions remain solely within the purview of the Commission. The Commission is satisfied that this approach is reasonable.</p>
	<p><i>4.5.7 Conclusion on Licence Length and Conditions</i></p>
192.	<p>Based on the information examined by the Commission, the Commission is satisfied that a 10-year licence is appropriate. The Commission accepts the proposed standardized licence with licence conditions handbook, and the licence conditions as recommended by CNSC staff in CMD 23-H9.A, with slight wording change to licence condition 15.1 to read as follows:</p> <p style="padding-left: 40px;">The licensee shall not carry out the activities referred to in paragraph (iv) of Part IV of this licence without the submission of an environmental management plan, a construction verification plan, the project design requirements and a preliminary safety analysis report and without prior written approval of the Commission or a person authorized by the Commission.</p> <p>The Commission also accepts CNSC staff's recommendation regarding the delegation of authority for the purpose of licence conditions 12.2, 13.1, 15.1 and 15.2. The Commission notes that CNSC staff can bring any matter to the Commission as required.</p>
	<p>5.0 CONCLUSION</p>
193.	<p>The Commission has considered OPG's application for the renewal of its licence for the DWMF for a 10-year period. OPG's application included a proposed name change, and a request to carry over the authorization to construct and operate Used Fuel Dry Storage Structures #3 and #4, and to increase their total capacity from 1,000 dry storage containers to 1,200 dry storage containers. The Commission has considered the information and submissions of OPG, CNSC staff, and all participants, as set out in the material available for reference on the record, as well as the oral submissions made by the participants at the hearing.</p>

194.	Based on its consideration of the evidence on the record of this hearing, the Commission, pursuant to section 24 of the <i>Nuclear Safety and Control Act</i> , renews the Class IB Waste Facility Operating licence issued to Ontario Power Generation Inc. for its DWMF located in the Municipality of Clarington, Ontario. The renewed licence, WFOL-W4-355.00/2033, is valid from May 1, 2023 to April 30, 2033, unless suspended, amended, revoked or replaced.
195.	The renewed licence reflects that the Commission does not accept the requested change to the name of the Darlington Waste Management Facility to Nuclear Sustainability Services-Darlington.

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April 19, 2023

Rumina Velshi
President
Canadian Nuclear Safety Commission

Date

Appendix A – Intervenors

Intervenors – Oral Presentations	Document Number
Mississaugas of Scugog Island First Nation, represented by Chief K. LaRocca	CMD 23-H9.18 CMD 23-H9.18A
Judith Fox Lee	CMD 23-H9.16
North American Young Generation in Nuclear (NAYGN) Durham, represented by A. Bhardwaj and V. Sunassy	CMD 23-H9.3
Curve Lake First Nation, represented by F. Chua and S. Toms	CMD 23-H9.19 CMD 23-H9.19A
Northwatch, represented by B. Lloyd	CMD 23-H9.24 CMD 23-H9.24A
Canadian Nuclear Association, represented by J. Baker and S. Coupland	CMD 23-H9.17
Ontario Clean Air Alliance, represented by J. Gibbons	CMD 23-H9.2
Nuclear Transparency Project, represented by P. Feinstein	CMD 23-H9.25 CMD 23-H9.25A CMD 23-H9.25B
Intervenors – Written Submissions	
Kinectrics Inc.	CMD 23-H9.4
Dave Taylor	CMD 23-H9.5
George Bartlett	CMD 23-H9.6
Jo Hayward-Haines	CMD 23-H9.7
Sarah Gabrielle Baron	CMD 23-H9.8
Kate Chung	CMD 23-H9.9
Douglas Buck	CMD 23-H9.10
Concerned Citizens of Renfrew County and Area	CMD 23-H9.11
Denise Giroux	CMD 23-H9.12
Phillip Penna	CMD 23-H9.13
Georgina Bartos	CMD 23-H9.14
Rural Action and Voices for the ENvironment (RAVEN)	CMD 23-H9.15
Ruth MacLean	CMD 23-H9.20
Regional Municipality of Durham	CMD 23-H9.21
Ingrid Barron	CMD 23-H9.22
Canadian Nuclear Workers’ Council	CMD 23-H9.23
Kelly Clune	CMD 23-H9.26
We the Nuclear Free North	CMD 23-H9.27
Christine Drimmie	CMD 23-H9.28
Brad Blaney	CMD 23-H9.29
Evelyn Gigantes	CMD 23-H9.30
Greater Oshawa Chamber of Commerce	CMD 23-H9.31