Record of Decision

DEC 24-H3

In the Matter of

Applicant	Ontario Power Generation Inc.
Subject	Application for a Licence to Construct one BWRX-300 Reactor at the Darlington New Nuclear Project Site
Date of Decision	April 4, 2025

Document ID (Word): DAMZHJW66V33-166150894-411
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RECORD OF DECISION – DEC 24-H3

Applicant:	Ontario Power Generation Inc.
Address/Location:	700 University Avenue 19th Floor, Toronto, Ontario M5G 1X6
Purpose:	Application for a Licence to Construct one BWRX-300 Reactor at the Darlington New Nuclear Project Site
Application received:	October 31, 2022
Dates of public hearing:	October 2, 2024 January 8-10, 13-14, 2025
Location:	Ajax Convention Centre, 550 Beck Crescent, Ajax, ON, L1Z 1C9 and virtually via Zoom
Date of decision:	April 4, 2025
Members present:	P. Tremblay, President T. Berube A. Hardie J. Hopwood M. Lacroix V. Remenda
Registrar:	C. Salmon
Recording Secretary:	M. McMillan
Senior General Counsel:	L. Thiele

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Intervenors		
See Appendix A		
Other Government Representatives		
Emergency Management Ontario: R. Reid		
Natural Resources Canada: M. Kolaj		
Ontario Ministry of the Environment, Conservation and Parks: J. Butchart		

Licence to Construct: Issued

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1 INTRODUCTION

1. Ontario Power Generation Inc. (OPG) has applied to the Canadian Nuclear Safety Commission[1] (CNSC), under subsection 24(2) of the *Nuclear Safety and Control Act*[2] (NSCA), for a licence to construct (LTC) one General Electric Hitachi (GEH) Boiling Water Reactor X-300 (BWRX-300) for its Darlington New Nuclear Project (DNNP or Project)[3] on the site of the Darlington Nuclear Generating Station (Darlington Nuclear site). The Darlington Nuclear site is located in the Municipality of Clarington, Ontario, within the traditional lands and waters of the Michi Saagiig Anishinaabeg, the Gunshot Treaty (1877–88), the Williams Treaties (1923), and the Williams Treaties First Nations Settlement Agreement (2018).

2. The DNNP is a proposal by OPG for the site preparation, construction, operation, decommissioning and abandonment of up to four new nuclear reactors at its existing Darlington Nuclear site. OPG currently holds a power reactor site preparation licence for the DNNP, which the Commission renewed in 2021.[4]

3. The DNNP was subject to an Environmental Assessment[5] (EA) conducted by a Joint Review Panel (JRP) under the *Canadian Environmental Assessment Act*[6] (CEAA 1992). In April 2024,[7] the Commission determined that the BWRX-300 reactor technology was not fundamentally different from the technologies considered in the EA, and that a new EA was not required. With this determination, the Commission could proceed with the consideration of OPG's application for a licence to construct one BWRX-300 reactor unit at the DNNP site.

Issues

4. Pursuant to paragraphs 24(4)(a) and (b) of the NSCA, in considering whether to issue the licence to construct, the Commission must be satisfied that:

   a) OPG is qualified to carry on the activities that the licence would authorize; and

   b) in carrying on those activities, 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.

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[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.
[2] S.C. 1997, c. 9.
[3] The DNNP is a proposal by OPG for the site preparation, construction, operation, decommissioning and abandonment of up to four new nuclear reactors on the existing Darlington Nuclear site.
[4] *Record of Decision in the matter of Ontario Power Generation Inc.'s Application to Renew the Power Reactor Site Preparation Licence for the Darlington New Nuclear Project*, DEC 21-H4, CNSC, October 12, 2021.
[5] Joint Review Panel, *Environmental Assessment Report – Darlington New Nuclear Power Plant Project*, August 2011.
[6] Statutes of Canada (S.C.) 1992, c. 37.
[7] *Record of Decision in the matter of the Determination of Applicability of Darlington New Nuclear Project Environmental Assessment to OPG's Chosen Reactor Technology*, CNSC, April 19, 2024.

5. As an agent of the Crown, the Commission recognizes its role in fulfilling the Crown's constitutional obligations, along with advancing reconciliation with Indigenous Peoples of Canada. The Commission's responsibilities include the duty to consult and, where appropriate, accommodate where the Crown contemplates conduct which may adversely impact potential or established Aboriginal[8] or treaty rights.[9] As such, the Commission must determine what engagement and consultation steps and accommodation measures are called for respecting Indigenous interests and whether what has been done satisfies the obligation of consultation and, where appropriate, accommodation of implicated Aboriginal or treaty rights. That determination, of what the duty to consult and accommodate requires, is informed by the principles and the provisions of the *United Nations Declaration on the Rights of Indigenous Peoples*[10] (UNDRIP), as a result of its adoption into Canadian law via the *United Nations Declaration on the Rights of Indigenous Peoples Act*[11] (UNDA).[12] The Commission must be satisfied that the duty to consult has been met prior to making its licensing decision.

Public Hearing

6. On June 27, 2024, the Commission published a *Notice of Public Hearing*[13] for this matter, which invited applications to intervene by November 4, 2024. The Commission subsequently published a *Revised Notice of Public Hearing*[14] on December 2, 2024, confirming the dates for Part 2 of the hearing.

7. The Commission considered information presented for a two-part public hearing. Part 1 of the hearing was held virtually on October 2, 2024, and Part 2 was held in Ajax, Ontario on January 8-10 and 13-14, 2025. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*[15] (the Rules). During the public hearing, the Commission considered written submissions and heard oral presentations from OPG (CMD 24-H3.1, CMD 24-H3.1A, CMD 24-H3.1B, CMD 24-H3.1C, CMD 24-H3.1D, CMD 24-H3.1E, CMD 24-H3.1F, CMD 24-H3.1G) and CNSC staff (CMD 24-H3, CMD 24-H3.A, CMD 24-H3.B, CMD 24-H3.C and CMD 24-H3.D,[16] CMD 24-H3.E, CMD 24-H3.F, CMD 24-H3.G, CMD 24-H3.H). The Commission also considered oral and written submissions from 85 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 website.

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[8] "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.
[9] *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.
[10] *United Nations Declaration on the Rights of Indigenous Peoples*, United Nations, September 2007.
[11] S.C. 2021, c. 14.
[12] *Kebaowek First Nation v. Canadian Nuclear Laboratories*, 2025 FC 319.
[13] *Notice of Public Hearing 2024-H-03*, CNSC, June 27, 2024.
[14] *Revised Notice of Public Hearing 2024-H-03*, CNSC, December 2, 2024.
[15] Statutory Orders and Regulations (SOR)/2000-211.
[16] CMD 24-H3.C and CMD 24-H3.D contain prescribed information and are not available to the public.

8. The follow-up issues the Commission requested be addressed by CNSC staff and OPG during Part 1 of the hearing were captured in CMD 24-H3-Q. The Commission was satisfied with the answers to these questions provided by CNSC staff (CMD 24-H3.F) and OPG (CMD 24-H3.1C).

Confidentiality Requests

9. Alongside its application and supporting submissions, OPG submitted 5 requests for confidentiality[17,18,19,20,21] in accordance with rule 12 of the Rules. The Commission considered OPG's requests and issued three separate decisions setting out the measures it would and would not take to protect information, pursuant to subrule 12(3):

- a *Partial Record of Decision*[22] on October 29, 2024
- a *Record of Decision*[23] on November 28, 2024
- a *Record of Decision*[24] on December 3, 2024

Participant Funding Program

10. 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 October 2023, up to $150,000 in funding was made available through the PFP to review the application and associated documentation, and to provide the Commission with value-added information through topic-specific interventions. A Funding Review Committee, independent of the CNSC, reviewed the funding applications received and made recommendations on the allocation of funds. Based on the recommendations from the Committee, the CNSC awarded up to $191,863.98 to the following 11 applicants:

- Canadian Coalition for Nuclear Responsibility
- Canadian Environmental Law Association
- Chippewas of Georgina Island First Nation[25]
- Curve Lake First Nation
- Hiawatha First Nation
- Métis Nation of Ontario

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[17] *Request for Confidentiality of Material Submitted in Relation to NK054-CORR-00531-10740*, OPG, July 26, 2024.
[18] *Request for Confidentiality of Material Submitted in Relation to CMD #24-H3.1*, OPG, July 26, 2024.
[19] *Request to Protect Confidential Information in the Matter of OPG Confidential DNNP Submission Package #6(b) Construction and Commissioning Program Confidential Deliverables in Support of the Licence to Construct Application for the CNSC Review*, OPG, March 28, 2023.
[20] *Request for Confidentiality of Material Submitted in Relation to CMD #24-H3*, OPG, July 26, 2024.
[21] *Request for Confidentiality of Material Submitted in Relation to CNSC Staff CMD 24-H3*, OPG, November 28, 2024.
[22] *Partial Record of Decision on OPG's Request to Protect Confidential Information*, CNSC, October 29, 2024.
[23] *Record of Decision on OPG's Request to Protect Confidential Information*, CNSC, November 28, 2024.
[24] *Record of Decision on OPG's Request to Protect Confidential Information*, CNSC, December 3, 2024.
[25] The Chippewas of Georgina Island First Nation did not submit an intervention for this matter.

- Mississaugas of Scugog Island First Nation
- Northwatch
- Nuclear Transparency Project
- Paul Sedran (RESD Inc.)
- Saugeen Ojibway Nation

11. The CNSC also awarded up to a total of $106,490.25 of additional participant funding to Alderville First Nation, Curve Lake First Nation, and Mississaugas of Scugog Island First Nation to facilitate additional meetings with CNSC staff to discuss the licence application and to assess the Project's potential impacts to rights. The CNSC awarded this additional funding based on the Funding Review Committee's recommendations on the allocation of funds.

Mandate of the Commission

12. Several interventions addressed the economic impact of the DNNP. The Commission notes that, as the regulatory authority over nuclear matters in Canada, it has no economic mandate and does not base its decisions on the economic impact of a facility. The Commission's mandate is found in section 9 of the NSCA and includes the Commission's object to regulate the production and use of nuclear energy to prevent unreasonable risk to national security, the environment, and the health and safety of people, and to implement the international obligations to which Canada has agreed.

13. Several intervenors expressed their views about the DNNP in relation to energy policy. The Commission notes that it is the Ontario government that determines Ontario's energy policy. Determination of energy policy is not a part of the mandate of the CNSC.

Scope of OPG's Licence to Construct Application and the Public Hearing

14. OPG has applied for a licence to construct one BWRX-300 reactor for the DNNP at its Darlington Nuclear site. The proposed LTC would authorize OPG to complete site preparation activities, to construct a single BWRX-300 powerblock,[26] to construct supporting infrastructure for up to four BWRX-300 units, and to complete commissioning activities with no fuel in the reactor core (fuel-out commissioning) for the single constructed BWRX-300 unit. The proposed licence would not authorize fuel loading, fuel-in commissioning, or operation of the BWRX-300 reactor. No nuclear fuel would be onsite during the LTC licence period and no radioactive wastes would be generated. Authorization to operate the DNNP facility would be considered by the Commission under a future hearing process, should OPG submit an application for a licence to operate.

[26] The BWRX-300 powerblock would include the structures, systems, and components associated with the reactor building, the control building, the turbine building, the radioactive waste building, and their associated auxiliary structures.

2 DECISION

15. Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Decision*, the Commission concludes the following:

- the *Impact Assessment Act*[27] (IAA) does not impose any obligation upon the Commission in respect of this matter
- the Commission's responsibility to uphold the honour of the Crown and its legal obligation to consult and, where appropriate, accommodate Indigenous interests, pursuant to section 35 of the *Constitution Act, 1982*,[28] has been satisfied
- OPG is qualified to carry on the activities 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

Therefore,

> the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, issues Nuclear Power Reactor Construction Licence PRCL 32.00/2035 to Ontario Power Generation Inc. for its Darlington New Nuclear Project located in the Municipality of Clarington, Ontario. The licence is valid from April 4, 2025, to March 31, 2035, unless suspended, amended, revoked, or replaced.

16. The Commission includes in the licence the conditions as recommended by CNSC staff in CMD 24-H3.B, including the following four site-specific licence conditions:

> 15.1. The licensee shall implement the mitigation measures proposed and commitments made during the Darlington Joint Review Panel process, including the applicable recommendations of the Darlington Joint Review Panel Report, in accordance with the Government of Canada response.
>
> 15.2. The licensee shall implement and maintain an environmental assessment follow-up program.
>
> 15.3. The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.
>
> 15.4. The licensee shall conduct Indigenous engagement activities, specific to the DNNP, throughout the period of this licence.

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[27] S.C. 2019, c. 28, s. 1.
[28] *Constitution Act, 1982, Schedule B to the Canada Act 1982 (UK), 1982, c 11*.

Licence condition 15.4 is included in response to a request from the Michi Saagiig Nations to have a regulatory mechanism that would require OPG to fulfill its engagement commitments. The Commission is of the view that licence condition 15.4 provides such a regulatory mechanism.

17. The Commission is satisfied with the following three regulatory hold points (RHP) proposed by CNSC staff in section 1.6 of CMD 24-H3 and in the proposed LCH:

- RHP-1: Installation of the Reactor Building Foundation
  - The removal of this RHP would authorize OPG to place the foundation for the reactor building and commence civil construction of the reactor building structure, internal civil structures, and internal reactor building systems and components.
- RHP-2: Installation of the Reactor Pressure Vessel
  - The removal of this RHP would authorize OPG to install the reactor pressure vessel and associated structures and components, as well as complete the appropriate installations of critical components, and conduct limited component testing.
- RHP-3: Fuel-Out Commissioning
  - The removal of this RHP would authorize OPG to conduct full-scale testing and commissioning of installed structures, systems, and components.

18. The Commission delegates its authority for the purposes of licence condition 15.3 to the following CNSC staff:

- Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch

Licence conditions and the delegation of authority are further discussed in section 3.8 of this *Record of Decision*.

19. The Commission expects CNSC staff to continue engagement with the Michi Saagiig Nations and Saugeen Ojibway Nation regarding the compliance verification criteria under licence conditions 11.1 and 15.4 in the Licence Conditions Handbook (LCH), as appropriate. The Commission directs CNSC staff to provide the updated LCH to the Commission for its information once the compliance verification criteria for these two conditions are finalized. The Commission directs CNSC staff to notify it of any future changes made to the LCH annually, either through the regulatory oversight report addressing nuclear power reactors or by other reporting means.

20. The Commission accepts OPG's financial guarantee in the amount of $167,180,000[29] in the form of a Letter of Credit. OPG's financial guarantee is discussed in section 3.7.2 of this *Record of Decision*.

21. As detailed in section 3.6.5 of this *Record of Decision*, the Commission directs CNSC staff to implement the following commitments and accommodations specified in

[29] In 2022 Canadian dollars.

sections 4.1.1 and 4.3.6 of CMD 24-H3.F, and section 1.2 of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application*, as follows:

- "CNSC staff are committed to continuing long-term engagement and collaboration with the Michi Saagiig Nations, through the existing terms of reference for long-term engagement, which could include creating a plan with the Michi Saagiig Nations to outline how they want to engage, collaborate and consult with the CNSC on future projects, policy discussions and work plans."
- "CNSC staff are committed to having policy discussions with the Michi Saagiig Nations to solicit their feedback regarding the CNSC's approach to Consultation, engagement, regulatory framework, UNDA/UNDRIP implementation and phased licensing approach."
- "The CNSC is committed to continuing to evolve [its] approaches to align with best practices and guidance that emerge through whole-of-government implementation of UNDA, and the *UNDA Action Plan*, including those that relate to FPIC. This includes initiating formal consultation on proposed updates and amendments in 2024-2025 to the CNSC's REGDOC-3.2.2: *Indigenous Engagement* to provide nuclear proponents and licensees with further guidance and clarity with regards to how their approach to engagement and partnership with Indigenous Nations can align with UNDA"
- "CNSC staff are committed to supporting Indigenous Nations and communities by either providing information about the appropriate contacts and channels for addressing broader concerns or coordinating meetings between the CNSC, the First Nations with other federal departments, as appropriate. For example, this could include discussions with Natural Resources Canada on UNDA policy and approach to addressing legacy issues."
- "CNSC staff are committed to supporting interested Michi Saagiig Nations in conducting a longer-term broader RIA covering all CNSC-regulated facilities in their territory, driven by the Nations and based on, but not limited to the Indigenous Knowledge study and cumulative effects assessment. CNSC staff view is that this would not be a project specific RIA and would take the form of a study and assessment of cumulative effects on the rights and interests of the Michi Saagiig Nations as it relates to the nuclear sector. The results of this study could inform future regulatory processes for nuclear projects and activities in their territory, should the First Nations wish to share and incorporate the information into project specific assessments in the future."
- "CNSC staff are committed to the ongoing collaboration with the Michi Saagiig Nations and OPG on supporting an Indigenous Knowledge study to gather more information and data regarding the Michi Saagiig Nations rights and interests as it relates to the DNNP and surrounding territory. This includes providing funding, informational, and other support to complete these studies as appropriate. CNSC staff have been informed that the Michi Saagiig Nations are working on a governance framework for the studies and that the work on the studies will not begin until after a framework is in place. CNSC staff are able to provide funding and support for the study when requested by the Michi Saagiig Nations."

- "CNSC staff commit to supporting and ongoing collaboration with the Michi Saagiig Nations on completing a cumulative effects study, which could include a cumulative effect on rights analysis as it relates to the nuclear sector in their traditional and treaty territories."
- "CNSC staff are committed to continuing to work with the Michi Saagiig Nations to determine how they want the results of these studies, when provided to CNSC and OPG, to be incorporated, considered and reflected in the CNSC's regulatory processes and ongoing oversight of the DNNP, should the project proceed. CNSC staff commit to adjusting the approach to oversight of the DNNP as new information is shared with regards to the Michi Saagiig Nations knowledge, land use, rights and interests. As outlined in the draft LCH this could include but is not limited to OPG incorporating the outcomes of these studies into its Environmental Monitoring and Environmental Assessment Follow-Up Plan. The knowledge and information could also help inform the CNSC's Independent Environmental Monitoring Program (IEMP) as well as help inform CNSC compliance and oversight activities for the DNNP. However, CNSC staff have not specified the exact timing, mechanisms or approach as this process needs to be driven by the Michi Saagiig Nations and in collaboration with OPG."
- "CNSC staff are committed to collaborating with the Michi Saagiig Nations to update RIAs [rights impact assessments] as new information is gathered and provided by both the Michi Saagiig Nations and OPG and to providing updates to the Commission at future phases of the regulatory review and licensing process for the DNNP, such as a potential Licence to Operate, should the project proceed."
- "CNSC staff are committed to collaboratively monitoring OPG's implementation of its proposed mitigation measures and commitments with the Michi Saagiig Nations. CNSC staff are committed to working with the Michi Saagiig Nations to verify the commitments and measures specific to them and report the results and relevant updates to the Commission as appropriate. CNSC staff propose that this is done through a formal working group between OPG, CNSC staff and the 4 Michi Saagiig Nations. CNSC staff propose having quarterly meetings to discuss progress being made on the commitments, any issues or concerns and whether the mitigation measures are working as expected or if adjustments need to be made to ensure that the Nations' rights and interests continue to be protected, and the commitments are upheld. The details of the working group and its implementation and structure will be collaboratively developed with the Nations and OPG should the project proceed."
- "CNSC staff commit to providing information to the Michi Saagiig Nations regarding the status of regulatory hold points. CNSC staff will also provide notification to all the Indigenous Nations and communities identified in the Consultation Report when a decision has been made on whether to release a hold point."
- "CNSC staff commit to collaborating with the Michi Saagiig Nations on the CNSC's Independent Environmental Monitoring Program in relation to the Darlington site, which would include the DNNP, should it proceed. This includes providing opportunities for the Michi Saagiig Nations to review and provide input into the sampling plans, participate in sampling and conduct

ceremony and walk the land prior to conducting sampling. CNSC staff will work with the Michi Saagiig Nations to ensure that their land use, values and knowledge systems are reflected and considered in the CNSC's environmental sampling, as appropriate and where possible."

- "CNSC staff commit to providing the most current information available related to the progress being made on CNSC staff's commitments and accommodation measures to the Michi Saagiig Nations for the DNNP in the annual update report to the Commission."

22. As detailed in section 3.6.5 of this *Record of Decision*, the Commission directs OPG to implement the commitments specified in section 2.0 of OPG's *DNNP Indigenous Engagement Report November 2023 to September 2024* (CMD 24-H1A), including, without limiting the scope of OPG's engagement, the following:

- funding an Indigenous Knowledge study
- developing an environmental monitoring augmentation plan to apply an Indigenous lens to existing monitoring activities
- planning and conducting aquatic offsetting and terrestrial restoration in collaboration with the Michi Saagiig Nations, including quarterly meetings to undertake offsetting and restoration planning, and the establishment of beneficial action areas on the DNNP site
- engaging with the Michi Saagiig Nations regarding permits and approvals tied to activities potentially impacting Aboriginal and/or treaty rights, including monthly meetings to discuss permitting requirements
- including Indigenous ceremony in the Project
- establishing an environment table and a waste table to share knowledge between OPG and the Michi Saagiig Nations on these topics of specific interest
- requiring Indigenous training for all DNNP staff with an emphasis on the Williams Treaties First Nations (WTFN) and the 2018 Settlement Agreement

23. With this decision, the Commission directs CNSC staff to report on the status of the DNNP and OPG's progress toward each regulatory hold point as part of the regular *Status Report on Power Reactors* at each public meeting of the Commission and annually, either through the regulatory oversight report addressing nuclear power reactors or by other reporting means. The Commission also directs CNSC staff to report on the status of CNSC staff's commitments, ongoing engagement, consultation and accommodation measures annually, either through an existing regulatory oversight report or through another reporting mechanism. The Commission expects CNSC staff to provide the most current information available in its annual update. CNSC staff may bring any matter to the Commission's attention, as required.

3 ISSUES AND COMMISSION FINDINGS

24. The Commission's analyses for its decision in this matter are set out within the following sections of this *Record of Decision*:

- Section 3.1 Overview of the Darlington New Nuclear Project

- Section 3.2 Applicability of the *Impact Assessment Act*
- Section 3.3 Views of Hearing Participants
- Section 3.4 Assessment of the Application for a Licence to Construct
- Section 3.5 OPG's Safety and Control Measures with Respect to the Safety and Control Areas
- Section 3.6 Indigenous Engagement and Consultation
- Section 3.7 Other Matters of Regulatory Importance
- Section 3.8 Licence Length and Conditions

3.1 Overview of the Darlington New Nuclear Project

3.1.1 Project Description and History

25. The DNNP is a proposed new nuclear build located on the existing Darlington Nuclear site, on the north shore of Lake Ontario, approximately 10 km east of Oshawa. The Darlington Nuclear site consists of the existing Darlington Nuclear Generating Station (NGS), which has 4 Canada Deuterium Uranium (CANDU) reactors, a tritium removal facility and a waste management facility. OPG designated the eastern third of the overall Darlington Nuclear site for the DNNP (the DNNP site).

26. The NSCA and the *Class I Nuclear Facilities Regulations*[30] (CINFR) establish the lifecycle of a nuclear facility into distinct licensing phases: site preparation, construction, operation, and decommissioning. The DNNP is currently in the site preparation phase at the time of this decision.

27. In September 2006, OPG submitted a preliminary application for a licence to prepare site at the DNNP site, for up to 4 Class IA nuclear power reactors, with a combined net output of 4800 MW electrical (MWe). The project was referred to a JRP under the CEAA 1992 and OPG submitted an Environmental Impact Statement (EIS) and an updated application for a licence to prepare site in September 2009.

28. At the time the EIS was prepared for the EA, which the legislation directed should be done as early as practicable in the planning process of a project, the Government of Ontario had not yet selected a specific reactor technology. OPG therefore prepared its EIS using a plant parameter envelope (PPE)[31] approach, and the EA examined the potential environmental effects of several possible reactor technologies expected to generate up to 4800 megawatts of electricity for delivery to the Ontario grid.

29. In August 2011, the JRP issued its EA report[32] for the DNNP, stating its conclusions and recommendations regarding the environmental effects of the Project. Following the Government of Canada's response[33] to the JRP recommendations in May 2012, the

[30] SOR/2000-204.
[31] The plant parameter envelope is a set of data derived from available vendor information, for multiple reactor technologies, and provides a bounding envelope of plant design and site parameter values for use in the EA.
[32] Joint Review Panel, Environmental Assessment Report – Darlington New Nuclear Power Plant Project, August 2011.
[33] *Government of Canada's Response to the Joint Review Panel Report for the Proposed Darlington New Nuclear Power Plant Project in Clarington Ontario*, Government of Canada, May 2, 2012.

JRP, as a Panel of the Commission, issued OPG a 10-year power reactor site preparation licence for the DNNP. In October 2021,[34] the Commission renewed the licence for a 10-year period.

30. In December 2021, OPG selected the GEH BWRX-300 reactor as the reactor technology for deployment at the DNNP. OPG submitted a LTC application to build one (1) BWRX-300 reactor. In October 2022, OPG submitted a revised PPE report[35,36] and a report documenting its review of the EIS for the BWRX-300,[37,38] for the Commission's consideration of whether the BWRX-300 was fundamentally different from the reactor technologies assessed in the DNNP EA.

31. In April 2024,[39] the Commission determined that the BWRX-300 reactor technology was not fundamentally different than the technologies considered in the EA, and that a new EA was not required.

3.1.2 BWRX-300 Reactor Technology Description

32. In section 2.0 of CMD 24-H3.1, OPG submitted that the BWRX-300 is a 10th generation boiling water reactor (BWR) designed by GEH, with a 327 MWe output and a water-cooled natural circulation cycle that uses light water as both the coolant and the moderator. In section 4.5.4 of CMD 24-H3.1, OPG noted that the BWRX-300 reactor design is an evolution of GEH's Economic Simplified Boiling Water Reactor (ESBWR) which has been certified by the United States Nuclear Regulatory Commission (US NRC).

33. OPG provides the basic design parameters for the BWRX-300 reactor in Table 1 of CMD 24-H3.1 and a conceptual overview of the BWRX-300 plant systems in Figure 8 of CMD 24-H3.1. OPG also provides a plain language description of the BWRX-300 design in section 3.0 of CMD 24-H3.1C. OPG reported that the BWRX-300 reactor design employs a simplified system layout that requires fewer systems and components and employs passive and inherent safety features.

34. In section 2.0 of CMD 24-H3.1, OPG submitted that the BWRX-300 design incorporates several innovative features including:

- integral reactor isolation valves on the reactor pressure vessel
- large capacity isolation condenser system

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[34] *Record of Decision in the matter of Ontario Power Generation Inc.'s Application to Renew the Power Reactor Site Preparation Licence for the Darlington New Nuclear Project*, DEC 21-H4, CNSC, October 12, 2021.
[35] OPG submission, *Use of Plant Parameters Envelope to Encompass the Reactor Designs being Considered for the Darlington Site*, N-REP-01200-10000, revision 5, October 5, 2022.
[36] OPG submission, *Use of Plant Parameters Envelope to Encompass the Reactor Designs being Considered for the Darlington Site*, N-PRE-02100-10000, revision 6, July 2023.
[37] OPG submission, *Darlington New Nuclear Project Report for the Review of the Environmental Impact Statement for Small Modular Reactor BWRX-300*, revision 0, NK054-REP-07730-00055, October 5, 2022.
[38] OPG report, *Darlington New Nuclear Project Environmental Impact Statement Review Report for Small Modular Reactor BWRX-300*, revision 1, NK054-REP-07730-00055, June 28, 2023.
[39] *Record of Decision in the matter of the Determination of Applicability of Darlington New Nuclear Project Environmental Assessment to OPG's Chosen Reactor Technology*, CNSC, April 19, 2024.

- dry containment constructed using a diaphragm-plate steel composite system
- standardized equipment as well as in-factory modular construction

3.1.3 OPG's Commitments

35. The JRP recommendations directed to OPG are documented and managed through the *OPG DNNP Commitments Report*,[40] discussed in Appendix D.1 of CMD 24-H3, and included in Appendix E of the proposed LCH. The JRP recommendations span the lifecycle of the DNNP. CNSC staff informed the Commission that, as of June 2024, 38 JRP recommendations had been closed and 28 remained open.[41]

36. As discussed throughout section 3.5 of this *Record of Decision*, OPG will be required to provide additional information to the CNSC to support its compliance with regulatory requirements under a number of safety and control areas. These commitments are detailed in Appendix D.2 of CMD 24-H3, under the relevant licence conditions in the proposed LCH, and tracked by CNSC staff in licensing basis document *BWRX- 300 Licensing Regulatory Actions*. Commitments that are essential for CNSC staff to verify compliance with regulatory requirements related to the safety analysis and design of structures, systems, and components (SSCs) that are important to safety are tied to proposed regulatory hold points. Regulatory hold points are discussed further in section 3.8.3 of this *Record of Decision*.

3.2 Applicability of the *Impact Assessment Act*

37. In coming to its decision, the Commission is first required to determine whether any requirement under the IAA applies to OPG's LTC application and whether an impact assessment is required.

38. The IAA came into force on August 28, 2019. The DNNP EA was conducted and approved under CEAA 1992, which was the federal legislation in force at the time. The DNNP EA considered the entire life cycle of the DNNP, including site preparation, construction, operation, and decommissioning.

39. The Commission finds that the IAA does not apply to the construction of the DNNP because a decision has already been rendered by the JRP and the Government of Canada on this proposed project under the CEAA 1992. Therefore, the Commission concludes that there is no requirement under the IAA for an impact assessment to be completed and there are no other applicable requirements of the IAA to be addressed in this matter.

40. In its intervention, the Mississaugas of Scugog Island First Nation (MSIFN; CMD 24-H3.81, CMD 24-H3.81A) expressed concerns regarding what they see as gaps between CEAA, 1992 and the IAA. In their joint oral presentation, the Michi Saagiig Nations also requested that the CNSC require OPG to conduct a gap analysis to consider the

[40] *Darlington New Nuclear Project Commitments Report*, NK054-REP-01210-00078 Revision 9, OPG, November 2023.
[41] Transcript, October 2, 2024, pages 135-137.

discrepancies between CEAA 1992 and the IAA. The Commission heard and considered these concerns as part of its April 2024 determination on the applicability of the DNNP EA to the BWRX-300 reactor technology.[42]

3.3 Views of Hearing Participants

41. In its consideration of OPG's LTC application, the Commission gave careful consideration to all submissions and perspectives received, in accordance with its mandate and the scope of this hearing. The Commission appreciates the efforts and contributions of all hearing participants.

42. OPG applied for a 10-year licence to construct one BWRX-300 reactor and supporting facilities on the existing Darlington Nuclear site. In section 6 of CMD 24-H3.1, OPG submitted that it is qualified to carry on the activities that the LTC would authorize and that 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. OPG noted that it has a history of safe operating performance and has experience managing large-scale projects such as the Darlington NGS Refurbishment Project.

43. In section 1.9 of CMD 24-H3, CNSC staff recommended that the Commission:

- conclude, pursuant to paragraphs 24(4)(a) and (b) of the NSCA, that OPG is qualified to carry on the activities that the LTC would authorize and, in doing so, 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
- issue the proposed power reactor construction licence to OPG for a 10-year period
- accept the financial guarantee proposed by OPG
- delegate authority for the administration of the regulatory hold points in the proposed licence to the CNSC's Executive Vice President and Chief Regulatory Operations Officer

44. In section 4.5 of CMD 24-H3.F, based on the information to date and acknowledging the opportunities for Indigenous Nations and communities to participate in the regulatory process, CNSC staff recommended that the Commission determine the duty to consult, and where appropriate, accommodate under section 35 of the *Constitution Act, 1982* as having been discharged in an appropriate and adequate manner.

45. The Commission received 85 interventions for this hearing. Intervenors expressed views on the following issues:

- the completeness of the design and safety analysis at this licensing stage

[42] Paragraphs 43 and 44, *Record of Decision in the matter of the Determination of Applicability of Darlington New Nuclear Project Environmental Assessment to OPG's Chosen Reactor Technology*, CNSC, April 19, 2024.

- OPG's qualification to complete a large-scale construction project
- the use of regulatory hold points during the proposed licence period
- the BWRX-300 design, including the independence of the shutdown systems, safety function of the reactor isolation valves, and overpressure protection
- the proximity of the proposed location of the DNNP to the Darlington NGS
- OPG's plan for radioactive waste that would be produced from the future operation of the BWRX-300 reactor
- how the Project may contribute to the proliferation of nuclear weapons
- emergency preparedness
- the CNSC's phased approach to licensing
- decommissioning
- general concern with new nuclear power plants
- consultation and engagement with Indigenous Nations and communities, including upholding the UNDRIP and FPIC, CNSC staff's approach to the rights impact assessment, and the completion of Indigenous Knowledge and cumulative effects studies
- how CNSC staff will hold OPG accountable to fulfill its commitments to Indigenous Nations and communities regarding the DNNP
- support for the DNNP

46. The issues raised by hearing participants, and their bearing on the deliberations of the Commission, are discussed in the appropriate subject-specific sections of this *Record of Decision*. Issues raised by Indigenous Nations and communities related to Indigenous engagement and consultation are detailed in section 3.6.3 of this *Record of Decision*.

3.4 Assessment of the Application for a Licence to Construct

47. On October 31, 2022, OPG submitted its application.[43] In its consideration of this matter, the Commission assessed the application submitted by OPG, as required by the NSCA, the *General Nuclear Safety and Control Regulations*[44] (GNSCR), the CINFR, and other applicable regulations made under the NSCA. The proposed BWRX-300 reactor would be a Class IA nuclear facility per section 1 of the CINFR.

48. Section 3 of the GNSCR and section 3 of the CINFR provide the general requirements for a licence application. Section 5 of the CINFR provides the specific requirements for an application for a licence to construct a Class I nuclear facility. CNSC regulatory document[45] REGDOC-1.1.2, *Licence Application Guide: Licence to Construct a Reactor Facility*,[46] clarifies the requirements for, and provides guidance on, submitting an application for a licence to construct.

49. In Appendix A of its application, OPG provided a matrix outlining how its application

[43] *Darlington New Nuclear Project – Application for a Licence to Construct a Reactor Facility*, OPG, October 31, 2022.
[44] SOR/2000-202.
[45] CNSC regulatory documents are typically referred to as REGDOCs.
[46] REGDOC-1.1.2, *Licence Application Guide: Licence to Construct a Reactor Facility*, Version 2, CNSC, October 2022.

satisfied the requirements set out in each applicable clause of the NSCA and applicable regulations. In section 1.6 of CMD 24-H3, CNSC staff submitted that it assessed OPG's application and determined that it provided sufficient information for a licence to construct application.

50. Several intervenors including the Ecojustice Working Group (CMD 24-H3.38), Northwatch (CMD 24-H3.58), Mary Veltri (CMD 24-H3.72), and Victor Lau (CMD 24-H3.75) questioned the completeness of OPG's application. The intervenors were of the view that OPG's application did not contain adequate information on the BWRX-300 design and safety case, emergency planning, radioactive waste management, environmental monitoring, and decommissioning. The Commission is satisfied that OPG's licence to construct application includes adequate information, as required by the GNSCR, the CINFR, and REGDOC-1.1.2. The specific regulatory requirements for a licence to construct, and how OPG satisfies them, are discussed throughout section 3.5 of this *Record of Decision*.

51. Several intervenors including Christine Drimmie (CMD 24-H3.11, CMD 24-H3.11A), Alderville First Nation (CMD 24-H3.62, CMD 24-H3.62A) Nuclear Transparency Project (CMD 24-H3.68), Mississaugas of Scugog Island First Nation (CMD 24-H3.81, CMD 24-H3.81A), Saugeen Ojibway Nation (CMD 24-H3.82), Curve Lake First Nation (CMD 24-H3.83, CMD 24-H3.83A), and Hiawatha First Nation (CMD 24-H3.85, CMD 24-H3.85A) expressed concerns that the phased approach to licensing the DNNP prevented the impacts of the project from being considered holistically. CNSC staff noted that the licensing process for the DNNP has followed the phased approach described in the NSCA and the CINFR. CNSC staff expressed that, the phased approach to licensing the DNNP has allowed for the large project to be planned, conducted, and assessed in a careful and incremental manner that is in line with international best practices. CNSC staff also noted that the EA had considered the entire lifecycle of the DNNP.[47]

52. The Commission concludes that OPG's application for a licence to construct is complete and complies with regulatory requirements. The Commission finds that OPG's application is comprehensive and sufficient for it to consider the application, pursuant to subsection 24(2) of the NSCA.

3.5 OPG's Safety and Control Measures with Respect to the Safety and Control Areas

53. The Commission examined OPG's proposed safety and control measures with respect to the CNSC's safety and control area (SCA) framework, for the purpose of evaluating OPG's application for a licence to construct.

54. In section 2 of CMD 24-H3, CNSC staff submitted that 12 of the 14 SCAs are applicable to OPG's application for a licence to construct, as outlined by REGDOC-1.1.2:

[47] Transcript, January 9, 2025, pages 197-203.

- Management System
- Human Performance Management
- Operating Performance
- Safety Analysis
- Physical Design
- Radiation Protection
- Conventional Health and Safety
- Environmental Protection
- Emergency Management and Fire Protection
- Waste Management
- Security
- Safeguards and Non-Proliferation

The Fitness for Service SCA is not applicable because fitness for service considerations are addressed within the Physical Design SCA and commissioning considerations are addressed within the Operating Performance SCA. The Packaging and Transport SCA is not applicable because it applies to the safe packaging and transport of nuclear substances. OPG's application did not request authorisation of use of nuclear substances and radiation devices, therefore, there are no packaging or transport requirements.

3.5.1 Management System

55. The management system SCA 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.

56. Paragraph 3(1)(k) of the GNSCR states that a licence application shall contain "the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the Act and the regulations made under the Act, including the internal allocation of functions, responsibilities and authority;"

57. Paragraph 3(d) of the CINFR states that an application for a licence in respect of a Class I nuclear facility shall contain "the proposed management system for the activity to be licensed, including measures to promote and support safety culture." Paragraph 5(c) of the CINFR states that an application for a licence to construct a Class I nuclear facility shall contain "the proposed construction program, including its schedule".

58. Section 4.1 of REGDOC-1.1.2 specifies that an application for a licence to construct should describe the management system that has been, or will be, put in place to protect health, safety and the environment, and should also describe the organizational management structure.

59. CSA N286-12, *Management System Requirements for Nuclear Facilities*[48] provides an overall management framework and direction to develop and implement sound management practices and controls for the licensing basis. REGDOC-2.1.2, *Safety*

[48] CSA N286-12, *Management System Requirements for Nuclear Facilities*, CSA Group, 2012 (R2022).

Culture[49] sets out requirements and guidance for fostering a healthy safety culture and conducting safety culture assessments.

60. In section 4.1 of CMD 24-H3.1, section 4.1 of its application, and section 6.1 of CMD 24-H3.1C, OPG provided information on its management system for the DNNP including information on the DNNP Integrated Project Delivery (IPD) model and organization structure, management system governance documentation, configuration management and change control processes, and safety culture. In CMD 24-H3.1G, OPG provided a map of DNNP project plans and how they relate to OPG's overall nuclear management system.

61. In section 4.1 of CMD 24-H3.1, OPG submitted information on the structure of the DNNP organization and the specific roles of OPG and each of its contract partners under the IPD model. The responsibilities of OPG and its contract partners are as follows:

- OPG: The owner and licence holder; OPG will maintain responsibility for the project, including oversight of licensed activities, operator training, commissioning, Indigenous engagement, and stakeholder outreach
- GEH: The technology developer; provides design, procurement of major components and engineering support
- AtkinsRéalis: The architect engineer; provides design, engineering and procurement support
- Aecon: The constructor; will provide construction planning and execution

62. In section 4.1.1 of CMD 24-H3.1, OPG reported that each contract partner is required to implement a quality assurance program and management system, in compliance with CSA N286-12. OPG submitted that it had audited each contract partner to verify compliance with the requirements of CSA N286-12 and CSA N299.1, *Quality Assurance Program Requirements for the Supply of Items and Services for Nuclear Power Plants*,[50] and that it had qualified them on OPG's approved suppliers list. OPG noted that it regularly conducts follow-up audits to ensure ongoing compliance.

63. In section 4.1.3 of CMD 24-H3.1, OPG provided information on the DNNP configuration management plan. OPG submitted that this plan establishes a means to maintain consistency between design requirements, the design, the physical plant configuration, and configuration information. OPG reported that it conducts configuration oversight using a graded approach such that complex or safety significant activities will have more frequent and intrusive oversight.

64. Regarding the maintenance of safety culture, OPG submitted, in section 4.1.4 of CMD 24-H3.1, that OPG and its contract partners integrate a healthy nuclear safety and security culture throughout their management system polices and procedures. OPG also reported that the DNNP nuclear safety and security culture program establishes a framework for ongoing monitoring of safety culture, including the execution of safety

[49] REGDOC-2.1.2, *Safety Culture*, CNSC, April 2018.
[50] CSA N299.1, *Quality Assurance Program Requirements for the Supply of Items and Services for Nuclear Power Plants*, CSA Group, 2016.

and security culture assessments.

65. In section 2.1 of CMD 24-H3. CNSC staff submitted that OPG has a management system in place that satisfies the requirements of CSA N286-12 and is sufficient to manage the activities that would be authorized under the proposed licence to construct. Specifically, CNSC staff reported that:

- OPG has demonstrated that its change management process, as documented in the DNNP program management and execution plans, meets regulatory requirements
- OPG's configuration management process, as applicable to the licence to construct for the DNNP, is documented as required
- OPG has demonstrated that its approach to fostering a healthy safety culture will be in accordance with CSA N286-12 and REGDOC-2.1.2

CNSC staff also identified additional information regarding the management system SCA that OPG would be required to submit prior to the consideration of removal of the first regulatory hold point, should the Commission issue the licence to construct as proposed. Such information includes additional information on the procurement of long-lead items, procurement oversight, and quality assurance standards for SSCs important to safety. OPG will have to provide the required information, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

66. The Commission asked OPG how it would ensure that expectations are clear for each IPD partner. An OPG representative explained that the IPD model is currently in use under OPG's site preparation licence for the DNNP and that processes to allow the IPD partners to work together effectively are already in place.[51] Asked how information is shared between IPD partners, an OPG representative said that the IPD partners use a common computer system to share DNNP documentation; this system is already in use for current activities under OPG's site preparation licence.[52]

67. The Commission asked for additional information on how conflict between IPD contract parties is managed. An OPG representative explained that its management system includes a dispute resolution process to manage internal conflicts. CNSC staff noted that, should the Commission issue the licence to construct, CNSC staff's compliance verification activities would include verification that OPG is taking accountability to work through disputes with its contract partners to ensure that the licensing basis is maintained.[53]

68. Asked how OPG applied lessons learned to the DNNP management system, an OPG representative explained that OPG had integrated lessons learned from the Darlington NGS Refurbishment Project and international new build projects, such as Hinkley Point

[51] Transcript, October 2, 2024, pages 154-155.
[52] Transcript, October 2, 2024, page 113.
[53] Transcript, January 8, 2025, pages 100-102.

C[54] and the Vogtle Project,[55] into its management system for the DNNP. Another OPG representative noted that OPG had also implemented lessons learned from the site preparation phase of the DNNP. Such lessons learned included the management of traffic on site, onboarding of staff, and engagement with Indigenous Nations and communities regarding the issuance of permits. CNSC staff noted that it also tracked lessons learned throughout the site preparation period and have applied those lessons to its compliance verification plan.[56]

69. Several intervenors including Judith Fox Lee (CMD 24-H3.66), the Canadian Coalition for Nuclear Responsibility (CCNR) and Prolet Inc. (CMD 24-H3.67), and Piotr Ciompa (CMD 24-H3.86) expressed concerns that OPG and CNSC staff were rushing the DNNP licensing process. Asked to comment on the DNNP project timeline, an OPG representative explained that the DNNP began in 2006, the EA was conducted in 2011, the Commission issued OPG's site preparation licence in 2012, and OPG selected the BWRX-300 reactor technology for the DNNP in 2021.[57] Since 2021, the Commission has renewed OPG's site preparation licence and determined that the DNNP EA remains applicable to the BWRX-300 technology. CNSC staff confirmed that it has taken no shortcuts in its regulatory review of OPG's application for a licence to construct, or on OPG's previous applications regarding the DNNP. CNSC staff noted that its assessment of the application is consistent with the CNSC's mandate to ensure nuclear safety.[58]

70. The Commission asked CNSC staff to explain its approach to assessing OPG's application for a licence to construct. CNSC staff explained that, prior to receiving OPG's application, CNSC staff had prepared a licence application review plan and conducted benchmarking with international regulators to assess the CNSC's readiness to license small modular reactor technologies. CNSC staff also held discussions with OPG regarding the REGDOCs, codes, and standards that would be applicable to this licensing phase. CNSC staff stated that its licence application review was an iterative process that involved assessments by CNSC staff's technical specialists and 630 information requests to OPG. CNSC staff noted that 70 of those requests remain open and have dedicated regulatory review teams working on them.[59]

71. Asked how disagreements are managed between OPG and CNSC staff, particularly regarding the open information requests, CNSC staff explained that its goal is to have the necessary information provided so as to assess whether OPG meets requirements. If CNSC staff and OPG are unable to come to an agreement on a matter, the matter can ultimately be brought before the Commission for its decision.[60]

72. In section 2.1.2.1 of CMD 24-H3, CNSC staff submitted that OPG was in the process of revising its definition of oversight in the DNNP project assurance program

[54] Hinkley Point C is a nuclear reactor new build project currently under construction in the United Kingdom.
[55] The Vogtle Project refers to an expansion project to build two new nuclear reactors at the Vogtle Electric Generating Plant in the United States. This project is now complete, with the second new nuclear reactor entering commercial operation in 2024.
[56] Transcript, October 2, 2024, pages 137-140 and 147-148.
[57] Transcript, January 8, 2025, pages 103-104.
[58] Transcript, January 14, 2025, pages 41-42.
[59] Transcript, January 14, 2025, pages 12-18.
[60] Transcript, January 8, 2025, pages 102-103.

management plan to satisfy CNSC staff's expectation. Asked for an update on this matter, CNSC staff reported that OPG had updated its definition of intrusive oversight in a manner that is acceptable to CNSC staff.[61]

73. The Commission asked for more information on how OPG would verify that the BWRX-300 facility is constructed in accordance with the final design. An OPG representative explained that OPG has both an engineering oversight team and a construction center of excellence organization that will review the work done to ensure that construction quality and design accuracy is maintained. CNSC staff also confirmed that it will have experienced inspectors on site to verify the completion of construction and quality assurance activities.[62]

74. On the topic of safety culture, the Commission asked OPG to explain how safety culture would be maintained during construction activities. An OPG representative explained that onboarding for all DNNP workers includes safety culture training and that OPG maintains a database where workers can freely raise safety culture issues.[63] Another OPG representative informed the Commission that OPG has also conducted two DNNP safety culture assessments which it has used to identify opportunities to improve its safety culture. OPG's most recent safety culture assessment utilized feedback from over 2,000 people working either full or part-time on the DNNP. The OPG representative stated that OPG plans to continue assessing its safety culture throughout the licence to construct phase of the Project.[64]

75. Regarding the adequacy of the supply chain to support the construction of the DNNP, an OPG representative explained that OPG identifies its supply needs early in the project planning phase and engages with the supply chain to ensure that those project needs can be met. OPG audits suppliers to ensure that their quality processes and programs satisfy regulatory requirements before adding the supplier to OPG's approved suppliers list. OPG ensures that it has redundancy in its approved suppliers and also aims to maximize its use of the local supply chain within Ontario and Canada.[65] The Municipality of Clarington (CMD 24-H3.54) encouraged OPG to increase its use of the local supply chain.

76. The Commission concludes that OPG has an appropriate management system in place for the conduct of the activities under the proposed licence to construct. The Commission finds that:

- OPG's existing management system programs and processes are adequate to support the licensed activities
- OPG's management system includes measures to promote and support safety culture, and meets regulatory requirements, including CSA N286-12 and REGDOC-2.1.2
- OPG has successfully implemented the IPD model under its current site preparation licence for the DNNP and has clearly outlined the responsibilities of

[61] Transcript, January 14, 2025, page 32-33.
[62] Transcript, January 9, 2025, pages 73-76.
[63] Transcript, January 14, 2025, pages 44-47.
[64] Transcript, October 2, 2024, pages 152-153.
[65] Transcript, January 9, 2025, pages 32-33 and 295-297.

each IPD partner under the licence to construct
- OPG is required to submit additional information on the procurement of long-lead items, procurement oversight, and quality assurance standards for SSCs important to safety to the CNSC, prior to the consideration of removal of the first regulatory hold point
- CNSC staff will review all additional management system information submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

3.5.2 Human Performance Management

77. The human performance management SCA encompasses activities that ensure that OPG staff 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.

78. Paragraph 3(d.1) of the CINFR states that an application for a licence in respect of a Class I nuclear facility shall contain "the proposed human performance program for the activity to be licensed, including measures to ensure workers' fitness for duty." Paragraphs 5(1) and 5(m) of the CINFR state that an application for a licence to construct a Class I nuclear facility shall contain "the proposed program and schedule for recruiting, training and qualifying workers in respect of the operation and maintenance of the nuclear facility" and "a description of any proposed full-scope training simulator for the nuclear facility."

79. Section 4.2 of REGDOC-1.1.2 specifies that an application for a licence to construct shall document the graded approach it is planning to implement to comply with the requirements and guidance in the CINFR, REGDOC-2.2.4, *Fitness for Duty: Managing Worker Fatigue*,[66] and REGDOC-2.2.4, *Fitness for Duty Volume II: Managing Alcohol and Drug Use*.[67] The application shall also describe a training system that is in accordance with REGDOC-2.2.2, *Personnel Training*.[68] REGDOC-2.2.2 sets out requirements and guidance for the analysis, design, development, implementation, evaluation, documentation and management of training at nuclear facilities within Canada, including the essential principles and elements of an effective training system.

80. In section 4.2 of CMD 24-H3.1, section 4.2 of its application, and section 6.2 of CMD 24-H3.1C, OPG provided information on its human performance management program, including information on personnel training and certification, resource management. OPG also provided information on its oversight of its contractors' human performance programs.

81. OPG submitted that training for personnel engaged in the activities that would be licensed under the proposed licence to construct include:

- training of staff and contractors conducting construction and commissioning

[66] REGDOC-2.2.4, *Fitness for Duty*: *Managing Worker Fatigue*, CNSC, March 2017.
[67] REGDOC-2.2.4, *Fitness for Duty, Volume II*: *Managing Alcohol and Drug Use*, Version 3, CNSC, January 2021.
[68] REGDOC-2.2.2, *Performance Training*, Version 2, CNSC, December 2016.

activities
- initial training and qualification programs for certified staff (including simulator training), field operations personnel, maintenance, and associated OPG instructors.

OPG reported that its training program will follow a systematic approach to training (SAT) approach that focuses on BWR technology and the DNNP management system. OPG noted that its contracted partners are responsible for the training and qualification of their staff and sub-contractors under their respective management systems.

82. OPG submitted that its initial training and qualification programs will also support the certification of workers.[69] OPG noted that this certification would be completed as part of a future application for a licence to operate the reactor, and prior to fuel-in commissioning. In section 2.2 of CMD 24-H3, CNSC staff identified that OPG would be required to submit its program to train and qualify reactor workers to CNSC staff, prior to the consideration of removal of the third proposed regulatory hold point, should the Commission issue the licence to construct. OPG has committed to provide the requested information, as described in the proposed LCH.

83. In section 2.2 of CMD 24-H3, CNSC staff submitted that OPG has a human performance management program in place that meets regulatory requirements, including REGDOC-1.1.2 and REGDOC 2.2.2. CNSC staff reported that OPG has a satisfactory SAT-based training program in place at the Darlington NGS which has been implemented under OPG's fleet-wide training program. OPG's human performance management program, training program, and the procedures under it, will be applied to work during the licence to construct phase of the DNNP to ensure that workers are trained and qualified to carry out the proposed licensed activities.

84. Regarding worker fitness for duty, CNSC staff noted that nuclear substances will not be on-site during the construction phase and, therefore, REGDOC-2.2.4 and REGDOC-2.2.4 Volume II will not apply. OPG will be required to use these REGDOCs during development of its fitness for duty program in advance of an application for a licence to operate the DNNP. CNSC staff noted that, during the licence to construct phase, OPG's contractors are required to manage their employees' fitness for duty in compliance with all applicable provincial employment and health and safety legislation as well as the master service agreements between OPG and its contractors. CNSC staff added that OPG will be required to oversee the contractors' compliance with these requirements.[70]

85. On the topic of training contract workers, an OPG representative explained that OPG has an established training program that its contract partners must follow. The program includes DNNP-specific onboarding training which all workers must complete before they can enter the site and work.[71]

86. The Commission asked for more information on the training that workers would require to support the construction of the BWRX-300 reactor. An OPG representative

[69] Personnel certification relates to the qualification of certain workers that are employed in positions of immediate relevance to nuclear safety.
[70] Section 2.2 of CMD 24-H3.
[71] Transcript, January 14, 2025, pages 156-158.

responded that the construction of the BWRX-300 reactor will utilize well-understood excavation, building, and assembly practices. All workers would be trained, and have demonstrated their abilities, before they would be allowed to work in the field.[72]

87. The Commission asked about OPG's approach to building a workforce to support the DNNP. An OPG representative explained that OPG has a DNNP resource management plan in place which is updated annually to reflect staffing needs. OPG also engages with trade unions and training centres, and conducts outreach activities with local colleges and secondary schools in order to help develop the next generation of workers.[73]

88. The Commission asked for additional information on OPG's plans to train operators ahead of the operations phase of the DNNP. An OPG representative said that OPG is currently developing its operator training program and expects to have authorized staff in training by mid-2026.[74] The OPG representative noted that OPG has integrated industry operational experience from the American BWR operator Tennessee Valley Authority (TVA) into its operator training program, and has sent OPG staff to TVA to experience their processes first-hand.[75] Asked about the status of the simulator, an OPG representative informed the Commission that the simulator is currently under development and would be ready for use at the end of 2025.[76]

89. The Commission asked how OPG was planning to involve operations staff in the licence to construct phase of the DNNP. An OPG representative informed the Commission that OPG has established a dedicated operations and maintenance team within the DNNP organization.[77] Another OPG representative informed the Commission that the DNNP operations and maintenance teams have already started integrating with the DNNP construction team on the development of commissioning plans.[78]

90. Regarding CNSC staff's readiness to verify compliance for the DNNP, CNSC staff informed the Commission that it has a plan in place for the licence to construct phase of the DNNP. CNSC staff explained that it developed its compliance plan based on experience from the Darlington NGS Refurbishment Project and on international regulatory experience from the US NRC. CNSC staff noted that it has assessed resource requirements for this compliance plan, and that the CNSC will ensure that it is staffed appropriately.[79]

91. The Commission concludes that OPG has an appropriate human performance management program in place for the conduct of the activities under the proposed licence to construct. The Commission finds that:

[72] Transcript, January 14, 2025, pages 60-61.
[73] Transcript, January 9, 2025, pages 65-67.
[74] Transcript, October 2, 2024, pages 159.
[75] Transcript, January 14, 2025, pages 47-49.
[76] Transcript, October 2, 2024, page 164.
[77] Transcript, January 14, 2025, pages 47-48.
[78] Transcript, January 14, 2025, pages 62-63.
[79] Transcript, January 9, 2025, pages 67-70.

- OPG has a SAT-based training program that is adequate to support the activities that would be licensed under the licence to construct
- OPG's SAT-based training program integrates international lessons learned and meets regulatory requirements, including REGDOC-2.2.2
- OPG has proposed measures to verify that its contract partners comply with all fitness for duty requirements during the licence to construct phase
- OPG is working on finalizing its personnel certification program in preparation for its future application for a licence to operate
- OPG has provided an adequate program and schedule for recruiting, training and qualifying workers, and a description of a full-scope training simulator for the nuclear facility, that meet the requirements of the CINFR
- OPG is required to submit its program to train and qualify reactor workers to the CNSC, prior to the consideration of removal of the third regulatory hold point
- CNSC staff will review the additional training program information when submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

3.5.3 Operating Performance

92. The operating performance SCA includes an overall review of the conduct of the activities to be licensed and the activities to enable effective performance at the DNNP.

93. Paragraphs 3(1)(b) and 3(1)(c) of the GNSCR state that a licence application shall contain "the activity to be licensed and its purpose" and "the name, maximum quantity, and form of any nuclear substance to be encompassed by the licence." Paragraph 5(c) of the CINFR states that an application for a licence to construct a Class I nuclear facility shall contain "the proposed construction program, including its schedule".

94. Sections 3.2 and 4.3 of REGDOC-1.1.2 specify that an application for a licence to construct shall describe the programs and their proposed measures, policies, methods, and procedures for constructing and commissioning the nuclear facility. For activities conducted under the licence to construct, the applicant shall characterize the risks to health, safety and the environment that may be encountered by workers and the public, and shall outline the strategy that the applicant will take upon discovery of additional risks to the health and safety of the public that were not anticipated during the licence application process.

95. REGDOC-3.1.1, *Reporting Requirements for Nuclear Power Plants*[80] sets out the timing and information that nuclear power plant licensees are required to report to the CNSC. REGDOC-2.3.1, *Conduct of Licensed Activities: Construction and Commissioning Programs*[81] sets out requirements and guidance for the construction and commissioning of reactor facilities in Canada.

96. In section 4.3 of CMD 24-H3.1 and section 4.3 of its application, OPG provided

[80] REGDOC-3.1.1, *Reporting Requirements for Nuclear Power Plants*, Version 2, CNSC, July 2022.
[81] REGDOC-2.3.1, Conduct of Licensed Activities: Construction and Commissioning Programs, CNSC, January 2016.

information on its procedures, construction program, and commissioning program. OPG also provided a high-level construction schedule in Figure 1.1-2 in its application. OPG acknowledged that it will have the primary responsibility for the safety and security of construction and commissioning activities at the DNNP site, including the work carried out on its behalf by contractors.

97. In section 2.3 of CMD 24-H3, CNSC staff submitted that OPG has in place the necessary procedures to meet the expectations of REGDOC-1.1.2 and REGODC-2.3.1. CNSC staff also noted that OPG has proposed adequate measures to meet the reporting requirements of REGDOC-3.1.1. CNSC staff identified additional information regarding the operating performance SCA that OPG would be required to submit prior to the consideration of removal of the first regulatory hold point, should the Commission issue the licence to construct. OPG will have to provide the requested information, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

98. The Commission asked OPG about how components received on site would be protected from foreign materials during construction activities. An OPG representative explained that OPG has processes in place to receive, inspect, and store components on site in a manner that would protect them from foreign materials, extreme temperatures, and other hazards. OPG also plans to build warehouses on site to safely store components. CNSC staff confirmed that it would conduct compliance verification activities to verify the implementation of OPG's foreign material exclusion processes.[82]

99. Asked for more information on the fuel-out commissioning activities that would be conducted under the proposed licence to construct, an OPG representative explained that fuel-out commissioning would include all the testing activities that could be executed without fuel in the reactor core. The OPG representative added that OPG will finalize its commissioning procedures once the BWRX-300 design is complete.[83]

100. The Commission concludes that OPG has an adequate operating performance program in place for the conduct of the activities that would be authorized under the proposed licence to construct. The Commission finds that:

- OPG has in place the necessary procedures to meet the expectations of REGDOC-1.1.2, REGODC-2.3.1, and REGDOC-3.1.1 while conducting the activities under the proposed licence to construct
- OPG has adequate processes in place to ensure that the BWRX-300 is constructed with quality and in line with the final design
- OPG is leveraging industry BWR operating experience in the preparation of operating procedures for the BWRX-300
- CNSC inspectors will maintain an on-site presence throughout the licence to construct phase
- OPG is required to submit additional information on the operating performance SCA to the CNSC, prior to the consideration of removal of the first regulatory hold point
- CNSC staff will review all additional operating performance program

[82] Transcript, October 2, 2024, pages 171-174.
[83] Transcript, January 14, 2025, pages 64-65.

information when submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

3.5.4 Safety Analysis

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

102. Paragraph 3(1)(i) of the GNSCR states that a licence application shall contain "a description and the results of any test, analysis or calculation performed to substantiate the information included in the application." Paragraph 5(f) of the CINFR states that an application for a licence to construct a Class I nuclear facility shall contain "a preliminary safety analysis report demonstrating the adequacy of the design of the nuclear facility."

103. Section 4.4 of REGDOC-1.1.2 specifies that an application for a licence to construct shall include a preliminary safety analysis report for the reactor facility. The report should include a deterministic safety analysis, a probabilistic safety assessment, and a hazards analysis, commensurate with the level of design. The application should demonstrate that all levels of defence in depth are addressed and should confirm that the facility's design is capable of meeting the applicable dose acceptance criteria and safety goals.

104. In section 4.4 of CMD 24-H3.1, section 4.4 of its application, and sections 2.0 and 3.4 of CMD 24-H3.1C, OPG submitted information on its safety analysis program including information on safety objectives, defence in depth, postulated initiating events, deterministic safety analysis, hazard analysis, probabilistic safety assessment, severe accident analysis, and accident management.

105. OPG provided the *BWRX-300 Preliminary Safety Analysis Report*[84] (PSAR) alongside its application. OPG reported that its PSAR and supporting safety analyses demonstrate that the BWRX-300 reactor will be capable of meeting the safety goals defined in REGDOC 2.5.2, *Design of Reactor Facilities*.[85] OPG noted that the BWRX-300 design and safety analysis are progressing in parallel and iteratively, as per guidance of REGDOC-1.1.2. OPG added that it would provide additional information to CNSC staff as the design and safety analysis are finalized.

106. Regarding defence-in-depth, OPG submitted, in section 4.4.1 of CMD 24-H3.1, that the BWRX-300 reactor is designed for international deployment and utilizes International Atomic Energy Agency (IAEA) standards in its safety methodology. OPG reported that the BWRX-300 safety strategy relies on five defence lines (DLs) consistent with the IAEA defence-in-depth concept and REGDOC-2.5.2, REGDOC-2.4.1, and REGDOC-

[84] *Darlington New Nuclear Project – BWRX-300 Preliminary Safety Analysis Report*, Revision 1, GEH, March 31, 2023.
[85] REGDOC 2.5.2, Design of Reactor Facilities, Version 2, CNSC, April 2023.

2.4.2 requirements. The five defence lines include:

- DL1 – includes features and functions that are aimed at the prevention of deviations from normal operation and the prevention of failures of SSCs important to safety.
- DL2 – includes features and functions that are aimed at detection and control of deviations from normal operation.
- DL3 – includes functions that are intended to act to mitigate postulated initiating events leading to accident conditions.
- DL4 – includes DL4a and DL4b functions. DL4a functions detect and mitigate design extension conditions that occur without core damage. DL4b functions detect and mitigate design extension conditions that cause core damage.
- DL5 – includes features and functions that are intended to mitigate or reduce the consequences of radioactive releases through implementation of emergency preparedness measures.

The application of the defence-in-depth concept is discussed further in section 3.5.5.2 of this *Record of Decision*.

107. In section 2.4 and Appendix A.1 of CMD 24-H3, and in section 3 of CMD 24-H3.F, CNSC staff provided information on its review of OPG's safety analysis submissions. CNSC staff reported that OPG had provided sufficient information to enable CNSC staff to recommend that the Commission issue a licence to construct, with conditions. CNSC staff noted that safety analysis is an iterative process and that there are areas where OPG will be required to provide additional information to demonstrate compliance with regulatory expectations, as the BWRX-300 design and safety analysis progress. OPG will have to provide the requested information, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

108. CNSC staff further noted that OPG would be required to revise the PSAR based on the final BWRX-300 design. This updated safety analysis report would be required as part of a future application from OPG for a licence to operate.

109. The Commission asked CNSC staff to clarify its determination of the adequacy of the PSAR, and how the safety analysis may be impacted as the design progresses. CNSC staff explained that, at this stage of the design, the safety analysis was sufficiently developed to provide quantitative and qualitative evidence that the BWRX-300 design will meet its safety goals with adequate margin. CNSC staff noted that the exact margin may increase or decrease as the design is finalized, however, CNSC staff have enough information to be confident that the safety goals will not be challenged.[86]

3.5.4.1 Hazard Analysis

110. OPG provided the methodology and preliminary results for its hazard analysis in section 15.1 of the PSAR, and in the supporting documents *BWRX-300 DNNP Hazard*

[86] Transcript, January 9, 2025, pages 113-117 and 251-252.

Analysis Methodology[87] and *BWRX-300 DNNP Hazard Analysis Results.*[88]

111. In section 2.4.2.1 and Appendix A.1.1 of CMD 24-H3, CNSC staff reported that OPG's hazard analysis methodology was based on internationally accepted guidelines. CNSC staff was satisfied with OPG's fire, seismic, wind, meteorological, and flooding hazards assessments, and explained why it was of the view that OPG had adequately considered the hazards posed by climate change. OPG will be required to provide more detailed information on its hazards analysis results prior to consideration of the removal of the first regulatory hold point. OPG's requirement in this respect is detailed in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

112. In Appendix A.1.1 of CMD 24-H3, CNSC staff reported that OPG's hazard screening analysis identified that seismic hazards, high winds, internal fires, internal floods, and drops of heavy loads were hazards to be assessed in detail in the probabilistic safety assessment. CNSC staff found the results of OPG's hazards screening analysis to be adequate and in line with CNSC expectations.

113. Several intervenors, including the Nuclear Transparency Project (CMD 24-H3.68) and Durham Nuclear Awareness, Slovenian Home Association, and Canadian Environmental Law Association (CELA; CMD 24-H3.84, CMD 24-H3.84A) raised concerns regarding the impacts of climate change on the DNNP, including how severe weather events may impact the future safe operation of the facility. Asked for more information on OPG's consideration of climate change, an OPG representative stated that OPG had completed a two-phased climate change risk assessment which considered environmental conditions at the Darlington Nuclear site to the year 2100. The OPG representative added that the assessment provided the basis on which OPG was confident in the ability of the DNNP facility to withstand current and future environmental conditions.[89]

114. On the topic of climate change, CNSC staff stated that OPG's contingency plans for flooding and other extreme weather hazards were being tracked under JRP commitment D-C-7, as detailed in the *DNNP Commitments Report*. CNSC staff noted that it found OPG's plans to be compliant with REGDOC-1.1.2 and recent guidance from Environment and Climate Change Canada. CNSC staff noted that commitment D-C-7 remains open pending additional clarifications from OPG, however, CNSC staff expect this action to be able to be closed in the near future.[90]

115. The intervention by Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) raised a concern that external flooding could impact the BWRX-300 reactor building, given the proximity of the facility to Lake Ontario. Asked to respond to this concern, an OPG representative clarified that the reactor building would be located approximately 200 metres from the lake shore, and described the construction techniques and design features that would protect the BWRX-300 reactor building from external flooding. These measures include the diaphragm-plate steel composite reactor building structure,

[87] *BWRX-300 DNNP Hazard Analysis Methodology*, NK054-REP-01210-00144, OPG, September 2022. Confidential.
[88] *BWRX-300 DNNP Hazard Analysis Results*, NK054-REP-01210-00158, OPG, October 2022. Confidential.
[89] Transcript, January 14, 2025, pages 237-239.
[90] Transcript, January 14, 2025, pages 239-240.

sealing the external surface of the reactor building, and backfilling the area to prevent groundwater intrusion. The OPG representative added that the design includes internal sump pumps to remove any water, should those measures fail.[91]

116. Regarding OPG's flood hazards assessment, CNSC staff confirmed that it had reviewed the assessment and found no safety concerns related to external flooding hazards, either from groundwater levels or from the proximity to Lake Ontario. CNSC staff noted that the BWRX-300 reactor building was designed to withstand the maximum extent of flood and highest groundwater level, in accordance with the requirements of REGDOC 2.5.2. CNSC staff further noted that the flood hazards assessment is updated every five years, along with all external hazards assessments and the probabilistic safety assessment.[92]

117. The intervention by the CEDAR Project Environment & Society Program (CMD 24-H3.14) referenced a 2015 University of Toronto PhD thesis[93] which asserted that seismic assessments for the Darlington Nuclear site had been inadequate. Asked to comment on this assertion, a representative from Natural Resources Canada (NRCan) explained that seismic hazard assessments are performed to consider all possible cases of earthquakes and how they could contribute to the ground shaking at a particular site. The NRCan representative explained that OPG conducted a seismic hazard study which found that the seismic hazard at the Darlington site is more sensitive to large-scale background seismicity and that the local features of the site did not contribute as significantly. NRCan found OPG's assessment to be acceptable.[94]

118. Asked how seismic events could impact the below-grade BWRX-300 reactor building, an OPG representative noted that seismic waves are amplified as they travel from the bedrock up through soil layers following a seismic event. The OPG representative explained that the BWRX-300 reactor building foundation will be embedded directly onto bedrock which will reduce the impacts on the reactor building structure during a seismic event. CNSC staff concurred with the OPG representative on this matter.[95]

119. The Commission asked for additional information on what risk seismically-induced liquefaction[96] may pose to the DNNP facility. CNSC staff informed the Commission that OPG considered seismically-induced liquefaction under both the design-basis earthquake and the beyond-design-basis earthquake event scenarios in the hazard analysis. CNSC staff added that OPG would replace soil above the 80-metre elevation with non-liquifiable engineered backfill to mitigate any potential liquefaction hazard.[97] OPG is required to provide the CNSC with the results of backfill verification and test activities, prior to the consideration of removal of the first regulatory hold point, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

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[91] Transcript, January 9, 2025, pages 230-231.
[92] Transcript, January 9, 2025, pages 232-236.
[93] *Geologic Record of Intraplate Seismicity in Southern Ontario,* Katherine Ellen Wallace, Doctorate of Philosophy, Graduate Department of Physical and Environmental Sciences, University of Toronto Scarborough, 2015.
[94] Transcript, January 10, 2025, pages 17-19.
[95] Transcript, January 10, 2025, pages 19-20.
[96] Seismically-induced liquefaction is a phenomenon in which the strength and stiffness of saturated soil is reduced by earthquake shaking, causing the soil to behave like a fluid.
[97] Transcript, January 14, 2025, pages 26-28.

120. Asked if blasting activities during construction could present a liquefaction risk, an OPG representative clarified that the vibrations caused by construction blasts would be significantly lower than those caused by a design-basis earthquake. The OPG representative added that, given the replacement of soil with engineered backfill, OPG was confident that liquefaction would not present a risk to the BWRX-300 facility either during construction activities or as the result of a seismic event.[98]

121. Regarding seismic qualification, an OPG representative explained that OPG was conducting a review of which SSCs are required to perform their design function both during and following a design basis earthquake and therefore need to be seismically qualified. The OPG representative noted that OPG uses industry seismic testing data along with its own testing to validate the performance of SSCs during a seismic event, and that this performance information is then factored into the PSA to ensure that safety goals can be met. CNSC staff noted that it will review OPG's seismic qualification information prior to the consideration of removal of the first regulatory hold point.[99]

122. The interventions from CCNR and Prolet Inc. (CMD 24-H3.67) and CELA (CMD 24-H3.84, CMD 24-H3.84A) raised concerns regarding the proximity of the Darlington NGS to the DNNP facility and the impacts of a potential nuclear emergency at the Darlington NGS. On this topic, an OPG representative explained that:

- an accident at the neighbouring Darlington NGS was considered as an external hazard in the DNNP hazard analysis but was screened out due to very low probability
- the Darlington NGS and DNNP facility would be entirely separate from each other and would not share any infrastructure or support systems

CNSC staff concurred with the response provided by OPG and noted that OPG conducted its hazards analysis in accordance with regulatory requirements.[100]

123. CNSC staff noted that, as part of the final safety analysis (which would be required as part of a future application for a licence to operate) OPG will be required to provide additional information to show that workers within the BWRX-300 control room would not be negatively impacted by radiological releases during the unlikely scenario of a nuclear emergency at the Darlington NGS.[101]

3.5.4.2 Probabilistic Safety Analysis

124. REGDOC-2.4.2, *Probabilistic Safety Assessment (PSA) for Nuclear Power Plants*[102] sets out requirements and guidance for probabilistic safety assessments for reactor facilities.

125. OPG provided the methodology and preliminary results for its PSA in section 15.6 of

[98] Transcript, January 14, 2025, pages 28-31.
[99] Transcript, January 13, 2025, pages 26-30.
[100] Transcript, January 10, 2025, pages 132-137.
[101] Transcript, January 13, 2025, pages 143-144.
[102] REGDOC 2.4.2, *Probabilistic Safety Assessment (PSA) for Nuclear Power Plants,* Version 2, CNSC, May 2022.

the PSAR, and in the supporting documents *BWRX-300 DNNP Probabilistic Safety Assessment Methodology*[103] and *BWRX-300 DNNP Probabilistic Safety Assessment Summary*.[104] In section 4.4.1.5 of CMD 24-H3.1, OPG reported that it conducted its PSA in accordance with REGDOC-2.4.2 and that the results of the PSA demonstrate that the BWRX-300 design meets the quantitative safety goals for core damage frequency (CDF), small release frequency (SRF), and large release frequency (LRF), as established in REGDOC-2.5.2, with significant margin.

126. In section 2.4.2.2.2 of CMD 24-H3, CNSC staff submitted that OPG's PSA is sufficient for a licence to construct. CNSC staff noted, however, that OPG will be required to provide additional information as the BWRX-300 design is finalized. OPG will have to provide updated PSA submissions as the design progresses, including uncertainty, sensitivity, and importance analyses, as well as a specific calculation of the SRF. OPG's requirements in this respect are detailed in Appendix D.2 of CMD 24-H3 and in the proposed LCH. CNSC staff reported that OPG has a sufficient process in place to perform and update PSA results, and that the current preliminary results indicate that the safety goals will be met.

127. The Commission asked how the safety goals for the BWRX-300 compared to those of larger BWRs in operation internationally. CNSC staff responded that the safety goals set in REGDOC-2.5.2, are consistent with international standards, particularly for water-cooled reactors. An OPG representative reiterated that current results show that the BWRX-300 will meet the safety goals established in REGDOC-2.5.2 with significant margin; for example, the LRF for the BWRX-300 has a frequency that is approximately seven percent of the regulatory safety goals.[105]

128. The Commission asked why a break between the reactor pressure vessel and a reactor isolation valve was not a postulated initiating event considered in the PSA. A representative from GEH clarified that a break in this area was considered in the PSA, however, such an event has an extremely low probability of occurrence. The GEH representative noted that the reactor isolation valves would be attached to the reactor pressure vessel via a robust flange assembly and that there would be no piping segments between the two components.[106]

129. The Commission also asked about the possibility of a break between a reactor isolation valve and the outer containment isolation valve. A GEH representative explained that a break in that area was also considered in the PSA, however, the probability of the event occurring was low enough that the event was considered to be a beyond design-basis event. The GEH representative noted that reactor was designed such that cooling could be maintained if a break in that area were to occur.[107]

130. The Commission asked for more information on the results of the seismic PSA. An

[103] *BWRX-300 DNNP Probabilistic Safety Assessment Methodology*, NK054-REP-01210-00143, OPG, September 2022. Confidential.
[104] *BWRX-300 DNNP Probabilistic Safety Assessment Summary*, NK054-REP-01210-00163, OPG, September 2022. Confidential.
[105] Transcript, October 2, 2024, pages 214-216.
[106] Transcript, January 9, 2025, pages 218-219.
[107] Transcript, January 9, 2025, pages 219-220.

OPG representative explained that the preliminary seismic PSA had produced a low CDF and LRF when compared to the requirements of REGDOC 2.5.2. The OPG representative added that, because other hazards contribute very little to the overall risk and the BWRX-300 is a low-risk facility, seismic risk has an overall larger contribution to the PSA.[108]

131. Asked about the impacts of a seismic event on reactor components, an OPG representative explained that OPG had assessed seismic-induced component failures, and their impact on the safety of the facility, as part of the DNNP PSA. CNSC staff confirmed that the PSA results found that OPG had sufficient margin to meet its safety goals. CNSC staff further noted that OPG would be required to update the seismic PSA to reflect the final design and also to confirm that the conclusion of the current seismic PSA results are still valid and bounding.[109]

132. The Commission asked for more information concerning the assumptions OPG made in its seismic PSA.[110] An OPG representative provided the Commission with detailed information on how the analysis modelled the behaviour of soil and structures on the DNNP site in response to a seismic event. The OPG representative explained that, as is typical with complex modelling, OPG made some assumptions regarding soil properties and the behaviour of structures, which OPG then used to optimize the analysis. The OPG representative also noted that OPG had conducted extensive geotechnical investigations to understand the characteristics of the soil layers on the DNNP site and model them accurately. CNSC staff reported that OPG's seismic analysis was conducted in compliance with regulatory requirements. OPG will be required to provide additional information on this matter as the design is finalized, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.[111]

133. Asked if the main control room would be seismically qualified, a GEH representative explained that the main control room would not be qualified for a design-basis earthquake. Instead, the design includes a seismically qualified transit route to bring operators to a secondary control room. CNSC staff stated that it is awaiting more information from OPG on its choice to not seismically qualify the main control room. OPG will provide this information to CNSC staff prior to consideration of the removal of the first regulatory hold point.[112]

3.5.4.3 Deterministic Safety Analysis

134. REGDOC-2.4.1, *Deterministic Safety Analysis*[113] sets out requirements and guidance for the preparation and presentation of a safety analysis that demonstrates the safety of a nuclear facility.

135. By way of CMD 24-H3-Q, the Commission asked OPG and CNSC staff for specific

[108] Transcript, January 14, 2025, pages 101-105.
[109] Transcript, January 13, 2025, pages 20-24.
[110] Transcript, January 13, 2025, pages 24-26.
[111] Transcript, January 14, 2025, pages 4-10.
[112] Transcript, January 14, 2025, pages 105-106.
[113] REGDOC 2.4.1, *Deterministic Safety Analysis*, CNSC, May 2014.

information regarding use of the Transient Reactor Analysis Code GEH (TRACG) computer code to model the safety of the BWRX-300 design, including the modelling of start-up instabilities and the behaviour of the "Global Nuclear Fuel Mk. 2" (GNF2) fuel. CNSC staff and OPG responded to the Commission's questions in CMD 24-H3.F and CMD 24-H3.1C, respectively. In the responses, OPG and CNSC staff provided information including:

- TRACG was qualified under ASME standard NQA-1 *Quality Assurance Requirements for Nuclear Facility Applications*,[114] and CSA N286.7-16, *Quality Assurance of Analytical, Scientific, and Design Computer Programs*[115]
- TRACG validation was based on scaled and full-scale experimental data as well as data from operating BWRs, including natural circulation BWRs, and was subject to additional validation focused on novel BWRX-300 features
- the BWRX-300 design incorporates several features to mitigate power oscillations and enhance stability during startup
- voiding within the GNF2 fuel assemblies during start up is minimal
- there is no direct measurement indicative of boiling transition in the fuel assemblies. Instead, core monitoring precludes boiling transition and calculates critical power[116] for all fuel channels
- for conditions where the power coefficient of reactivity may be positive (e.g. below "hot standby"[117]), operators would maintain reactor power control using normal start-up or shutdown procedures. Operator actions would be supported by the wide range neutron monitoring system
- CNSC staff confirmed the adequacy of the GNF2 fuel bundle design
- OPG is required to provide additional information on TRACG qualification and the BWRX-300 stability analysis to the CNSC prior to the consideration of removal of specified regulatory hold points
- operating procedures such as startup procedures are not yet available and would be required as a part of a future application for a licence to operate

The Commission was satisfied with the responses provided by CNSC staff and OPG.[118]

136. Asked for more information on the verification of computer codes used in the BWRX-300 safety analysis, CNSC staff stated that it is OPG's responsibility to verify and validate the codes used, in line with CSA N286.7 and OPG's quality assurance program. CNSC staff used these codes to independently reproduce and verify the assumptions, methodology, and results of the provided analysis.[119]

137. Northwatch (CMD 24-H3.58) raised concerns regarding differences in the deterministic

[114] ASME NQA-1, *Quality Assurance Requirements for Nuclear Facility Applications,* American Society of Mechanical Engineers (ASME), 2022.
[115] CSA N286.7, *Quality Assurance of Analytical, Scientific, and Design Computer Programs,* CSA Group, 2016 (R2021).
[116] Critical power is the fuel bundle thermal power at the onset of boiling transition.
[117] "Hot standby" refers to core conditions where the coolant pressures and temperatures are at nominal values (7.2 MPa and 260 degrees Celsius, respectively), but the reactor is not producing electric output.
[118] Transcript, January 8, 2025, pages 89-90.
[119] Transcript, January 14, 2025, pages 112-115.

safety analysis conducted for the ESBWR and the analysis conducted respecting the BWRX-300. CNSC staff clarified that the ESBWR and BWRX-300 are different reactor designs and, as such, not all accident scenarios considered for the ESBWR are applicable to the BWRX-300. In addition, some accident scenarios considered under the analyses for both reactor designs were labelled differently in each analysis. An OPG representative noted that the deterministic safety analysis conducted for the BWRX-300 was done in accordance with REGDOC-2.4.1.[120]

138. The Commission asked how large and small pipe breaks would be managed by the BWRX-300 reactor. An OPG representative responded that, in the case of a large pipe break, the reactor pressure vessel would be isolated and the isolation condenser system would be placed in service to cool the core. For a small pipe break or leak, fuel cooling would not be challenged and the systems that maintain reactor cooling would already be in service.[121] CNSC staff noted that it is expecting additional analysis from OPG regarding the small loss of coolant accident scenario as part of the final safety analysis for the BWRX-300.[122]

3.5.4.4 Criticality Safety

139. REGDOC-2.4.3, *Nuclear Criticality Safety*[123] sets out requirements for nuclear criticality safety and provides guidance on how those requirements may be met.

140. OPG provided nuclear criticality analysis in the PSAR and supporting document *BWRX-300 DNNP Out of Core Criticality Safety Analysis Demonstration*.[124] In section 2.4.2.5 of CMD 24-H3, CNSC staff reported that OPG's criticality safety analysis was sufficient for the purposes of a licence to construct. CNSC staff noted that OPG is required to update its safety analysis with detailed criticality safety information as the design is finalized. This updated safety analysis report would be required as part of a future application from OPG for a licence to operate.

3.5.4.5 Severe Accident Analysis

141. The purpose of severe accident analysis is to evaluate the ability of the reactor to withstand challenges posed by beyond design-basis accidents and to identify any potential plant vulnerabilities. In section A.1.5 of CMD 24-H3, CNSC staff reported that it reviewed the severe accident analysis documented in chapter 15 of the PSAR as well as supporting documentation. CNSC staff found that OPG was required to provide additional information on its severe accident analysis to demonstrate compliance with REGDOCs 1.1.2, 2.4.1 and 2.5.2. OPG will have to provide this information prior to the consideration of removal of the first regulatory hold point, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

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[120] Transcript, January 14, 2025, pages 89-92.
[121] Transcript, January 9, 2025, pages 227-228.
[122] Transcript, January 14, 2025, page 111.
[123] REGDOC 2.4.3, *Nuclear Criticality Safety*, Version 1.1, CNSC, September 2020.
[124] *BWRX-300 DNNP Out of Core Criticality Safety Analysis Demonstration*, OPG, December 2023.

3.5.4.6 Conclusions on the Safety Analysis SCA

142. The Commission concludes that OPG's safety analysis program is adequate for the conduct of the activities under the proposed licence to construct. The Commission finds that:

- OPG has submitted a preliminary safety analysis report and supporting analyses that include a deterministic safety analysis, a probabilistic safety assessment, and a hazards analysis, commensurate with the level of design, in compliance with REGDOC-1.1.2, REGDOC-2.4.1, and REGDOC-2.4.2
- OPG's preliminary safety analysis has enough detail at this stage of licensing to show that the BWRX-300 will be able to meet its safety goals with sufficient margin to account for design changes as the design is finalized
- OPG is required to submit additional safety analysis information to the CNSC as the design is finalized, prior to the consideration of removal of the first regulatory hold point
- the additional safety analysis information that will be required to be submitted for consideration of removal of the first regulatory hold point has been adequately articulated
- CNSC staff will review all additional safety analysis information submitted by OPG to ensure that OPG satisfies its requirements and that the safety goals continue to be met

3.5.5 Physical Design

143. The physical design SCA includes the activities that affect the ability of SSCs to meet and maintain their design basis, given new information arising over time and taking changes in the external environment into account. The design basis is the range of conditions and events, according to established criteria, that the facility must withstand without exceeding authorized limits for the planned operation of safety systems.

144. Paragraph 3(1)(d) of the GNSCR states that a licence application shall contain "a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence." Paragraphs 3(a) and 3(b) of the CINFR state that an application for a licence in respect of a Class I nuclear facility shall contain "a description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone" and "plans showing the location, perimeter, areas, structures and systems of the nuclear facility."

145. Paragraphs 5(a), 5(b), 5(d), 5(e), and 5(g) of the CINFR state that an application for a licence to construct a Class I nuclear facility shall contain:

- a description of the proposed design of the nuclear facility, including the manner in which the physical and environmental characteristics of the site are taken into account in the design
- a description of the environmental baseline characteristics of the site and the surrounding area

- a description of the structures proposed to be built as part of the nuclear facility, including their design and their design characteristics
- a description of the systems and equipment proposed to be installed at the nuclear facility, including their design and their design operating conditions
- the proposed quality assurance program for the design of the nuclear facility

146. Section 4.5 of REGDOC-1.1.2 specifies requirements and guidance for the information that an applicant for a licence to construct should provide related to physical design. Such information includes a general description of the overall conceptual physical design of the reactor facility, the design practices, the safety concepts, as well as the approach followed for the general design of SSCs. Additional guidance is provided regarding the provision of information pertaining to site characterization, design authority, defence in depth, safety classification of SSCs, and design change control.

147. In section 4.5 of CMD 24-H3.1, section 4.5 of its application and sections 2.0 and 3.0 of CMD 24-H3.1C, OPG provided information on the design of the BWRX-300, and the physical design program including the iterative design process, design considerations, safety classification of SSCs, and design change control. In section 1.8 of CMD 24-H3.1, section 3.0 of its application, and section 6.5 of CMD 24-H3.1C, OPG also provided information on the DNNP site including on site characterization as it relates to plant design.

148. OPG noted that GEH will remain the Design Authority for the BWRX-300 facility up until plant start-up; OPG will be an informed customer, providing owner oversight and operator inputs. OPG's role will include reviews and acceptance of design deliverables as well as surveillance of engineering activities performed by GEH and the other contract partners in accordance with their respective management systems.

149. In section 2.5 and Appendix A.2 of CMD 24-H3, and in section 3 of CMD 24-H3.F, CNSC staff provided information on its review of OPG's physical design program. CNSC staff submitted that the information provided by OPG for the design of the reactor, along with OPG's commitments to provide additional information as the design progresses, is sufficient for CNSC staff to determine that OPG has met regulatory requirements and to support a recommendation that the Commission issue a licence to construct.

Completeness of the Design

150. Several intervenors, including Ecojustice Working Group (CMD 24-H3.38), Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A), Northwatch (CMD 24-H3.58), Judith Fox Lee (CMD 24-H3.66), CCNR and Prolet Inc. (CMD 24-H3.67), CELA (CMD 24-H3.84, CMD 24-H3.84A), and Piotr Ciompa (CMD 24-H3.86) expressed concerns that the BWRX-300 design was not sufficiently complete for the Commission to authorize construction. A complete design is not required at the licence to construct stage; rather sufficient design information is needed to meet the requirements of the GNSCR, the CINFR, and REGDOC-1.1.2, as detailed above. Evidence that these requirements have been met is provided throughout section 3.5.5 of this *Record of Decision*. In section 3 of CMD 24-H3.F, CNSC staff reported that, as the design progresses, it will ensure that regulatory requirements continue to be met through ongoing compliance verification.

151. Regarding the status of the DNNP facility design, an OPG representative informed the Commission that the standard plant design was 95 percent complete.[125] CNSC staff noted that, based on international benchmarking, construction licences are typically issued when a design is approximately 30 percent complete.[126]

152. Asked for more information on how CNSC staff would be involved as the design is finalized, CNSC staff responded that it has proposed the use of regulatory hold points to ensure that OPG provides information to satisfy CNSC staff's outstanding design questions prior to the start of relevant construction milestones. The use of regulatory hold points is discussed further in section 3.8.3 of this *Record of Decision*. CNSC staff noted that it would also continue its regular compliance verification activities throughout the licence to construct phase, including regular inspections.[127]

153. The intervention by the CCNR and Prolet Inc. (CMD 24-H3.67) asserted that the US NRC had not granted a licence to construct a BWRX-300 reactor in the United States based on the incomplete BWRX-300 design. Asked to comment on this assertion, CNSC staff clarified that the CNSC and the US NRC are currently in different places in the regulatory process regarding the licensing of a BWRX-300 reactor. CNSC staff stated that the US NRC had not yet received an application for a licence to construct and, as such, the CNSC had received more information to review regarding the design. CNSC staff noted that the US NRC is a separate regulatory body with a different licensing process than the CNSC. CNSC staff noted that it has collaborated with the US NRC throughout the BWRX-300 licensing process to compare regulatory approaches.[128]

Design Changes and Configuration Management

154. In section 4.5.5.1 of CMD 24-H3.1, OPG reported that the BWRX-300 design configuration will be maintained throughout the lifecycle of the DNNP through the engineering change control process overseen by the Design Authority. An OPG representative clarified that OPG provides review and acceptance of design changes through the engineering change control process and provides a design change report to the CNSC on a quarterly basis. OPG also provides CNSC staff with early notification of any significant design changes.[129]

155. Asked how OPG would manage new technologies that may arise during the design process, an OPG representative noted that design changes may be submitted for new technologies, such as the latest logic and controls systems, as the design is finalized and OPG contacts vendors for those systems. Any design changes will follow OPG's established engineering change control process. CNSC staff noted that it would review any such design changes to ensure that OPG can implement the change safely while remaining within the licensing basis.[130]

[125] Transcript, January 13, 2025, page 180.
[126] Transcript, January 14, 2025, page 43.
[127] Transcript, January 8, 2025, pages 89-93.
[128] Transcript, January 9, 2025, pages 91-96.
[129] Transcript, January 13, 2025, pages 192-193.
[130] Transcript, January 13, 2025, pages 207-209.

156. The Commission asked for more information regarding CNSC staff's review of design changes. CNSC staff stated that it reviews OPG's quarterly design change reports and engages with OPG when notified of significant design changes. CNSC staff review the changes to ensure that OPG is accounting for the aggregate impact of all design changes, and that the design changes do not invalidate the existing licensing basis. CNSC staff noted that if it were concerned that the licensing basis may be impacted by a design change, it would bring the matter before the Commission for its determination.[131]

3.5.5.1 Key BWRX-300 Design Features

157. The Commission considered the material on the record pertaining to the key features of the BWRX-300 design.

Reactor Isolation Valves

158. In section 2.1.1 of CMD 24-H3.1, OPG submitted that the BWRX-300 design includes reactor isolation valves (RIVs) that are integral to the reactor pressure vessel. The RIVs consist of two redundant valves, each able to automatically isolate the reactor pressure vessel to quickly stop leakage from the vessel in the scenario of a downstream pipe break.

159. The interventions from Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67) raised several concerns regarding the reactor isolation valves including:

- OPG's claim that the RIVs are integral to the reactor pressure vessel
- the reliability of the RIVs

160. Asked how the RIVs are attached to the reactor pressure vessel, a GEH representative explained that the RIV is attached to the reactor pressure vessel nozzle via a flange assembly, and that the nozzle is integral to the vessel itself. The GEH representative explained that a flange connection was chosen because it provides a robust connection while avoiding the need for piping, and thereby eliminating the potential of a piping failure between the reactor pressure vessel and RIV.[132] CNSC staff stated that it expects OPG to provide additional information on how the RIV and reactor pressure vessel meet valve and vessel code requirements, respectively, as the design is finalized.[133]

161. Regarding the reliability of the RIVs, an OPG representative explained that the reliability and redundancy of the RIVs was considered in the design and safety analysis for the BWRX-300. The RIVs consist of two ball valves in series which are each independently able to isolate the pipes connected to the reactor pressure vessel. The valves are designed to fail safe, in the closed position, and would be continuously monitored for leakage. The OPG representative noted that this style of valve is

[131] Transcript, January 8, 2025, pages 93-96.
[132] Transcript, January 9, 2025, pages 215-218.
[133] Transcript, January 9, 2025, pages 144-145.

commonly used in the oil and gas industry and has a low probability of failure.[134]

162. The Commission asked how failure of the RIVs had been considered in the DNNP PSA. CNSC staff noted that the reliability of the RIVs was considered in the preliminary PSA based on reliability data from operating BWRs. CNSC staff noted that uncertainty regarding the reliability data used for the valves is considered in the PSA uncertainty analysis. OPG will be required to submit an updated uncertainty analysis alongside its final PSA, when the design is finalized.[135] OPG's requirements in this respect are detailed in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

Containment

163. In sections 2.1.4 through 2.1.6 of CMD 24-H3.1, OPG submitted information on the design of the BWRX-300 containment system. The containment structure comprises a leak-tight steel-plate composite containment vessel and uses a nitrogen-inert atmosphere during most operating modes. The containment vessel is located within the deeply embedded reactor building and encloses the reactor pressure vessel and some of its related systems and components. Containment temperature is maintained via a containment cooling system and passive containment cooling system.

164. The interventions by Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67) raised concerns that the BWRX-300 design does not include overpressure relief valves on the containment structure. A GEH representative explained that the peak containment pressure for a design basis accident is significantly below the design pressure of the containment structure. In the unlikely case of a beyond design-basis accident that greatly exceeds containment pressure, the containment structure has a rupture diaphragm that would relieve containment pressure into a pool above containment. The pool would quench any steam and scrub any potential radioactive products.[136]

165. The Commission asked OPG to provide additional information on the operation of the passive containment cooling system (PCCS). An OPG representative explained that the PCCS is always in-service and requires no signals or operator action to actuate. The PCCS pipes contain water that transfers heat from the containment atmosphere to an equipment pool above containment via natural convection. There is never vapour in the PCCS tubes. Asked if condensation on the outside of the PCCS pipes would impact the ability of the PCCS to remove heat from containment, the OPG representative explained that the PCCS pipework in containment has sufficient surface area to facilitate effective heat transfer even if condensation is present.[137]

166. The Commission asked for additional information on the design decision to deeply embed the reactor building. An OPG representative explained that deeply embedding the reactor building provided benefits including resilience to seismic events, security, and allowing refuelling activities to occur at ground level. The OPG representative also noted that embedding the reactor building is a practice being used by many new reactor

[134] Transcript, January 9, 2025, pages 139-143 and pages 236-239.
[135] Transcript, January 9, 2025, pages 144-147.
[136] Transcript, January 9, 2025, pages 245-247.
[137] Transcript, October 2, 2024, pages 185-187.

new builds internationally.[138]

Main Condenser and Condenser Cooling Water System

167. In sections 2.3.1 and 2.3.3 of CMD 24-H3.1, OPG submitted information on the BWRX-300's main condenser system and its cooling water supply. The main condenser system is the heat sink during power generation and normal reactor cooldown and startup activities. The main condenser is cooled, through separate piping, by the condenser cooling water system using water from Lake Ontario.

168. The intervention by RESD Inc. (CMD 24-H3.20, CMD 24-H3.20A) provided an analysis of flow-induced vibrations for the BWRX-300 condenser tubes during normal operation. An OPG representative noted that OPG had provided technical information to the intervenor to support their assessment, and that OPG appreciated the intervenor's efforts. The OPG representative noted that OPG and GEH had considered flow-induced vibration mitigation in the design of the condenser and that a detailed flow-induced vibration assessment calculation would be performed when the design is finalized.[139]

169. Asked about the status of the condenser design, an OPG representative explained that OPG was finalizing the detailed design of the condenser. OPG had determined the required condenser size, selected the materials, and was conducting a structural analysis. The OPG representative noted that the selected turbine set is a well understood design and therefore the required condenser performance to support the selected turbine is also very well understood. CNSC staff noted that it would review the final condenser design and related analysis when it is complete.[140]

170. The Commission asked if rising lake temperatures could impact the ability to cool the reactor. An OPG representative explained that the design of the condenser cooling system had accounted for projected lake temperature changes in Lake Ontario out to the year 2100. The OPG representative further noted that the BWRX-300 design does not rely on external water for nuclear safety.[141]

Isolation Condenser System

171. In section 2.1.3 of CMD 24-H3.1, OPG submitted information on the design of the BWRX-300's isolation condenser system (ICS). The ICS removes decay heat after any reactor isolation and shutdown event during power operations. The ICS consists of three redundant independent trains, each containing a heat exchanger that is submerged in a dedicated pool of water above the reactor pressure vessel and is connected to the reactor pressure vessel by steam supply and condensate return piping. Reactor heat is transferred from each heat exchanger tube to the surrounding pool water by condensation and natural circulation.

172. The interventions by Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67) raised concerns that the BWRX-300 design did

[138] Transcript, January 13, 2025, pages 13-16.
[139] Transcript, January 13, 2025, pages 72-74.
[140] Transcript, January 13, 2025, pages 77-79.
[141] Transcript, October 2, 2024, page 182.

not include an emergency core cooling system. In section A.2.5.5.2 of CMD 24-H3, CNSC staff submitted that the BWRX-300's ICS would perform the emergency core cooling safety function. CNSC staff explained that, in the case of a loss of coolant accident, the RIVs would close to isolate the reactor pressure vessel and maintain coolant within the core.[142] The ICS would then be placed in service to remove decay heat from the reactor core.

173. The Commission asked if placing the ICS in service could result in fluid hammer[143] that would impact the pressure boundary. A GEH representative stated that fluid hammer risk was considered in the design of the ICS, and that fluid hammer is not expected during actuation of the ICS because the system is pressurized prior to actuation, and there is significant margin between the operating pressure and the pressure rating of the system. An OPG representative added that there are specific design requirements for the valve type and opening time of the ICS valves to help prevent fluid hammer. CNSC staff noted that it was in discussion with OPG to receive additional information regarding the risk of fluid hammer in the ICS.[144]

174. The interventions by Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67) raised concerns that the BWRX-300 design does not include overpressure relief valves on the reactor pressure vessel. In section 3.2 of CMD 24-H3.1C, OPG reported that the large capacity of the ICS, in conjunction with the large steam volume in the reactor pressure vessel, provides overpressure protection for the reactor pressure vessel and eliminates the need for pressure relief valves.

Means of Shutdown

175. In section 2.1.2 of CMD 24-H3.1, OPG submitted that the control rod drive system provides the primary means of shutting down the BWRX-300 reactor. The control rod drive system uses stored hydraulic energy to insert neutron-absorbing control rods into the reactor core from the bottom of the reactor pressure vessel. A second means of shutdown is provided by the fine motor control rod drive system which uses battery-powered electric motors to drive the control rods into the core and shutdown the reactor. OPG is of the view that these two systems meet the expectation to have two independent means of shutdown, as set out in REGDOC-2.5.2.

176. Several intervenors including Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A), the CCNR and Prolet Inc. (CMD 24-H3.67), and CELA (CMD 24-H3.84, CMD 24-H3.84A) expressed concerns regarding the independence of the BWRX-300's shutdown systems. An OPG representative explained that the shutdown systems for the BWRX-300 are two fully capable drive mechanisms, one hydraulic and one electric, that would insert the same set of control rods into the reactor core to shut down the reactor. The OPG representative stated that the two drive mechanisms are functionally independent and that the failure of one would not prevent the actuation of the other. The OPG representative noted that there is also sufficient redundancy within the

[142] Transcript, January 9, 2025, page 144.
[143] Fluid hammer is a pressure surge that occurs when a fluid in motion is forced to stop or change direction suddenly.
[144] Transcript, January 14, 2025, pages 211-216.

shutdown systems as there are almost twice as many rods as is required for a successful shutdown.[145]

177. Asked to comment on this issue, CNSC staff stated that the two means of shutdown proposed by OPG are not fully independent because they share the same set of control rods. CNSC staff acknowledged that the probability of failure of both insertion mechanisms was very low. CNSC staff noted that it has implemented a cross-functional regulatory team to determine whether the shutdown means proposed by OPG satisfy the alternative approach requirements outlined in REGDOC-2.5.2.[146] OPG will have to provide additional information on this matter prior to the consideration of release of the first regulatory hold point, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

178. The Commission asked for more information on the BWRX-300's boron injection system.[147] An OPG representative explained that the boron injection system provides an alternative means of shutdown in the beyond design-basis scenario where a sufficient number of control rods cannot be driven into the reactor core. CNSC staff clarified that it would be conducting a further review of the design of the boron injection system when OPG submits its detailed severe accident analysis, as OPG is required to do prior to the consideration of removal of the first regulatory hold point.[148]

Spent Fuel Pool

179. In section 2.2 of CMD 24-H3.1 and section 9A.1 of the PSAR, OPG submitted information on the BWRX-300's fuel handling and storage systems, including the spent fuel pool. OPG reported that the spent fuel pool is located in the reactor building, directly above the reactor, and can accommodate up to 8 years of spent fuel. The spent fuel pool is cooled by the fuel pool cooling and cleanup system.

180. The interventions by Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67) raised concern that the location of the spent fuel pool would make it vulnerable to malevolent acts such as an airplane crash. An OPG representative noted that the spent fuel pool is located immediately above the reactor, in a highly protected area of the facility. CNSC staff clarified that, per the *Nuclear Security Regulations* and REGDOC-2.5.2, OPG is required to design its reactor facility, including the spent fuel pool, so that it can withstand design-based threats, including malevolent acts. CNSC staff noted that OPG is required to submit a robustness analysis to demonstrate that the aforementioned requirements have been met. The robustness analysis is due in June 2025 and is required to be approved by CNSC staff prior to the consideration of release of the first regulatory hold point.[149]

Electrical Power and Control Systems

181. In section 2.5 of CMD 24-H3.1, OPG submitted that the BWRX-300 electrical

[145] Transcript, January 10, 2025, pages 141-143.
[146] Transcript, January 10, 2025, pages 143-146.
[147] The boron injection system dispenses a neutron-absorbing boron solution into the core to provide a means of making the reactor subcritical in a beyond design basis event.
[148] Transcript, January 10, 2025, pages 149-151.
[149] Transcript, January 9, 2025, pages 136-139.

distribution system provides an integrated power supply and transmission system for the BWRX-300 facility. In section 2.4.1 of CMD 24-H3.1, OPG submitted that the BWRX-300 distributed control and information system (DCIS) provides control, monitoring, alarming, and recording functions for the facility. Both the electrical distribution system and the DCIS are arranged into three safety classified segments and one non-safety classified segment, each having appropriate levels of hardware and software quality corresponding to the system functions they control and their defence line.

182. The interventions by Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67) raised concerns that the BWRX-300 design did not include sufficient emergency power. Asked to respond to this concern, CNSC staff said that OPG had provided high-level information on its electrical power system that satisfied the requirements of REGDOC-2.5.2 for this stage of the design. CNSC staff explained that the BWRX-300 design includes back-up power provided by two standby diesel generators and emergency back-up power provided by batteries with a 72-hour capacity.[150]

183. The Commission asked for more information on the BWRX-300 DCIS. A GEH representative explained that the DCIS was designed in alignment with the five defence lines and associated safety classes, and described the different control schemes for the systems in each safety class. CNSC staff noted that it has confidence in the robustness of the BWRX-300's DCIS design and that it will continue to review the robustness of the DCIS as the design is finalized.[151]

184. Asked how new DCIS software would be qualified, an OPG representative explained that OPG has a software qualification assurance program in place to ensure that software is designed and qualified in accordance with regulatory requirements. CNSC staff also confirmed that it will conduct detailed verification activities, commensurate with the safety class of the system, to ensure that software has been qualified in accordance with requirements.[152]

Break Exclusion Methodology

185. In section 4.5.4 of CMD 24-H3.1, OPG proposed the application of the break exclusion zone (BEZ) methodology for all high- and moderate- energy[153,154] piping penetrating containment in the BWRX-300 design.

186. The Commission asked for more information on the BEZ methodology proposed by OPG. CNSC staff explained that the BEZ methodology uses increased engineering

[150] Transcript, January 14, 2025, pages 225-227.
[151] Transcript, January 14, 2025, pages 227-233.
[152] Transcript, January 14, 2025, pages 233-237.
[153] Per section 3.4.4.2.1 of the PSAR, high-energy piping refers to piping that is part of a system that, during normal plant conditions, is either in operation or is maintained pressurized under conditions where maximum operating temperature exceeds 93.3°C and/or maximum operating pressure exceeds 1.9 MPaG.
[154] Per section 3.4.4.2.1 of the PSAR, moderate-energy piping refers to piping that is part of a system that, during normal plant conditions, is either in operation or is maintained pressurized (above atmospheric pressure) under conditions where maximum operating temperature is 93.3°C or less and/or maximum operating pressure is 1.9 MPaG or less.

design margin and other factors to eliminate the need to analyze for dynamic effects resulting from the postulated rupture of high-energy piping. CNSC staff explained that the Canadian regulatory framework does not explicitly allow for the BEZ approach, however, it does allow for alternate approaches to be proposed by an applicant as long as they demonstrate an equivalent or superior level of safety in accordance with REGDOC-2.5.2. CNSC staff noted that it was of the view that OPG had not yet demonstrated this equivalency, though progress had been made towards the resolution of this technical issue. OPG will have to provide additional information on this matter to the CNSC prior to consideration of the release of specific regulatory hold points, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.[155]

3.5.5.2 Defence in Depth and Safety Classification of SSCs

187. As discussed in section 3.5.4 of this *Record of Decision*, OPG submitted that the BWRX-300 safety strategy relies on five defence lines. In section 2.5.2.2.5 of CMD 24-H3, CNSC staff confirmed that OPG's implementation of defence in depth within the BWRX-300 design was adequate for this stage of the design. CNSC staff reported that OPG will be required to provide additional information to ensure the defence in depth concept is implemented in accordance with REGDOC-2.5.2, as the design progresses. OPG's requirement in this respect is detailed in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

188. Regarding the safety classification of SSCs, OPG reported, in section 4.5.3 of CMD 24-H3, that the BWRX-300 SSC classification approach is directly correlated to the defence lines in which an SSC performs a function, and the relative safety importance of that function. OPG reported that its approach is in line with IAEA SSR-2/1 *Safety of Nuclear Power Plants: Design*[156] and IAEA SSG-30, *Safety Classification of Structures, Systems and Components in Nuclear Power Plants*.[157] In section 2.5.2.2.6.1 of CMD 24-H3, CNSC staff submitted that OPG had provided sufficient information to support a recommendation that the Commission issue a licence to construct, however, CNSC staff had some concerns regarding OPG's approach to safety classification. OPG is required to provide additional information on safety classification, as outlined in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

189. The interventions by Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67), raised concerns that the simplified BWRX-300 design removed important safety features of previous BWR generations. Asked if the simplified design of the BWRX-300 impacted the application of the defence-in-depth concept, a GEH representative described how the defence-in-depth concept influenced the design of the BWRX-300. GEH first identified the functions that each defence line would rely upon and then identified how those functions would be satisfied by specific SSCs. The GEH representative also noted that the simplified design helped to improve safety by reducing the number of possible initiating events. CNSC staff concurred that the simplification of the BWRX-300 design has not

[155] Transcript, January 14, 2025, pages 77-88.
[156] IAEA SSR-2/1 *Safety of Nuclear Power Plants: Design*, Rev 1, IAEA, 2016.
[157] IAEA SSG-30, *Safety Classification of Structures, Systems and Components in Nuclear Power Plants*, IAEA, 2014.

challenged the defence-in-depth concept.[158]

190. Several intervenors including Stephen Lawrence (CMD 24-H3.59), Catherine Vakil (CMD 24-H3.73), Dr. Sunil Nijhawan (CMD 24-H3.39, CMD 24-H3.39A) and the CCNR and Prolet Inc. (CMD 24-H3.67) referenced the 2011 accident at Fukushima Daiichi[159] and raised concern regarding how the BWRX-300 would withstand a similar event. A GEH representative said that the Fukushima design was reliant on active safety systems and lacked diversity between the defence-in-depth defence lines. The GEH representative explained that the BWRX-300 design thoroughly applies the defence-in-depth concept and relies on passive safety systems that do not require external sources of power or operator actions to perform their safety functions. CNSC staff noted that the BWRX-300 is being designed in alignment with the CNSC's modern regulatory framework, which has been updated to incorporate lessons learned from the Fukushima accident.[160]

191. The Commission asked how GEH assessed the effectiveness of the proposed defence lines. A GEH representative stated that the defence-in-depth strategy is assessed through various methods including analytical modelling, design reviews, deterministic safety analysis, and probabilistic safety assessments. The GEH representative noted that the design process is iterative and that the effectiveness of the defence-in-depth strategy is continually monitored as the design progresses.[161]

192. The Commission asked for an update on OPG's approach to the safety classification of SSCs. CNSC staff informed the Commission that it had a regulatory focus team dedicated to reviewing OPG's safety strategy and safety classification methodology. CNSC staff confirmed that the team has found the overall strategy to be acceptable and that the highest risk SSCs had been appropriately classified. CNSC staff noted that it is conducting ongoing discussions with OPG regarding the classification for lower risk SSCs.[162]

3.5.5.3 Conclusions on Physical Design

193. The Commission concludes that OPG's physical design program is adequate for the conduct of the activities under the proposed licence to construct, and that the design is at an adequate stage to authorize a licence to construct. The Commission finds that:

- OPG's existing programs and processes related to the physical design SCA are adequate to support the licensed activities under the licence to construct
- OPG's existing physical design program meets regulatory requirements, including REGDOC-2.5.2
- OPG has submitted sufficient information on the physical design of the BWRX-300 facility, commensurate with the stage of the Project, to satisfy the

[158] Transcript, January 9, 2025, pages 103-105.
[159] *Fukushima Daiichi Nuclear Accident*, IAEA, retrieved from the IAEA's website: https://www.iaea.org/topics/response/fukushima-daiichi-nuclear-accident, January 23, 2025.
[160] Transcript, January 14, 2025, pages 92-98.
[161] Transcript, January 9, 2025, pages 108-113.
[162] Transcript, October 2, 2024, pages 199-201.

requirements of REGDOC-1.1.2
- OPG has provided sufficient detail on the BWRX-300 design to support the completion of the preliminary safety analysis
- OPG is required to provide additional design information to the CNSC, as the design is finalized, prior to the consideration of release of specified regulatory hold points
- CNSC staff will review all additional design information provided by OPG to ensure that regulatory requirements for the physical design SCA continue to be satisfied

3.5.6 Radiation Protection

194. The radiation protection SCA covers the implementation of a radiation protection program in accordance with the *Radiation Protection Regulations*.[163] The radiation protection program must ensure that radiation doses to persons and contamination levels are monitored, controlled, and maintained as low as reasonably achievable (ALARA), with social and economic factors taken into consideration.

195. Paragraphs 3(1)(e) and 3(1)(f) of the GNSCR state that a licence application shall contain "the proposed measures to ensure compliance with the *Radiation Protection Regulations*, the *Nuclear Security Regulations*[164] and the *Packaging and Transport of Nuclear Substances Regulations, 2015*"[165] and "any proposed action level for the purpose of section 6 of the *Radiation Protection Regulations*."

196. Section 4.7 of REGDOC-1.1.2 specifies that an application for a licence to construct shall include a radiation protection program and should demonstrate how the design of that program is commensurate with the radiological hazards associated with, or encountered during, the licensed activities. The application shall also describe how radiological hazards will be monitored and controlled during construction activities, as applicable.

197. In section 4.7 of CMD 24-H3.1 and section 4.7 of its application, OPG provided information on radiation protection during the construction phase of the DNNP, radiation protection considerations in the BWRX-300 design, and projected occupational exposures during the operation phase of the Project.

198. In section 4.7 of CMD 24-H3.1, OPG explained that the activities that would be authorized under the proposed licence to construct do not include the possession or use of nuclear substances and are not expected to result in radiation doses to workers or the public. OPG clarified that some radioactive sources, such as those used by contract companies in nuclear gauges and exposure devices, may be required at the DNNP site during construction. Those devices are licensed separately by the CNSC and would be used in accordance with the respective licensee's CNSC-approved radiation protection program.

[163] SOR/2000-203.
[164] SOR/2000-209.
[165] SOR/2015-145.

199. In section 4.7.2 of CMD 24-H3.1, OPG reported that radiation protection considerations in the BWRX-300 reactor design include:

- reducing the amount of personnel time required in radiation areas (e.g. remote operations of plant equipment)
- reducing radiation levels in routinely occupied plant areas (e.g. efficient removal of radioactivity from the reactor coolant using filters and demineralizers)

200. In section 2.6 of CMD 24-H3, CNSC staff provided information on its assessment of OPG's radiation protection program. CNSC staff submitted its view that OPG would implement sufficient measures in accordance with the *Radiation Protection Regulations* for the protection of workers conducting licensed activities under the proposed licence to construct. CNSC staff noted that, due to the very low level of exposure anticipated, those workers will not be considered nuclear energy workers (NEWs), as defined by the NSCA.

201. In section 2.6.2.2 of CMD 24-H3, CNSC staff reported that radiological doses to workers on-site under the current site preparation licence are below the regulatory dose limits for a person who is not a NEW. Should the Commission issue a licence to construct, CNSC staff expect that the radiological doses to workers performing licensed activities will remain well below regulatory dose limits throughout the construction phase.

202. Regarding projected occupational exposure during the operations phase of the DNNP, OPG reported, in section 4.7.4 of CMD 24-H3.1, that OPG estimated the annual collective occupational dose during the operations phase to be approximately 490 person-mSv, based on the BWRX-300 conceptual design. This estimate is equivalent to less than the 1 person-Sv annual collective dose target OPG established for the BWRX-300 reactor. OPG will be required to provide more detailed information on the predicted occupational dose for individual NEWs prior to the consideration of removal of the second regulatory hold point, as detailed in Appendix D.2 of CMD 24-H3 and in the proposed LCH. During the hearing, an OPG representative noted that the dose assessment was conservative and would be refined as the BWRX-300 design is finalized.[166]

203. The Commission concludes that OPG has an adequate radiation protection program in place for the conduct of the activities under the proposed licence to construct. The Commission finds that:

- OPG has implemented a radiation protection program that meets the requirements of the *Radiation Protection Regulations*
- The activities that would be authorized under the proposed licence to construct do not include the possession or use of nuclear substances and are not expected to result in radiation doses to workers or the public
- The workers conducting licensed activities under the proposed licence to

[166] Transcript, October 2, 2024, pages 217-218.

construct will not be NEWs.
- OPG is required to submit additional information on the predicted occupational dose for individual NEWs during the operations phase to the CNSC, prior to the consideration of removal of the second regulatory hold point
- CNSC staff will review the individual occupational dose information submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

3.5.7 Conventional Health and Safety

204. The conventional health and safety SCA covers the implementation of a program to manage workplace safety hazards and to protect workers.

205. The NSCA provides that the Commission must be satisfied that the applicant will adequately provide for the health and safety of persons. Paragraph 3(f) of the CINFR states that an application for a licence in respect of a Class I nuclear facility shall contain "the proposed worker health and safety policies and procedures."

206. Section 4.8 of REGDOC-1.1.2 provides specific requirements and guidance for the information that an applicant should provide related to conventional health and safety, including information on the identification and management of workplace hazards, safety inspections, and accident monitoring.

207. CNSC REGDOC-2.8.1, *Conventional Health and Safety*[167] sets out information regarding conventional health and safety and the implementation and maintenance of a conventional health and safety program. In addition, OPG's activities must comply with the *Canada Labour Code*[168], the associated *Canada Occupational Health and Safety Regulations*[169], and Ontario's *Occupational Health and Safety Act*.[170]

208. In section 4.8 of CMD 24-H3.1, section 4.8 of its application, and section 6.2 of CMD 24-H3.1C, OPG provided information on its conventional health and safety program including information on safety training, risk management, contractor oversight, and safety event reporting. In section 6.2 of CMD 24-H3.1C, OPG reported that specific hazards associated with the DNNP construction project include those associated with blasting, underwater tunneling, deep foundation trenching, material handling, and the use of heavy equipment.

209. In section 4.8 of CMD 24-H3.1, OPG noted that, while OPG will be responsible for safety under the proposed licence, the lead contractor for construction would assume the role of constructor under the Ontario *Occupational Health and Safety Act*. OPG reported that each contractor is required meet the regulatory requirements for conventional health and safety and submit project-specific safety plans that detail the management and control of specific hazards. OPG, as the owner, would perform field

[167] REGDOC-2.8.1, *Conventional Health and Safety*, CNSC, July 2019.
[168] R.S.C., 1985, c. L-2.
[169] SOR/86-304.
[170] R.S.O. 1990, c. O.1.

assessments to confirm compliance with contractual terms and the constructor's project-specific plans. OPG would report safety events and non-conformances to the CNSC per the requirements of REGDOC-3.1.1.

210. In section 2.7 of CMD 24-H3, CNSC staff reported that OPG has an established conventional health and safety program in place that meets the requirements of REGDOC-1.1.2, REGDOC-2.8.1, the *Canada Labour Code*, and its associated regulations. CNSC staff noted that OPG is using its fleet-wide health and safety policy along with a site-specific DNNP health and safety plan to manage conventional health and safety for the DNNP. CNSC staff's view is that OPG's conventional health and safety program is appropriate for the activities that would be authorized under the proposed licence to construct.

211. The Commission asked OPG how it benchmarks its conventional health and safety program against international operators. An OPG representative explained that OPG benchmarks its health and safety metrics annually against industry metrics.[171]

212. The Commission asked OPG for additional information on how it would ensure safety during excavation activities. An OPG representative explained that, for each excavation activity, a job hazard and safety plan would be produced, reviewed, and approved before being accepted into the construction work package for execution in the field. The job hazard and safety plans would include information such as the type of equipment to be used, any special provisions required by the depth of the excavation activity, and the required personnel qualifications.[172]

213. Asked about additional considerations respecting health and safety during tunnel boring activities, an OPG representative explained that OPG had selected a contractor with extensive tunnel boring experience and that OPG had considered industry operating experience when selecting its tunnel construction methodology. Regarding the geotechnical risks during tunnel boring, CNSC staff noted that OPG had conducted a comprehensive geotechnical site investigation to confirm the site conditions and identify hazards. CNSC staff explained that, during tunnel boring activities, OPG is required to monitor hazards such as methane gas per the *Ontario Occupational Health and Safety Act*.[173]

214. Regarding CNSC staff's oversight of OPG's conventional health and safety practices, CNSC staff explained that it conducts on-site oversight activities including verification of personnel qualifications, reviewing pre-job briefings, and ensuring that OPG has implemented the safety provisions described in its job hazard and safety plans. CNSC staff also noted that it has a memorandum of understanding with the Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD). The MLITSD will lead, and CNSC staff will support, any investigations that should arise related to conventional health and safety matters.[174]

215. The Commission concludes that OPG has an adequate conventional health and safety

[171] Transcript, January 9, 2025, pages 59-61.
[172] Transcript, January 14, 2025, pages 150-152.
[173] Transcript, January 10, 2025, pages 56-66.
[174] Transcript, January 14, 2025, pages 153-155 and 161.

program in place for the conduct of the activities under the proposed licence to construct. The Commission finds that:

- OPG's has implemented and maintained a conventional health and safety program that meets regulatory requirements, including REGDOC-2.8.1 and the *Canada Labour Code*
- OPG has clearly identified the roles and responsibilities of OPG and its contract partners as they pertain to conventional health and safety, per Ontario's *Occupational Health and Safety Act*
- CNSC staff has adequate plans in place to verify OPG's implementation of conventional health and safety measures during construction

3.5.8 Environmental Protection

216. The environmental protection SCA covers programs that identify, control, and monitor all releases of radioactive and hazardous substances and effects on the environment, from facilities or as the result of licensed activities. The *Radiation Protection Regulations* prescribe the dose limit for the public, which, pursuant to subsection 1(3), is 1 mSv per calendar year.

217. Paragraphs 3(e), 3(g), and 3(h) of the CINFR state that an application for a licence in respect of a Class I nuclear facility shall contain:

- the name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on
- the proposed environmental protection policies and procedures
- the proposed effluent and environmental monitoring programs

218. Paragraphs 5(b), 5(i), 5(j), and 5(k) of the CINFR state that an application for a licence to construct a Class I nuclear facility shall contain:

- a description of the environmental baseline characteristics of the site and the surrounding area
- the effects on the environment and the health and safety of persons that may result from the construction, operation, and decommissioning of the nuclear facility, and the measures that will be taken to prevent or mitigate those effects
- the proposed location of points of release, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including their physical, chemical and radiological characteristics
- the proposed measures to control releases of nuclear substances and hazardous substances into the environment

219. Section 4.9 of REGDOC-1.1.2 specifies that an application for a licence to construct shall include a set of environmental protection measures that meet the requirements of

REGDOC-2.9.1, *Environmental Principles, Assessments and Protection Measures*.[175] The application should also include detailed information related to the potential environmental effects resulting from the conduct of construction and commissioning activities, the proposed timelines and milestones for the development of provisions for environmental protection during the construction phase, and a description of any proposed environmental protection measures that would apply during fuel-in commissioning and reactor facility operation.

220. The following CSA Group N288 series of standards provides requirements and guidance for the environmental management of nuclear facilities:

- CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills*[176] provides guidance on the design and operation of environmental monitoring programs for nuclear facilities
- CSA N288.5, *Effluent monitoring programs at Class I nuclear facilities and uranium mines and mills*[177] provides guidelines on the design, implementation, and management of an effluent monitoring program
- CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills*[178] provides guidance on environmental risk assessments for Class I nuclear facilities and uranium mines and mills
- CSA N288.7, *Groundwater protection programs at Class I nuclear facilities and uranium mines and mills*[179] provides requirements and guidance for the design, implementation, and management of a groundwater protection program to manage risks posed to the environment or the health and safety of humans and non-human biota from groundwater

221. In section 4.9 of its application, section 4.9 of CMD 24-H3.1, and in CMD 24-H3.1E, OPG provided information on its environmental protection program including its environmental management plan, environmental risk assessments, environmental monitoring and EA follow-up program, and effluent and emissions monitoring.

222. In section 2.8 of CMD 24-H3 and section 3 of CMD 24-H3.F, CNSC staff provided information on its review of OPG's environmental protection program. CNSC staff reported that OPG had met regulatory requirements regarding environmental protection and that OPG had demonstrated a continued commitment to provide for the protection of the public and the environment. CNSC staff also identified additional information regarding environmental protection that it would require from OPG, should the Commission issue a licence to construct. OPG is required to provide the requested information to the CNSC prior to the consideration of release of specific regulatory hold points, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

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[175] REGDOC-2.9.1, *Environmental Principles, Assessments and Protection Measures*, Version 1.2, CNSC, September 2020.
[176] CSA N288.4, *Environmental monitoring programs at nuclear facilities and uranium mines and mills*, CSA Group, 2010 (R2019).
[177] CSA N288.5, *Effluent monitoring programs at Class I nuclear facilities and uranium mines and mills*, CSA Group, 2022.
[178] CSA N288.6, *Environmental risk assessments at Class I nuclear facilities and uranium mines and mills*, CSA Group, 2022.
[179] CSA N288.7, *Groundwater protection programs at Class I nuclear facilities and uranium mines and mills*, CSA Group, 2015 (R2020).

223. In section 2.8.2.3 of CMD 24-H3, CNSC staff noted that OPG will also be required to comply with mitigation or compensation measures to minimise the impact of construction activities on at-risk or endangered species, or on their habitats, in accordance with any approvals issued under either the federal *Species at Risk Act*[180] or Ontario's *Endangered Species Act*.[181]

Environmental Risk Assessment

224. An environmental risk assessment (ERA) is a systematic process used to identify, quantify, and characterize the risk posed by contaminants (radiological and non-radiological) and physical stressors in the environment on biological receptors. Receptors include humans and non-human biota. Human receptors are assessed through a human health risk assessment and ecological receptors (i.e., non-human biota) are addressed through an ecological risk assessment.

225. In section 4.9.2 of CMD 24-H3.1, OPG reported that the most recent ERA for the Darlington Nuclear site was issued in 2021, revised in 2022, and encompassed the DNNP site. The ERA was conducted in compliance with regulatory requirements and concluded that the Darlington Nuclear site is being operated in a manner that is protective of human and ecological receptors in the surrounding area. In CMD 24-H3.1E, OPG provided its predictive environmental risk assessment (PERA) which encompassed the site preparation, construction, and operation phases of the DNNP. Based on the results of the PERA, OPG reported that the DNNP is not predicted to result in any adverse effects to the evaluated human or ecological receptor groups.

226. In CMD 24-H3.F, CNSC staff reported that it was still reviewing the PERA, however, CNSC staff had not identified any major concerns regarding unreasonable risk to people or the environment. CNSC staff noted that, should the PERA identify any new or elevated risks to receptors due to construction-related activities, OPG would be required to address those risks and update its mitigation measures prior to beginning construction.

227. The Commission asked OPG to comment on why the PERA included a new "harvester" critical receptor. An OPG representative explained that the harvester receptor is meant to better represent an Indigenous person who may live and/or work near the Darlington Nuclear site and harvest traditional foods in the area. OPG added this receptor in response to engagement with the Williams Treaties First Nations.[182]

228. Asked for more information on the environmental effects considered by the PERA, CNSC staff clarified that the PERA considered all contaminants of potential concern that could be released from the DNNP, how those could interact with the surrounding environment, and the risk posed by those interactions. CNSC staff reiterated that its review of the PERA was still ongoing, however, CNSC staff expect the conclusions to align with those of the EA.[183] CNSC staff noted that its acceptance of the PERA is

[180] S.C. 2002, c. 29.
[181] S.O. 2007, c. 6.
[182] Transcript, January 14, 2025, pages 164-165.
[183] Transcript, January 14, 2025, pages 167-168.

required prior to the consideration of release of the first regulatory hold point, should the Commission issue the licence to construct as proposed.

Environmental Management System

229. In section 4.9 of CMD 24-H3.1, OPG submitted that it has an established environmental management system which is certified under ISO 14001, *Environmental Management Systems*[184] and implements the requirements of OPG's fleet-wide environmental policy. OPG reported that, under the environmental management system, activities under the licence to construct will be executed by way of the following plans:

- Environmental Management and Protection Plan (EMPP)
- Site-Specific Environmental Management Plan (SSEMP)
- Environmental Monitoring and Environmental Assessment Follow-Up (EMEAF) Plan

230. In section 2.8.2.5 of CMD 24-H3, CNSC staff reported that OPG's environmental management system has established an environmental protection program that meets regulatory requirements, including those outlined in REGDOC-2.9.1. CNSC staff noted that OPG's existing environmental management system is sufficient for the activities that would be licensed under the proposed licence to construct.

Effluent and Emissions Control

231. In section 4.9.2 of CMD 24-H3.1, OPG reported that effluents and emissions during the construction phase will be limited to non-radiological discharges including stormwater runoff, dewatering activities, blasting, and airborne emissions from construction equipment. OPG noted that the management and monitoring of such emissions will be addressed through the EMPP and EMEAF plan.

232. In section 2.8.2.2 of CMD 24-H3, CNSC staff reported that OPG maintains an effluent and emissions monitoring program for the Darlington Nuclear site that complies with regulatory requirements, including REGDOC 2.9.1 and CSA N288.5. OPG will continue to implement this program, along with the DNNP-specific EMPP and EMEAF plan, under the proposed licence to construct.

233. The Commission asked CNSC staff for additional information on the environmental impact of condenser cooling water (CCW) system intake and discharge during the construction and operations phases of the Project. Regarding CCW discharge during the operations phase, an OPG representative explained that OPG had conducted a receiving water impact assessment and a thermal effects assessment which found that the CCW discharge would meet the Ontario Ministry for Environment, Conservation and Parks' provincial water quality and thermal discharge objectives.[185] Regarding CCW intake, the OPG representative also noted that Darlington NGS operating experience was considered to improve the design of the CCW in-water structures to minimize the

[184] ISO 14001, *Environmental Management Systems,* International Organization for Standardization, 2015.
[185] Transcript, January 14, 2025, pages 119-121.

possibility of fish impingement or entrainment.[186] CNSC staff stated that it is currently reviewing OPG's CCW design and water impact assessments.[187]

234. Regarding the construction phase, an OPG representative explained that two areas of the lakebed would be disturbed during construction of the CCW structures; where the intake structure is installed and where the discharge diffuser pipes come up through the lakebed. The OPG representative explained that these structures would be installed at a depth of 11 metres, which OPG identified as the optimal depth to minimize impacts to aquatic species. The OPG representative also noted that OPG had applied for the necessary permits to conduct lakebed construction activities.[188]

Assessment and Monitoring

235. In section 4.9.2 of CMD 24-H3.1, OPG reported that it maintains on environmental monitoring program for the entire Darlington Nuclear site in compliance with CSA N288.4 and N288.7. The program monitors off-site air, water, aquatic samples, and terrestrial samples. OPG uses data gathered from this site-wide program to assess the annual radiological dose to members of the public in the vicinity of the site. In CMD 24-H3.15B, the Regional Municipality of Durham noted that it also provides OPG with municipal water samples and air monitoring data.

236. In section 4.9.2 of CMD 24-H3.1, OPG reported that environmental monitoring specific to the DNNP licence to construct phase is established through the EA follow-up program and associated EMEAF plan. OPG explained that DNNP EA follow-up monitoring activities will be conducted as supplementary studies to the site-wide environmental monitoring program. The intent of the EA follow-up program is to verify the predictions made in the DNNP EIS, confirm the effectiveness of mitigation measures, and provide assurance that regulatory criteria are being met.

237. In section 4.9.1 of CMD 24-H3.1, OPG provided additional information on its efforts to monitor and protect terrestrial, aquatic, and wildlife habitats under the EMPP and SSEMP. OPG provided specific information on mitigation measures to protect fish, the threatened Bank Swallow, and eight species of bats (including three endangered species). OPG explained that it would conduct all construction activities in accordance with the conditions of an *Endangered Species Act* permit for construction and the conditions of a Fisheries and Oceans Canada *Fisheries Act* authorization and associated fish habitat compensation plan.

238. In section 2.8.2.3 of CMD 24-H3, CNSC staff confirmed that OPG has maintained an environmental monitoring program for the Darlington Nuclear site that meets the regulatory requirements outlined in REGDOC 2.9.1 and CSA N288.4. CNSC staff noted that OPG's site-wide environmental monitoring program will be updated, as needed, following CNSC staff acceptance of the PERA.

239. In section 2.8.2.3 of CMD 24-H3, CNSC staff submitted that there is potential for dust emissions to exceed short-term criteria during DNNP construction activities and that

[186] Transcript, January 14, 2025, page 123.
[187] Transcript, January 14, 2025, page 125.
[188] Transcript, January 14, 2025, page 122.

noise levels are expected to increase. To manage these effects, OPG has committed to implementing a dust management plan and a noise management plan under the EMPP.

240. Regarding the environmental impacts of construction activities, an OPG representative explained that OPG is developing a green construction implementation plan to minimize environmental impacts during construction. Some of the early measures taken by OPG under this plan include using temporary electrical power supplies to reduce the use of diesel generators and calculating carbon emissions during construction activities. CNSC staff noted that OPG has committed to implement Environment and Climate Change Canada best practices to reduce air emissions from construction and demolition activities. CNSC staff will conduct verification activities to ensure that OPG is following its environmental management system and conducting sufficient environmental monitoring during construction activities. CNSC staff noted that it is already conducting similar verification activities for OPG's activities under its site preparation licence for the DNNP.[189]

241. Asked if concrete production would impact the dust and noise emissions from the DNNP construction site, an OPG representative clarified that excavated rock would be shipped to the nearby St. Marys Cement for processing and would not be processed on the DNNP site.[190]

242. The intervention from the Nuclear Transparency Project (CMD 24-H3.68) raised concerns regarding the potential impact to Bank Swallows during construction of the DNNP facility. Asked for more information on measures to mitigate impacts to the Bank Swallows, an OPG representative explained that the current DNNP construction plan does not involve removing the bluff where the Bank Swallow nesting habitat is located or installing any shoreline protection along the lower part of that bluff. The OPG representative clarified that any potential effects to Bank Swallows from construction activities would be captured in an *Endangered Species Act* permit which would have necessary conditions to offset and mitigate any impacts. As part of its *Endangered Species Act* permit application, OPG has proposed mitigation measures including incremental test blasts, noise and vibration monitoring, and observation of the Bank Swallow behaviour in their nesting habitat. A representative from the Ontario Ministry of Environment, Conservation, and Parks confirmed that OPG has followed the correct processes for applying for, and abiding by, *Endangered Species Act* permits with respect to the DNNP.[191]

243. The Commission asked OPG how it engaged with Indigenous Nations and communities regarding environmental monitoring for the DNNP. An OPG representative explained that OPG had shared the EMEAF plan with rights-holders and incorporated their feedback into the plan. Regarding the larger Darlington Nuclear site, the OPG representative also noted that OPG engages with the Williams Treaties First Nations on the annual results of the Darlington Nuclear site environmental monitoring plan and invites their participation in environmental monitoring activities on site.[192]

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[189] Transcript, January 13, 2025, page 14 and pages 88-95.
[190] Transcript, January 13, 2025, page 97.
[191] Transcript, January 14, 2025, pages 171-174.
[192] Transcript, January 14, 2025, pages 174-176.

244. Regarding the update frequency for OPG's environmental protection plans, an OPG representative explained that the EMPP and SSEMP have both been updated for the licence to construct phase of the Project. The EA follow-up program and associated EMEAF plan cover the full lifecycle of the DNNP and are not updated routinely because they are based on the requirements the came out of the EA process. The OPG representative clarified that each of the environmental monitoring plans can be updated on an as-needed basis, such as when applicable Indigenous Knowledge is provided by Indigenous Nations and communities.[193]

Dose to the Public

245. In section 2.8.2.4 of CMD 24-H3, CNSC staff reported that, during the licence to construct phase, the DNNP will not produce any radiological releases and will not contribute to doses received by members of the public from activities at the Darlington Nuclear site. CNSC staff also noted that development of DNNP-specific radiological licensed release limits and action levels will not be required until OPG applies for a licence to operate.

246. Alongside its application, OPG submitted *Dose Calculations for Human and Non-Human Biota to Support Gap Analysis for DNNP*,[194] which estimated the doses to members of the public from the deployment of four BWRX-300 reactors. In section 5 of CMD 24-H3.F, CNSC staff reported that, for the operation of a single BWRX-300 reactor, OPG conservatively estimated that the dose to the most impacted individual would be 0.305 micro-Sieverts per year (µSv/y). This is well below the 1.0 milli-Sievert (mSv)[195] annual public dose limit as defined in the *Radiation Protection Regulations*. OPG would be required to submit more detailed information on public dose should it choose to apply for a licence to operate.

CNSC Independent Environmental Monitoring Program

247. As described in section 2.8.2.3 of CMD 24-H3, the CNSC has implemented its Independent Environmental Monitoring Program (IEMP) to support its assessments of whether the public and the environment around licensed nuclear facilities are safe. The IEMP is separate from, but complementary to, the CNSC's ongoing compliance verification program. The IEMP involves taking samples from public areas around nuclear facilities and measuring and analyzing the amount of radiological and hazardous substances in those samples. CNSC staff collect the samples and send them to the CNSC's independent laboratory for testing and analysis.

248. In section 2.8.2.3 of CMD 24-H3, CNSC staff clarified that the IEMP focuses on operating facilities where there are releases of radionuclides and hazardous substances. CNSC staff will continue to conduct IEMP monitoring around the Darlington Nuclear site during the DNNP licence to construct phase, however, that monitoring will be focused on the contaminants that are being released from the Darlington NGS.[196] The

[193] Transcript, January 14, 2025, pages 176-178.
[194] *Dose Calculations for Human and Non-Human Biota to Support Gap Analysis for DNNP*, NK054-REP-07730-00064, OPG, July 2023.
[195] 1 mSv is equivalent to 1000 µSv.
[196] Transcript, January 14, 2025, page 170.

last IEMP campaign for the Darlington Nuclear site was conducted in 2023 and the result are available on the CNSC website.

249. The Commission asked CNSC staff if recent IEMP data for the Darlington Nuclear site aligned with CNSC staff's expectations. CNSC staff stated that, to date, the results of CNSC staff's IEMP sampling campaigns across all nuclear facilities have aligned with the environmental monitoring information submitted by licensees.[197]

250. Regarding the involvement of Indigenous Nations and communities in the IEMP, CNSC staff explained that it engages with Indigenous Nations and communities on each IEMP campaign and have welcomed their participation in the IEMP sampling activities.[198]

Conclusion on Environmental Protection

251. The Commission concludes that OPG has an appropriate environmental protection program in place for the conduct of the activities under the proposed licence to construct. The Commission finds that:

- OPG's existing environmental protection program meets regulatory requirements, including REGDOC-2.9.1, and is adequate to support the licensed activities
- OPG has a satisfactory EA follow-up program and associated EMEAF plan to verify that the conclusions of the EA remain valid throughout the DNNP construction phase
- CNSC staff will continue to conduct IEMP monitoring around the Darlington Nuclear site during the construction phase of the DNNP
- OPG has conducted an ERA for the Darlington Nuclear site that meets the requirements of REGDOC-2.9.1 and CSA N288.6
- OPG has conducted a DNNP-specific PERA which is under review by CNSC staff and must be accepted by CNSC staff prior to the consideration of removal of the first regulatory hold point
- Under the licence to construct, the DNNP will not produce any radiological releases and will not contribute to doses received by members of the public from activities at the Darlington Nuclear site
- OPG is required to submit additional environmental protection information to the CNSC, prior to the consideration of removal of specified regulatory hold points
- CNSC staff will review the additional environmental protection information submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

3.5.9 Emergency Management and Fire Protection

252. The emergency management and fire protection SCA covers emergency plans and

[197] Transcript, January 14, 2025, page 169.
[198] Transcript, January 14, 2025, page 170.

emergency preparedness programs that exist for emergencies and for non-routine conditions at the DNNP.

253. Subsection 24(4) of the NSCA provides that the applicant, in carrying out the proposed licensed activity, 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.

254. Paragraph 3(1)(d) and of the GNSCR states that a licence application shall contain "a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence."

255. Section 4.10 of REGDOC-1.1.2 specifies that an application for a licence to construct shall provide details of the emergency preparedness program that is proposed to be implemented under the licence to construct a reactor facility. The emergency preparedness program shall also meet all requirements applicable to the licence to construct phase within REGDOC-2.3.1, REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response*,[199] and CSA N1600:21, *General Requirements for Nuclear Emergency Management Programs*.[200]

256. In section 4.10 of CMD 24-H3.1 and section 4.10 of its application, OPG submitted that it has implemented an effective emergency management and fire protection program under OPG's consolidated nuclear emergency plan. OPG reported that there is no possibility for a radiological emergency originating from the DNNP site to occur during the construction phase as there will be no nuclear fuel on site. OPG has prepared a DNNP nuclear emergency preparedness plan which details the protocols to be implemented on the DNNP site in the unlikely event of a nuclear emergency at the neighbouring Darlington NGS or other hazards require activation of OPG's emergency response organization.

257. In section 4.10 of CMD 24-H3.1, OPG clarified that, while OPG will maintain overall responsibility for safety under the proposed licence to construct, the lead contractor for construction will oversee emergency response on the DNNP site. OPG has reviewed the site-specific emergency response plan prepared by its contractor. This emergency response plan includes worksite evacuation procedures, nearest regional emergency services, and crisis management contact lists.

258. In section 4.10.1 of CMD 24-H3.1 and section 4.10 of its application, OPG submitted that fire protection during the licence to construct phase is conventional in nature and would be governed by the constructor under the broader conventional health and safety plan, as described in section 3.5.7 of this *Record of Decision*. OPG reported that Clarington Emergency and Fire Services will be the primary responders as reflected in a memorandum of understanding between OPG and the Municipality of Clarington. OPG will conduct oversight activities to ensure that fire protection measures implemented by contractors are compliant with regulatory requirements.

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[199] REGDOC-2.10.1, *Nuclear Emergency Preparedness and Response*, Version 2, CNSC, February 2016.
[200] CSA N1600 *General Requirements for Nuclear Emergency Management Programs*, CSA Group, 2021.

259. In section 2.9 of CMD 24-H3 and section 3 of CMD 24-H3.F, CNSC staff submitted that OPG has an emergency management and fire protection program in place that meets regulatory requirements, including the applicable requirements within REGDOC-1.1.2 and REGDOC-2.10.1. CNSC staff noted that a detailed nuclear emergency planning basis is not required at the licence to construct phase, however, OPG will be required to update its planning basis as part of a future application for a licence to operate, as documented in the *DNNP Commitments Report*.

260. In section 2.9.2.2 of CMD 24-H3, CNSC staff noted that OPG also has a memorandum of understanding with Emergency Management Ontario (EMO) to revise the *Provincial Nuclear Emergency Response Plan* (PNERP) prior to the operations phase of the DNNP. This revision would include a revised Darlington implementing plan, or a separate DNNP-specific implementing plan. The implementing plan would specify the emergency planning zones for the DNNP and require a revised evacuation time estimate study.

261. In section 2.9.1 and section 2.5.2.5.12 of CMD 24-H3, CNSC staff noted that OPG would be required to submit updated fire protection assessments, fire protection design documentation, and a third-party review of the fire protection system design to CNSC staff for review and approval once the BWRX-300 design is finalized. OPG is required to provide the requested information prior to the consideration of removal of the first regulatory hold point, as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

262. Asked if the new design of the BWRX-300 would present any unique challenges regarding emergency response during the construction phase, an OPG representative stated that the construction methods that would be used to build the BWRX-300 reactor are similar any large-scale construction project.[201]

263. Asked if Clarington Emergency and Fire Services had the capacity to respond to the DNNP site, the Mayor of Clarington confirmed that the municipality would have sufficient capacity to respond to emergencies during the licence to construct phase of the project. The Mayor informed the Commission that the Municipality of Clarington was undergoing discussions with OPG to ensure that the municipality would continue to have adequate capacity to respond to the DNNP site during the licence to operate phase. [202]

264. Asked if the Regional Municipality of Durham had the capacity to respond to the DNNP site during the construction phase, the Region clarified, in CMD 24-H3.15B, that Durham Region's emergency services, including the Durham Region Police Department and Region of Durham Paramedic Services, were prepared to respond to the site, as required.

265. The Commission asked for more information regarding evacuation of the DNNP construction site in the unlikely event of an emergency at the neighbouring Darlington NGS. CNSC staff confirmed that OPG had updated its nuclear emergency response

[201] Transcript, January 9, 2025, pages 15-16.
[202] Transcript, January 9, 2025, pages 16-17.

plan to respond to a nuclear emergency at the Darlington NGS during the construction phase of the DNNP. The plan includes strategies and procedures to evacuate and to implement protective actions for those on the DNNP site. [203]

266. The intervention by CELA (CMD 24-H3.84, CMD 24-H3.84A) raised concern that the size of the emergency planning zone around the DNNP was insufficient. In section 3 of CMD 24-H3.F, CNSC staff submitted that EMO is responsible for determining the final emergency planning zone sizing for the DNNP. CNSC staff noted that emergency planning zone sizing is an iterative process based on the progression of the design and arrangements between the response organizations. OPG will be required to have the final sizing information available as part of its application for a licence to operate. Representatives from OPG and CNSC staff noted that they will continue to collaborate with EMO in the determination of an appropriately sized emergency planning zone.[204]

267. Regarding the PNERP update, an EMO representative reported that the new draft PNERP was on track for completion by the end of the 2024-2025 fiscal year. The EMO representative explained that the new draft PNERP is an evergreen document that is technology neutral and is based upon a new technical study and methodology that is in accordance with national and international best practices and standards. The EMO representative noted that, throughout the PNERP update project, EMO has engaged and consulted with First Nations, Métis, and Indigenous communities that have traditional territories near licensed CNSC facilities.[205]

268. Asked for additional information on the installation of the fire water system, an OPG representative clarified that the fire water system is being installed at the DNNP site under the current licence to prepare site. The OPG representative explained that OPG will be connecting the fire water system to the DNNP buildings before the buildings are occupied, in accordance with the DNNP project plan.[206]

269. The Commission asked OPG for additional information on how OPG would respond to a fire on the DNNP construction site. An OPG representative explained that the constructor would call Clarington Emergency and Fire Services to respond and would also alert Darlington NGS security personnel for their awareness. The OPG representative clarified that the constructor is authorized to use fire extinguishers to put out small fires as outlined in their site-specific emergency response plan, if they feel safe to do so.[207]

270. The Commission concludes that OPG has adequate emergency management and fire protection programs in place for the conduct of the activities under the proposed licence to construct. The Commission finds that:

- OPG's existing emergency management and fire protection program meets regulatory requirements, including REGDOC-1.1.2 and REGOC-2.10.1, and is

[203] Transcript, January 10, 2025, page 36.
[204] Transcript, January 10, 2025, pages 41-46.
[205] Transcript, January 10, 2025, pages 22-28.
[206] Transcript, January 14, 2025, pages 181-182.
[207] Transcript, January 14, 2025, pages 183-184.

adequate to support the activities that would be authorized under the licence to construct

- OPG has reviewed the site-specific emergency response plan prepared by its contractor to ensure that it aligns with OPG's emergency management program
- Clarington Emergency and Fire Services has the capacity to respond to the DNNP site during the construction period
- OPG's emergency response plans have considered the unlikely scenario of an emergency at the neighbouring Darlington NGS
- OPG is required to submit additional fire protection system design information to the CNSC, prior to the consideration of removal of the first regulatory hold point
- CNSC staff will review the additional fire protection design information submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

3.5.10 Waste Management

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

272. Paragraph 3(1)(j) of the GNSCR states that a licence application shall contain "the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste."

273. Paragraphs 3(e) and 3(k) of the CINFR state that an application for a licence in respect of a Class I nuclear facility shall contain "the name, form, characteristics and quantity of any hazardous substances that may be on the site while the activity to be licensed is carried on" and "the proposed plan for the decommissioning of the nuclear facility or of the site"

274. Paragraphs 5(j) and 5(k) of the CINFR state that an application for a licence to construct a Class I nuclear facility shall contain "the proposed location of points of release, the proposed maximum quantities and concentrations, and the anticipated volume and flow rate of releases of nuclear substances and hazardous substances into the environment, including their physical, chemical and radiological characteristics" and "the proposed measures to control releases of nuclear substances and hazardous substances into the environment."

275. Section 4.11 of REGDOC-1.1.2 provides specific requirements and guidance for the information that an applicant should provide related to waste management, including information on hazardous substances, hazardous wastes, waste minimization, and decommissioning practices.

276. REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*[208] sets out requirements and guidance for managing radioactive waste and REGDOC-2.11.2, *Decommissioning*[209] sets out requirements and guidance regarding the planning and preparation for, as well as the execution and completion of decommissioning.

277. In section 4.11 of CMD 24-H3.1 and section 4.11 of its application, OPG provided information on its waste management program including information on hazardous substances, future radioactive waste, waste minimization, and decommissioning practices. OPG also provided its solid radioactive waste management plan alongside its application, and provided its updated hazardous substance list in CMD 24-H3.B. OPG reiterated that the activities proposed under the licence to construct would not generate any radioactive wastes and that, during the licence to construct phase, non-nuclear hazardous substances and waste will be managed through site-specific environmental protection plans and procedures.

278. Regarding decommissioning practices, OPG submitted two preliminary decommissioning plans (PDP) alongside its application. The first PDP is an 'as-built' PDP which considers a scenario where decommissioning occurs prior to fuel load and the second is an "end of life" PDP which considers the scenario where decommissioning occurs after the plant has ceased operations. Only the 'as-built' PDP is required for the construction phase of the Project. OPG's PDPs are discussed further in section 3.7.2 of this *Record of Decision*.

279. In section 2.10 of CMD 24-H3 and section 3 of CMD 24-H3.F, CNSC staff provided information on its review of OPG's waste management program and reported that OPG had met regulatory requirements regarding waste management and decommissioning as outlined in REGDOC-2.11.1 and REGDOC-2.11.2. CNSC staff identified additional information regarding the management of hazardous wastes that it would require from OPG prior to the consideration of removal of the first proposed regulatory hold point. OPG's requirement in this respect is described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

280. Regarding future radioactive waste, CNSC staff reported that OPG had described the strategies and potential future plans for the management of radioactive waste in chapter 11 of the PSAR and in OPG's solid radioactive waste management plan. CNSC staff noted that OPG's plan described the expected future radioactive waste management activities, including a preliminary characterisation of the wastes expected, consistent with the intent of the regulatory requirements. OPG's plans for the management of radioactive waste, beyond the scope of OPG's licence to construct application, are discussed in section 3.6.3.2 of this *Record of Decision*.

281. On the topic of decommissioning, CNSC staff submitted, in section 2.10 of CMD 24-H3, that OPG had adequately described the proposed activities for decommissioning the 'as-built' facility and had provided a credible cost estimate for those activities. This cost estimate, and the associated financial guarantee for decommissioning, are further discussed in section 3.7.2 of this *Record of Decision*.

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[208] REGDOC-2.11.1, *Waste Management, Volume I: Management of Radioactive Waste*, CNSC, January 2021
[209] REGDOC-2.11.2, *Decommissioning*, CNSC, January 2021.

282. Asked about waste management during construction activities, an OPG representative explained that the waste produced during the construction phase would be typical construction waste including excavated soil and rock. All excavated soil will be stored and managed on site and some of the excavated rock will be used to produce concrete for the Project. An OPG representative also noted that the volume of soil to be managed is significantly less than what was originally anticipated under the DNNP EA.[210]

283. Asked to clarify the requirements for waste management planning during the licence to construct phase, CNSC staff explained that REGDOC-1.1.2 details three primary requirements for waste management and decommissioning. These requirements include information pertaining to hazardous waste inventories, information on how the reactor has been designed for decommissioning, and the PDP for the state of the facility at the end of construction. CNSC staff stated that it received and reviewed documents pertaining to these three requirements and determined that OPG meets the regulatory requirements for the licence to construct phase.[211]

284. The Commission noted that many intervenors, including Northwatch (CMD 24-H3.58), Mississaugas of Scugog Island First Nation (CMD 24-H3.81, CMD 24-H3.81A), Saugeen Ojibway Nation (CMD 24-H3.82), and CELA (CMD 24-H3.84, CMD 24-H3.84A) had raised concerns regarding the readiness of OPG's radioactive waste management plans at this phase in the project. The Commission asked CNSC staff when it expected to receive complete plans from OPG regarding waste management. CNSC staff clarified that OPG would be required to provide detailed information on radioactive waste management for the DNNP, including information on waste streams, storage, disposal, and transport, as part of a future application for a licence to operate.[212]

285. The Commission is satisfied that OPG has an adequate waste management program in place to safely manage waste for the activities under the proposed licence to construct. The Commission finds that:

- OPG's existing waste management program meets regulatory requirements, including REGDOC-2.11.1, and is adequate to support the activities that would be authorized under the licence to construct
- OPG has provided a PDP that meets regulatory requirements, including REGDOC-2.11.2
- No radioactive waste will be produced under the licence to construct
- OPG will be required to provide additional information regarding the management of hazardous wastes to the CNSC, prior to the consideration of removal of the first regulatory hold point
- CNSC staff will review the additional waste management information submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

[210] Transcript, January 13, 2025, page 14 and pages 88-95.
[211] Transcript, January 9, 2025, pages 190-191.
[212] Transcript, January 10, 2025, pages 190-192.

3.5.11 Security

286. The security SCA covers the programs required to implement and support the security requirements stipulated in the regulations, the licence, orders, or in expectations for the facility or activity.

287. Paragraphs 3(1)(d), 3(1)(e), 3(1)(g), and 3(1)(h) of the GNSCR state that a licence application shall contain:

- a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence
- the proposed measures to ensure compliance with the *Radiation Protection Regulations*, the *Nuclear Security Regulations* and the *Packaging and Transport of Nuclear Substances Regulations, 2015*
- the proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment or prescribed information
- the proposed measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information

288. Paragraphs 3(a), 3(b), and 3(i) of the CINFR state that an application for a licence in respect of a Class I nuclear facility shall contain:

- a description of the site of the activity to be licensed, including the location of any exclusion zone and any structures within that zone
- plans showing the location, perimeter, areas, structures and systems of the nuclear facility
- if the application is in respect of a nuclear facility referred to in paragraph 2(b) of the *Nuclear Security Regulations*, the information required by section 3 of those Regulations

289. Section 4.12 of REGDOC-1.1.2 provides specific requirements and guidance for the information that an applicant should provide related to its security program, including cyber security.

290. In section 4.12 of CMD 24-H3.1 and section 4.12 of its application, OPG provided high-level information on its security program including information on physical security and cyber security for the DNNP site. OPG provided detailed security information to the Commission in a confidential information package submitted alongside its application. This package contained a site security plan, construction site threat and risk assessment, and a BWRX-300 security assessment.

291. In section 3.4.7 of its application, OPG reported that the construction site threat and risk assessment confirmed that the Darlington Nuclear site remains suitable, and that any security risks can be effectively mitigated. OPG reported that it will conduct additional threat and risk assessments at each project phase.

292. Regarding cyber security, OPG reported that OPG has implemented a comprehensive cyber security plan which it applies to its entire nuclear power plant fleet, including the

DNNP. OPG also reported that it has a specific BWRX-300 cyber security program plan, which is used to apply security principles throughout the development and lifecycle of the BWRX- 300 instrumentation and control systems.[213]

293. CNSC staff provided information on its review of OPG's security program, as it applies to OPG's LTC application, in section 2.11 of CMD 24-H3, and in CMD 24-H3.C and CMD 24-H.D.[214] CNSC staff are of the view that OPG's security program meets regulatory requirements and that there are no concerns, from a security or cyber security perspective, with the activities that would be authorized under the proposed licence to construct. CNSC staff identified additional information that it would require from OPG during the construction phase, should the Commission issue a licence to construct. OPG will have to provide the requested information as described in Appendix D.2 of CMD 24-H3 and in the proposed LCH.

294. The Commission concludes that OPG has an adequate security program in place to for the conduct of the activities under the proposed licence to construct. The Commission finds that:

- OPG's existing security program is adequate to support the activities that would be authorized under the licence to construct
- OPG's security program meets regulatory requirements and includes measures for both physical and cyber security
- OPG conducted a construction site threat and risk assessment which found that any security risks during the construction phase can be effectively mitigated
- OPG will be providing additional security-related information to the CNSC as it becomes available, prior to the consideration of removal of the first regulatory hold point
- CNSC staff will review the additional security-related information submitted by OPG to ensure that OPG satisfies its commitments and regulatory requirements

3.5.12 Safeguards and Non-Proliferation

295. The safeguards SCA covers the programs and activities required for the successful implementation of the obligations arising from the Canada/International Atomic Energy Agency (IAEA) safeguards agreements as well as all other measures arising from the *Treaty on the Non-Proliferation of Nuclear Weapons*[215] (NPT). Pursuant to the NPT, Canada has entered into a *Comprehensive Safeguards Agreement*[216] and an *Additional Protocol*[217] (safeguards agreements) with the IAEA. The objective of these safeguards agreements 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.

[213] Section 4.12.1 of CMD 24-H3.1.
[214] CMD 24-H3.C and CMD 24-H3.D contain prescribed information and are not available to the public.
[215] INFCIRC/140.
[216] INFCIRC/164.
[217] INFCIRC/164/Add.1.

296. Paragraphs 3(1)(c), 3(1)(g), and 3(1)(h) of the GNSCR state that a licence application shall contain:

- the name, maximum quantity and form of any nuclear substance to be encompassed by the licence
- the proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment or prescribed information
- the proposed measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information

297. Paragraph 5(h) of the CINFR states that an application for a licence to construct a Class I nuclear facility shall contain "the proposed measures to facilitate Canada's compliance with any applicable safeguards agreement."

298. Section 4.12 of REGDOC-1.1.2 provides specific requirements and guidance for the information that an applicant should provide related to safeguards and non-proliferation, including the licensee's arrangements to discharge Canada's obligations and provide information to the IAEA.

299. REGDOC-2.13.1, *Safeguards and Nuclear Materials Accountancy*[218] sets out requirements and guidance for safeguards programs for applicants and licensees who possess nuclear material, operate a uranium and/or thorium mine, carry out specified types of nuclear fuel-cycle related research and development work, and/or carry out specified types of nuclear-related manufacturing activities.

300. In section 4.13 of CMD 24-H3.1 and section 4.13 of its application, OPG provided information on its safeguards and non-proliferation program for the DNNP. OPG reiterated that the activities that the proposed licence to construct would authorize would not include the receipt or handling of nuclear fuel. With that noted, OPG provided information on its plans for installing safeguards equipment, providing access and assistance to the IAEA, and for future nuclear material accountancy and control.

301. In section 4.13.1 of its application, OPG submitted that it provided a design information questionnaire to the CNSC alongside its application. OPG reported that this questionnaire provided CNSC staff and the IAEA with information pertaining to the facility's design, operation, and locations of nuclear material inventory and nuclear material flow points to ensure that the IAEA has the necessary information to establish safeguards measures. OPG reported that it would update the questionnaire as construction progresses.

302. With respect to granting access and assistance to the IAEA, in section 4.13.3 of CMD 24-H3.1, OPG reported that it would provide access to the IAEA for all reasonable requests on short notice for access to applicable DNNP facilities and equipment.

303. In section 2.12 of CMD 24-H3 and section 3 of CMD 24-H3.F, CNSC staff submitted that OPG had maintained a safeguards program across all of its operating nuclear facilities that is compliant with REGDOC-2.13.1. While not all elements of the

[218] REGDOC-2.13.1, *Safeguards and Nuclear Material Accountancy*, CNSC, February 2018.

program are applicable during the licence to construct phase, CNSC staff noted the requirement to provide IAEA inspectors with access and assistance, along with the submission of operational and design information reporting, would be required. CNSC staff is of the view that OPG has adequate measures in place to achieve safeguards and non-proliferation objectives.

304. Regarding non-proliferation, CNSC staff noted that OPG would continue to exchange controlled nuclear information pertaining to the BWRX-300 reactor technology with GEH during the construction phase.[219] In section 4.13 of CMD 24-H3.1, OPG reported that it maintains a set of import and export licences which authorize the exchange of controlled nuclear information with specified international parties. OPG submitted that it would continue to manage these licences separately from the current licence to prepare site and the proposed licence to construct.

305. Asked about the installation of IAEA monitoring equipment, an OPG representative stated that OPG is committed to providing access to the IAEA to install its equipment as needed. The OPG representative noted that there were no novel features in the BWRX-300 design that would impact the IAEA's ability to conduct its monitoring activities.[220]

306. Regarding the design information provided to the IAEA, CNSC staff noted that, per REGDOC-2.13.1, the IAEA would be informed about any changes to the design information questionnaire 270 days before the commencement of construction activities.[221]

307. Several intervenors including Chris Corey (CMD 24-H3.28), Barbara Schumacher (CMD 24-H3.33), Marilyn Hay (CMD 24-H3.34), Mary Ludwig (CMD 24-H3.44), and Stephen Lawrence (CMD 24-H3.59) expressed concern regarding how the Project may contribute to the proliferation of nuclear weapons. While out of scope for the licence to construct phase, the Commission notes that, in section 3 of CMD 24-H3.F, CNSC staff explained that it implements a licensing and compliance program to ensure that imports and exports of nuclear and nuclear-related dual use items conform to regulatory requirements, as well as to Canada's nuclear non-proliferation policy and international obligations. CNSC staff reported that OPG has demonstrated an intent to comply with CNSC import and export licensing requirements for controlled nuclear substances and equipment, at the appropriate licensing stages, and that it has adequate measures in place to achieve the non-proliferation objectives.

308. The Commission concludes that OPG has an appropriate safeguards program in place to accommodate the activities under the proposed licence to construct. The Commission finds that:

- OPG's existing safeguards and non-proliferation program is adequate to support the activities that would be authorized under the licence to construct
- OPG's safeguards and non-proliferation program meets regulatory requirements, including those set out in REGDOC-2.13.1

[219] Section 2.12, CMD 24-H3.
[220] Transcript, January 14, 2025, pages 186-190.
[221] Transcript, January 14, 2025, pages 188.

- OPG has provided preliminary design information to CNSC staff and the IAEA and will update that information no later than 270 days prior to the start of construction
- OPG has committed to provide the IAEA with access to DNNP facilities and equipment
- OPG has the appropriate licences to authorize the exchange of controlled nuclear information with GEH

3.5.13 Conclusions on OPG's Safety and Control Measures with Respect to the Safety and Control Areas

309. Based on its analysis of the information provided and discussed above, the Commission is satisfied that OPG is qualified to carry on the licensed activities that the licence to construct would authorize. In addition, the Commission finds that OPG has adequate programs and measures in place, or that will be in place, with respect to the 12 applicable 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 adequate measures in place to provide for the maintenance of national security and to implement international obligations to which Canada has agreed.

310. OPG is required to provide additional information to the CNSC to support its compliance with regulatory requirements under a number of safety and control areas. OPG will have to provide this information, as described in Appendix D.2 of CMD 24-H3, in the proposed LCH, and throughout section 3.5 of this *Record of Decision*. The Commission expects CNSC staff to track OPG's completion of these commitments in licensing basis document *BWRX-300 Licensing Regulatory Actions*. Commitments that are essential to verify compliance with regulatory requirements related to the safety analysis and design of SSCs that are important to safety are tied to proposed regulatory hold points, as described in section 3.8.3 of this *Record of Decision*.

3.6 Indigenous Engagement and Consultation

311. The common law duty to consult is grounded in the key principle of the honour of the Crown. The foundation of the duty in the Crown's honour and the goal of reconciliation mean that the duty arises when the Crown has knowledge, real or constructive, of the potential existence of the Aboriginal right or title and contemplates conduct that might adversely affect it.[222] The Commission acknowledges its obligation to fulfill the duty to consult and ensure that it upholds Aboriginal and/or treaty rights, pursuant to section 35 of the *Constitution Act, 1982* in the matter before it. The Commission is also mindful that its determination of what the duty to consult and accommodate requires is informed by the principles and the provisions of the UNDRIP as a result of its adoption into Canadian law via the UNDA.

312. OPG's Darlington facility falls within the area of historic Southern Treaties (1764-

[222] *Haida Nation*, supra note 9 at paragraph 35.

1862) entered into following the Royal Proclamation of 1763.[223] These treaties include the Niagara Treaty (1764), the Treaty of Paris (1783), and the Upper Canada Treaties of 1764-1846. The most recent treaty agreements are the Williams Treaties, signed in 1923.

313. With respect to the Williams Treaties, in 2018, a Settlement Agreement was reached between the Crown and the Chippewa and Mississauga peoples who signed the Williams Treaties, providing recognition of pre-existing treaty harvesting rights in certain areas, financial compensation, potential for additional reserve lands, and apologies from Canada and Ontario for their narrow interpretation which denied Chippewa and Mississauga peoples of the rights solidified in the 1923 treaties.[224] The signatories to the Williams Treaties are:

- Alderville First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississaugas of Scugog Island First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Beausoleil First Nation
- Chippewas of Rama First Nation

314. The CNSC's consultation process provides for Indigenous Nations and communities to:

- receive and assess project information
- participate in public proceedings
- apply for participant funding
- make submissions—both oral and written—about their concerns, how their concerns could be accommodated, and with respect to potential or actual impacts to Aboriginal and/or treaty rights
- integrate ceremony into public proceedings

315. In meeting its obligations towards Indigenous Nations and communities, the Commission may rely on consultation undertaken by CNSC staff as well as the opportunities for Indigenous Nations and communities to make submissions directly to the Commission and to participate in the hearing process. The Commission may also rely on the engagement work of OPG. This consideration does not mean that the consultation undertaken by CNSC staff stops or is replaced by OPG's engagement, but rather that both continue concurrently.[225]

316. The Commission considered the information provided by CNSC staff and OPG regarding Indigenous consultation and engagement activities in respect of this matter.

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[223] On October 7, 1763, King George III issued a Royal Proclamation for the administration of British territories in North America, which set out the core elements of the relationship between First Nations and the Crown, established the recognition of First Nation rights in Canada, and laid the foundation of the treaty-making process and Canada's territorial evolution. Retrieved online from the Government of Canada website - Indigenous History in Canada - Royal Proclamation of 1763.

[224] Honourable Carolyn Bennett, Minister of Crown-Indigenous Relations on behalf of the Government of Canada *Statement of Apology for the Impacts of the 1923 Williams Treaties*, November 17, 2018, Rama, Ontario.

[225] *Notice of Public Hearing 2024-H-03*, CNSC, June 27, 2024.

The Commission also considered the oral and written submissions of Indigenous Nations and communities and their representatives regarding their impacted rights and interests.

317. The Commission recognizes that all Indigenous Nations and communities participating in this matter have shared valuable time, energy, and knowledge with the Commission. The Commission has carefully considered the submissions and knowledge provided by the Indigenous Nations and communities with a view to understanding the issues and concerns as presented. The Commission sincerely appreciates the participation of each Indigenous Nation and community. The hearing process provided a valuable opportunity for the Commission to interact and exchange with rights-bearing Indigenous Nations, Indigenous groups and individuals respecting their views, contributions, and considerations important to the matter before the Commission.

318. The matter before the Commission is OPG's application for a licence to construct one BWRX-300 reactor at OPG's Darlington Nuclear site. Licensing decisions of the Commission, where established or potential Aboriginal and/or treaty rights 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. The Commission acknowledges that the matter before the Commission triggers the duty to consult with regards to the rights-holding William Treaties First Nations.

3.6.1 Indigenous Consultation by CNSC Staff

319. In section 3.1.2 of CMD 24-H3, CNSC staff identified the following Indigenous Nations and communities who have Aboriginal and/or treaty rights in the area where the DNNP is proposed. These Indigenous Nations and communities are also referred to as the "potentially impacted" Indigenous Nations and communities.

- Williams Treaties First Nations:
    - Alderville First Nation (AFN)
    - Curve Lake First Nation (CLFN)
    - Hiawatha First Nation (HFN)
    - Mississaugas of Scugog Island First Nation (MSIFN)
    - Chippewas of Beausoleil First Nation
    - Chippewas of Georgina Island First Nation
    - Chippewas of Rama First Nation

CNSC staff also identified the following Indigenous Nations and communities who have expressed an interest in the DNNP:

- Métis Nation of Ontario (MNO)
- Mohawks of the Bay of Quinte
- Saugeen Ojibway Nation (SON)
- Six Nations of the Grand River

The term "identified Indigenous Nations and communities" refers to both the potentially impacted and the interested Indigenous Nations and communities.

320. CNSC staff provided the Commission with information about its consultation and engagement activities with the identified Indigenous Nations and communities in section 3 of CMD 24-H3, section 4 of CMD 24-H3.B, in *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application* (appended to CMD 24-H3), and orally at the hearing. In section 4 and Appendices A and C of CMD 24-H3.F, CNSC staff provided updates on its engagement and consultation efforts, its assessment of potential impacts on rights, and CNSC staff's recommendations related to Indigenous engagement and consultation. CNSC staff's key recommendations were that:

- OPG's licence to construct application has the potential to impact Aboriginal and/or treaty rights; and
- those potential impacts have been appropriately assessed, considered, mitigated, and accommodated based on the commitments and accommodation measures proposed by OPG and CNSC staff

321. CNSC staff submitted that it had consulted and engaged with the identified Indigenous Nations and communities on the DNNP on an ongoing basis since 2007, including during the DNNP EA process, throughout the site preparation licensing process, and on OPG's current application for a licence to construct. CNSC staff also reported that it has Terms of Reference in place for long-term engagement with several of the identified Indigenous Nations and communities, including with HFN, CLFN, MSIFN, MNO and SON.

322. CNSC staff submitted that, in May 2022, it notified the identified Indigenous Nations and communities that OPG was expected to submit a licence to construct application for the DNNP. Following May 2022, CNSC staff continued its consultation and engagement activities with the identified Indigenous Nations and communities including:

- meetings and phone calls
- email correspondence
- conducting workshops
- collaborating on issues tracking tables
- striving to reach consensus on issued raised
- supporting and encouraging participation in the hearing process
- providing funding through the CNSC's Participant Funding Program and Indigenous and Stakeholder Capacity Fund
- providing information, consulting, and engaging on CNSC staff's technical review and assessment of OPG's licence to construct application

CNSC staff provided detailed information on its consultation and engagement activities in section 4, Appendix A, and Appendix B of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application* and in section 4, Appendix A, and Appendix C of CMD 24-H3.F.

323. In the Commission's April 2024 determination[226] on the applicability of the DNNP EA to the BWRX-300 reactor technology, the Commission directed CNSC staff to:

- support OPG's collaborative work on the following study and assessments:
  - rights impact assessments (RIA)
  - Indigenous Knowledge study
  - cumulative impacts assessment
- produce an up-to-date consultation report, to be filed on the record of the public hearing regarding the licence to construct application.

The Commission also stated its expectation for both CNSC staff and OPG to continue their respective consultation and engagement activities with all identified Indigenous Nations and communities, and their representatives, over the lifecycle of the DNNP and with respect to any subsequent applications to the Commission.

324. Regarding the commitment to produce an up-to-date consultation report, CNSC staff submitted *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application* alongside its CMD 24-H3. CNSC staff provided further updates on its consultation efforts in CMD 24-H3.B and CMD 24-H3.F.

325. CNSC staff conducted RIAs for OPG's LTC application which it included in section 4.3 of CMD 24-H3.F. CNSC staff acknowledged that the Michi Saagiig Nations disagreed with the RIA process and the adequacy of the final RIAs. In response, CNSC staff committed to collaborating with the Michi Saagiig Nations to update the RIAs at future DNNP licensing stages, as new information is gathered and provided by the Michi Saagiig Nations. CNSC staff also committed to ongoing collaboration with the Michi Saagiig Nations and OPG on supporting an Indigenous Knowledge study and a cumulative effects study. These commitments are detailed in section 3.6.5.1 of this *Record of Decision*.

326. In sections 4.1.1 and 4.3.6 of CMD 24-H3.F, CNSC staff proposed additional accommodations in response to the concerns raised by the Michi Saagiig Nations during CNSC staff's consultation activities. These accommodations pertain to both CNSC staff's general policies and to OPG's LTC application, specifically, and are detailed throughout section 3.6.5 of this *Record of Decision*. CNSC staff requested that the Commission direct CNSC staff to implement the commitments.

327. CNSC staff noted that the requirements and guidance for licensees regarding Indigenous engagement are set out in REGDOC-3.2.2, *Indigenous Engagement*.[227] While the Crown cannot delegate the duty to consult and is ultimately responsible for ensuring that the discharge of the duty to consult, and where appropriate, accommodate, is fulfilled, the Commission can consider engagement undertaken by OPG, including with respect to avoidance, mitigation or other measures adopted or proposed by OPG for potential accommodation purposes.[228]

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[226] *Record of Decision in the matter of the Determination of Applicability of Darlington New Nuclear Project Environmental Assessment to OPG's Chosen Reactor Technology*, CNSC, April 19, 2024.
[227] REGDOC-3.2.2, *Indigenous Engagement*, Version 1.1, CNSC, August 2019.
[228] *Notice of Public Hearing 2024-H-03*, CNSC, June 27, 2024.

3.6.2 Indigenous Engagement by OPG

328. The Commission examined the information submitted by OPG regarding its ongoing engagement with Indigenous Nations and communities near the proposed DNNP site. OPG provided this information in section 5.4 of its application, section 5.3 of CMD 24-H3.1, in CMD 24-H3.1A, section 5.0 of CMD 24-H3.1C, and orally at the hearing. OPG noted that it engaged with the local rights holders of the Williams Treaties First Nations, including:

- Alderville First Nation
- Curve Lake First Nation
- Hiawatha First Nation
- Mississaugas of Scugog Island First Nation
- Chippewas of Beausoleil First Nation
- Chippewas of Georgina Island First Nation
- Chippewas of Rama First Nation

OPG also noted that it engaged with Indigenous Nations and communities that had expressed interest in the DNNP, including:

- Huron-Wendat Nation
- Kawartha Nishnawbe
- Métis Nation of Ontario Region 8
- Mohawks of the Bay of Quinte
- Saugeen Ojibway Nation
- Six Nations of the Grand River

329. In section 5.3 of CMD 24-H3.1, OPG submitted that it had engaged with the local rights holders on small modular reactor development since 2018, in accordance with REGDOC-3.2.2. OPG submitted that its engagement activities included:

- regular virtual and in-person meetings
- newsletters
- project permitting reviews and reviews of project activities which may impact Aboriginal and/or treaty Rights
- ongoing discussions on environmental impacts and monitoring
- community visits and meetings with the leadership of Indigenous Nations and Communities

330. In its DNNP Indigenous Engagement Reports, provided in CMD 24-H3.1 and CMD 24-H3.1A, OPG detailed its commitments based on the issues heard through OPG's engagement activities, including:

- funding an Indigenous Knowledge study
- developing an environmental monitoring augmentation plan to apply an Indigenous lens to existing monitoring activities

- planning and conducting aquatic offsetting and terrestrial restoration in collaboration with the Michi Saagiig Nations, including quarterly meetings to undertake offsetting and restoration planning, and the establishment of beneficial action areas on the DNNP site
- engaging with the Michi Saagiig Nations regarding permits and approvals tied to activities potentially impacting Aboriginal and/or treaty rights, including monthly meetings to discuss permitting requirements
- including Indigenous ceremony in the Project
- establishing an environment table and a waste table to share knowledge between OPG and the Michi Saagiig Nations on these topics of specific interest
- requiring Indigenous training for all DNNP staff with an emphasis on WTFN and the 2018 Settlement Agreement

The Commission anticipates that OPG commitments in this regard will evolve and develop as its relationship with the WTFN grows and knowledge from studies and interactions come forward. The Commission expects to see this evolution and looks forward to hearing of it.

331. In section 2.0 of CMD 24-H3.1A, OPG submitted that it had entered into relationship framework agreements with AFN, CLFN, HFN, and MSIFN. The framework agreements allow for dedicated time and capacity funding to support regular engagement on OPG's operations.

332. In the Commission's April 2024 determination on the applicability of the DNNP EA to the BWRX-300 reactor technology, the Commission stated its expectation for OPG to engage and collaborate with interested Williams Treaties First Nations regarding RIAs, an Indigenous Knowledge study, a cumulative impacts assessment, and the EA follow-up and monitoring program. The Commission also outlined its expectations for OPG regarding reporting on its engagement activities.

333. In section 5.1 of CMD 24-H3.1C, OPG provided updated information on its ongoing collaborative efforts with the rights-holding Michi Saagiig Nations of the Williams Treaties First Nations. These efforts include progress towards an Indigenous Knowledge study that would be Indigenous-led and funded by OPG. OPG reported that the Indigenous Knowledge study would run parallel to DNNP project phases as part of OPG's long-term relationship with the Michi Saagiig Nations. The study would encompass and inform the following elements:

- RIA
- cumulative effects study
- enhanced environmental monitoring (EA follow-up) to bridge the 2009 EA to today's standards
- aquatic offsetting and terrestrial restoration planning and execution

334. During its oral presentation at Part 2 of the hearing (CMD 24-H3.1D), OPG updated the Commission on OPG's recent engagement activities. Such activities included engagement with the Williams Treaties First Nations on provincial and federal permits for the DNNP, on-site seed collection, and hosting workshops to identify appropriate areas for terrestrial and aquatic offsetting. OPG also informed the Commission that it

had agreed to two letters of intent with the Michi Saagiig Nations.[229] The first letter of intent is specific to the DNNP and the other relates to the broader relationship between the Michi Saagiig Nations and OPG.

335. In section 4.4 of CMD 24-H3.F, CNSC staff noted that OPG had conducted engagement activities with Indigenous Nations and communities in accordance with REGDOC-3.2.2. CNSC staff also noted that OPG had made a number of commitments to address the issues and requests raised by the Michi Saagiig Nations, as described in paragraph 330 above. CNSC staff have proposed to monitor OPG's engagement activities, and implementation of all regulatory commitments outlined in the draft LCH, under site-specific licence condition 15.4. Licence condition 15.4 is discussed further in section 3.8.2 of this *Record of Decision*.

3.6.3 Submissions by Indigenous Nations and Communities

336. Six Indigenous Nations and communities submitted written or oral interventions on this matter:

- The four Michi Saagiig Nations of the Williams Treaties First Nations:
  - Alderville First Nation (CMD 24-H3.62, CMD 24-H3.62A)
  - Curve Lake First Nation (CMD 24-H3.83, CMD 24-H3.83A)
  - Hiawatha First Nation (CMD 24-H3.85, CMD 24-H3.85A)
  - Mississaugas of Scugog Island First Nation (CMD 24-H3.81, CMD 24-H3.81A)
- Saugeen Ojibway Nation (CMD 24-H3.82)
- Métis Nation of Ontario, Region 8 (CMD 24-H3.57)

3.6.3.1 Submissions by the Michi Saagiig Nations of the Williams Treaties First Nations

337. In their individual written interventions and joint oral intervention, the four Michi Saagiig Nations shared their views regarding the DNNP. The additional issues independently raised by each of the four Michi Saagiig Nations are discussed in the relevant subsections below. Their common outstanding issues include:

- CNSC staff's consultation activities have not upheld the UNDRIP or the *2023-2028 UNDA Action Plan*[230] (*UNDA Action Plan*), and have treated the Michi Saagiig Nations as stakeholders instead of rights holders
- OPG's accountability to its engagement commitments
- an Indigenous Knowledge study and a cumulative effects study have not yet been completed
- CNSC staff did not co-develop the RIA process with the Michi Saagiig Nations, the process was developed from a Western perspective and imposed inappropriate timelines on the Michi Saagiig Nations

[229] Transcript, January 8, 2025, page 29.
[230] *The United Nations Declaration on the Rights of Indigenous Peoples Act Action Plan*, Department of Justice Canada, 2023.

- the phased or "piecemeal" approach to licensing the DNNP has prevented the Michi Saagiig Nations from obtaining a holistic view of the Project and its potential impact on their rights
- the Lake Ontario lakebed at the Darlington Nuclear site is unceded territory and any construction activities that may impact it require the consent of the Williams Treaties First Nations
- OPG's detailed plans for the management of radioactive waste that would be produced from the future operation of the DNNP should have been included in OPG's licence to construct application
- the consent of the Williams Treaties First Nations is required regarding the management of future radioactive waste and the DNNP site
- tight timelines to apply for and receive participant funding are not conducive to securing appropriate support and meeting CNSC process deadlines

The Commission's consideration of these issues is discussed in section 3.6.5 of this *Record of Decision*.

338. In their oral presentation, the Michi Saagiig Nations clarified that they "support [the] clean energy objectives of the federal government and the government of Ontario, but require the implementation of those objectives, including the CNSC's review of the DNNP licence processes, to be fully consistent with Canada's adoption of the UNDRIP, including the action plan which outlines the commitment of the federal government and its ministries and agencies to respect the territorial rights of Indigenous Peoples and to seek their free, prior, and fully informed consent in decisions that affect them, their communities, and territories. And the findings of the Truth and Reconciliation Commission of Canada with respect to the lasting impacts of residential school systems on First Nations Peoples and families."[231]

339. In their joint oral intervention, the Michi Saagiig Nations made the following requests to the Commission specific to OPG's application for a licence to construct:

- "we request that rights-holding First Nation perspectives be fully integrated into the consultation, review, and decision-making processes for the DNNP and future nuclear projects. For certain aspects, our consent is also required"
- "we request that the CNSC adopt a model similar to the Indigenous Advisory Committee and Monitor Program established by the Canadian Energy Regulator under the Ministry of Natural Resources Canada to fulfill its legal obligation for meaningful consultation and consent"
- "we request that the Commission order the establishment of regulatory holdpoints with an enforcement mechanism to sures that OPG fulfills its consultation obligations and uphold the intent of the negotiated LOIs"

The Michi Saagiig Nations also reiterated accommodation requests raised during the January 2024 hearing on the applicability of the DNNP EA to the BWRX-300 technology. The Michi Saagiig Nations requested for the Commission to require the following accommodations:

[231] Transcript, January 8, 2025, page 147.

- "ensure OPG works collaboratively with MSIFN, HFN, CLFN, and AFN to understand and address community concerns regarding nuclear risks and nuclear waste management:
    - Commit to meeting with interested Leadership to review and present a comparison of international best practices for the management and storage of used nuclear fuel with the current practices at the Darlington Site"
- "ensure OPG engages and consults with MSIFN, HFN, CLFN, and AFN on other Federal and Provincial permits and approvals that have been identified as of interest to our Nations"
- "require OPG to work collaboratively with MSIFN, HFN, CLFN, and AFN to develop and undertake
    - a Comprehensive Gap Analysis
    - a Cumulative Effects Assessment
    - a First Nation-led Rights Impact Assessment that, at a minimum, is informed by a Gap Analysis, Regional Indigenous Knowledge Study, and Cumulative Effects Assessment"
- "require OPG to work collaboratively with MSIFN, HFN, CLFN, and AFN tp develop, implement, and participate in:
    - an Environmental Monitoring Plan or Program for the DNNP"
    - an Overall EA Follow Up Program
- "require CNSC and OPG to fund a Regional Indigenous Knowledge Study"
- "require OPG to establish a plan/program for offsite restoration (aquatic and terrestrial) to offset impacts by the projects and to protect and enhance lands and waters important to MSIFN, HFN, CLFN, AFN – which would be supported by a Restoration Fund"

340. In their joint oral presentation, the Michi Saagiig Nations revised their request regarding establishing regulatory hold points for the consideration of impacts to Indigenous rights. Instead of requesting hold points, the four Michi Saagiig Nations requested that two new compliance verification criteria be added to the proposed LTC LCH under licence condition 15.4, noting that this would "better serve our goal of ongoing engagement and relationship-building between the Nations and OPG throughout the licensing period."[232] On January 8, 2025, the Michi Saagiig Nations submitted a letter[233] to the Commission detailing their proposed compliance verification criteria language, which they had drafted in collaboration with OPG. This request is discussed further in section 3.8.2 of this *Record of Decision*.

Mississaugas of Scugog Island First Nation

341. In its written and oral intervention, MSIFN submitted its outstanding issues regarding

[232] Transcript, January 8, 2025, pages 164-166.
[233] *Supplementary Information in consideration of Ontario Power Generation's Licence to Construct application for one BWRX-300 reactor at the Darlington New Nuclear Project Site*, Chief T. Simpson, Chief K. Knott, Chief L. Carr, and Chief K. LaRocca, January 8, 2025.

the DNNP, including:

- DNNP will result in "undeniably new"[234] impacts to MSIFN's Aboriginal and Treaty rights
- an impact assessment under the IAA should have been completed for the DNNP and that "the DNNP process has not provided the Nations with decision-making authority, despite that requirement existing for new projects under current IAA legislation."[235]
- procedural concerns regarding the CNSC's confidentiality process and posting of hearing documentation on the CNSC website
- CNSC processes "not respecting MSIFN as a government of an Indigenous peoples and community with legitimate responsibilities to protect its member and internal processes requiring it to share information with its members" and "not providing adequate notice, specifically in providing MSIFN with adequate time to review and consider all the [hearing] materials"

In its written intervention, MSIFN submitted that it was prepared to provide its consent for OPG's LTC application, on the basis of "progress toward binding agreements with OPG, with the condition of regulatory hold points prior the envisioned licence to operate (LTO) decision."

342. In its written intervention MSIFN made the following additional requests to the Commission:

- "CNSC, OPG and MSIFN [to] work together to develop a process to properly address [MSIFN's] concerns"
- "CNSC Staff to include MSIFN representation in the Review and Verification process to be implemented by the CNSC to confirm compliance with its decisions and orders in this hearing"
- "in conjunction with Indigenous Nations,
  (i) include the continuation of the RIA process as part of the review and verification process and
  (ii) the development of a better RIA guidance document for future applications"

and requested that the Commission commit to the following:

- "CNSC undertaking a full strategic review, alongside Indigenous Nations, of the CNSC's regulatory framework for Indigenous engagement to identify and fill regulatory gaps and updates to the CNSC REGDOC 3.2.2 to reflect UNDRIP and FPIC"
- "including a provision for the CNSC to seek MSIFN's consent for the DNNP and the LTC decision, and the envisioned LTO decision"

[234] Transcript, January 8, 2025, page 161.
[235] Transcript, January 8, 2025, page 165.

Curve Lake First Nation

343. In its written and oral intervention CLFN outlined its outstanding issues regarding the DNNP, including:

- "the programs and processes at the CNSC need to evolve to ensure they create a space for meaningful consultation"
- "DNNP will result in continued and additional impacts to the Inherent, Aboriginal and Treaty Rights of the Michi Saagiig Anishnaabeg, including, but not limited to impacts to fishing, hunting, and harvesting, impacts to spiritual landscapes, and impacts to species and places of cultural significance."
- consultation and engagement activities occur "under the rules and timelines dictated by the proponents and by regulators. This sets up a tone for the relationship that is one-sided."[236]

344. In its written intervention CLFN made the following additional requests to the Commission:

- "CLFN Rights, values, culture and spirituality should not be simply documented. Rather, these need to be integrated into the consultation, review and decision-making process throughout the entirety of the DNNP and future nuclear projects. This should occur through meaningful two-way dialogue and long-term accountability."
- 13 specific requests with the intention of ensuring that the "requests, obligations, and commitments" that came from the Commission's April 2024 determination on the applicability of the DNNP EA to the BWRX-300 reactor technology are afforded the "time and space to be planned and implemented"

Hiawatha First Nation

345. In its oral intervention HFN described its outstanding issues regarding the DNNP and CNSC staff's approach to consultation, including:

- "[the DNNP] limits the exercise of preexisting inherent Treaty and aboriginal rights of the Michi Saagiig, Anishinaabeg, and Williams Treaty's First Nations… We are currently unable to use the lands and waters at the Darlington site, not by choice, but because it is inaccessible to us and has been under government and OPG's control for more than 50 years."[237]
- "the current approach does not work. No longer can the Crown dictate the process for assessing impacts on our rights. No longer can the Crown be the judge of what it considers adequate consultation. No longer can the crown tell us what our rights are."[238]

[236] Transcript, January 8, 2025, page 143.
[237] Transcript, January 8, 2025, page 133.
[238] Transcript, January 8, 2025, page 134.

Alderville First Nation

346. In its oral intervention AFN described its specific outstanding issues regarding the DNNP, including:

- AFN has "particular concerns regarding the CNSC baseline used to assess potential impacts on the environment and on Aboriginal treaty rights, their approach to cumulative impact assessments, legacy impacts, and potential waste management facilities related to the DNNP"[239]
- "current CNSC processes are silent with regard to the directives of [the UNDRIP]."[240]
- "it is absolutely imperative that [the Michi Saaggiig Nations] are fully engaged in, and actively participating in, a meaningful consultation process with the Crown so that we may collaboratively arrive at the appropriate accommodations to achieve free, prior and informed consent of our citizens and communities."[241]

Hearing Discussion

347. The Commission asked CNSC staff for additional information on its proposed accommodation measures with respect to the Michi Saagiig Nations. CNSC staff highlighted two of its proposed accommodations; licence condition 15.4 and a collaborative working group with OPG, the Michi Saagiig Nations, and CNSC staff. CNSC staff stated that all of its proposed accommodations were the result of ongoing dialogue with the Michi Saagiig Nations to gain an understanding of their key outstanding issues regarding OPG's LTC application.[242]

348. The Commission asked the Michi Saagiig Nations for their views on the accommodation measures proposed by CNSC staff. A representative from CLFN acknowledged that the accommodations were the work of months of dialogue between the Michi Saagiig Nations, OPG, and CNSC staff. However, the CLFN representative stated that the Michi Saagiig Nations were still of the view that the compliance verification criteria for licence condition 15.4 should be stronger, as detailed in their January 8, 2025 letter.[243] The Chief of MSIFN also voiced concern that the proposed accommodation measures do not provide the Michi Saagiig Nations with any authority for decision-making or giving consent.[244]

349. Regarding proposed licence condition 15.4, CNSC staff noted that the licence condition would provide a regulatory tool to hold OPG accountable to its commitments made during engagement and during the hearing. CNSC staff also noted its commitment to continue to work with the Michi Saagiig Nations regarding the compliance verification criteria for licence condition 15.4.[245] Licence condition 15.4 and the compliance verification criteria under it are discussed further in section 3.8.2 of this *Record of Decision*.

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[239] Transcript, January 8, 2025, page 187.
[240] Transcript, January 8, 2025, page 187.
[241] Transcript, January 8, 2025, page 203.
[242] Transcript, January 8, 2025, pages 217-219.
[243] Transcript, January 8, 2025, pages 228-229.
[244] Transcript, January 8, 2025, page 219.
[245] Transcript, January 8, 2025, pages 217-219.

350. Asked to comment on how CNSC staff addressed the Michi Saagiig Nations' submission on the issue of decision-making authority, CNSC staff stated that "the intent [of the working group], is to have a partnership approach. The Nations here are our partners, we've seen them as partners for years and really want to continue to build that strong collaborative relationship together to ensure that the decision making and what we're recommending to the Commission is done collaboratively." CNSC staff noted that it would be working with the Michi Saagiig Nations to establish Terms of Reference for the working group.[246]

351. Regarding the accommodations proposed by OPG, OPG representatives provided the Commission with updates on the status of its key commitments and accommodations with respect to the Michi Saagiig First Nations, including an Indigenous Knowledge study, cumulative effects study, environmental augmentation plan, international peer review of best practices for waste management, and engagement on offsetting and restoration at the Darlington Nuclear site. [247]

352. Asked about the status of the Indigenous Knowledge study and cumulative effects study, an OPG representative said that the WTFN had hired a consultant to work on the governance structure for the Indigenous Knowledge study. The OPG representative reiterated OPG's commitment to financially support the Indigenous-led study and clarified that the study will not be DNNP-specific. OPG has proposed a workshop with the WTFN in 2025 to better understand how the Indigenous Knowledge will be gathered, the timeline and budget for the study, and how it will impact a cumulative effects study, the RIAs, and an environmental monitoring augmentation plan.[248]

353. The Commission asked for additional information on the international peer review of best practices for waste management. An OPG representative explained that MSIFN had requested the review, with the goal of determining how independent experts would consider OPG in relation to industry peers regarding the safe interim storage of used fuel. OPG provided funding and MSIFN selected the third party which conducted the review. The review was done in September 2024 and it found that OPG's current and planned practices meet or exceed industry best practices.[249]

354. With respect to the adequacy of consultation and engagement efforts, CNSC staff informed the Commission that CNSC staff's evolving approach to consultation is based on the legal requirement on the Crown, best practices, CNSC policies, and feedback from Indigenous Nations and communities. CNSC staff said that it approaches consultation in "an open, transparent, flexible and honourable way, and [CNSC staff] truly want to get to the understanding of what the concerns are and how we can find workable solutions. And what we're looking for is that two-way dialogue"[250] An OPG representative informed the Commission on how OPG had engaged Indigenous Nations and communities to incorporate Indigenous Knowledge into the DNNP project in areas

[246] Transcript, January 8, 2025, pages 221-222.
[247] Transcript, January 8, 2025, pages 223-227.
[248] Transcript, January 14, 2025, pages 165-167.
[249] Transcript, January 8, 2025, pages 225-226.
[250] Transcript, January 8, 2025, pages 234-239.

such as terrestrial restoration planning and aquatic offsetting.[251]

355. The Chief of MSIFN highlighted what the Michi Saagiig Nations view as shortcomings in the CNSC's approach to consultation on this matter. Regarding the application of the UNDRIP and the UNDA to CNSC staff's consultation approach, the MSIFN representative noted that REGDOC-3.2.2 does not mention the UNDRIP and stated that "because there is zero mention of [the UNDRIP], how can they abide and follow it -- if there's zero mention of it in what is guiding the work?"[252] The MSIFN representative also stated that "It's troubling that the CNSC has chosen not to apply the IAA consultation structure to the DNNP project simply because the 2009 EA is deemed sufficient for the licence to construct."[253]

356. Noting that the Michi Saagiig Nations found the RIA process inadequate, the Commission asked CNSC staff to provide additional information on its path forward for the RIAs. CNSC staff stated that it is committed to updating the RIAs for potential future DNNP licensing phases. These updated RIAs would include any relevant information that comes out of the broader Indigenous Knowledge and cumulative effects studies that the Michi Saagiig Nations will be conducting with support from OPG and the CNSC.[254] CNSC staff also noted that its approach to RIAs is based on best practices set by the IAA.[255]

357. The Commission asked for additional information on the activities being undertaken to help build knowledge of the nuclear sector in the Michi Saagiig Nations' communities. CNSC staff stated that it has a mandate to disseminate objective scientific, technical, and regulatory information to the public and Indigenous Nations and communities. CNSC staff informed the Commission that it disseminates this information through many methods including its website, community information sessions, workshops, and facility tours. CNSC staff also provide support to help facilitate learning through the CNSC's Indigenous and Stakeholder Capacity Fund.[256]

358. On the topic of community education, an OPG representative provided information on OPG's "Generation for Generations" program that it is rolling out in 2025. The OPG representative explained that this program would be used to enable Indigenous Nations and communities and the public to better understand Ontario's electricity industry including renewable generation and nuclear, and nuclear regulation.[257]

359. The Chiefs of AFN, HFN and MSIFN discussed the responsibility that they have to make the right decisions on behalf of their community members and their need to have enough information on nuclear projects to ensure that they can make informed decisions. The Chief of HFN highlighted the importance of plain language and direct communications and noted that not all community members would access online learning, "They're not going to go on the website and go through a program. They're

[251] Transcript, January 8, 2025, pages 28-29.
[252] Transcript, January 8, 2025, page 160.
[253] Transcript, January 8, 2025, page 239.
[254] Transcript, January 14, 2025, pages 190-195.
[255] Transcript, January 14, 2025, pages 199-200.
[256] Transcript, January 8, 2025, pages 252-254.
[257] Transcript, January 8, 2025, pages 254-255.

not going to just pick up a booklet and read it. We are visual. We are oral. We learn that way."[258]

3.6.3.2 Submissions by Saugeen Ojibway Nation

360. In its written and oral intervention (CMD 24-H3.82), SON outlined its outstanding issues related to OPG's LTC application, including:

- OPG's plans to manage radioactive waste that would be produced during the licence to operate phase
- the possibility of future radioactive waste being stored on SON territory without SON consent
- narrowing the scope of the duty to consult due to the phased approach to the DNNP licensing
- CNSC staff's approach to consultation and classification of SON as an "interested" Nation rather than a "potentially impacted" Nation
- application of the UNDRIP and FPIC to the CNSC licensing process
- upholding the commitments made during the DNNP EA process, particularly JRP recommendations #52 and #53

361. In its written intervention, SON also requested that licence condition 11.1 in the proposed licence to construct be revised from the language proposed by CNSC staff in Part 2 of CMD 24-H3 to include language specific to the storage of radioactive waste throughout the DNNP lifecycle. SON's request, and CNSC staff's response, regarding licence condition 11.1 are discussed further in section 3.8.2 of this *Record of Decision*.

362. In CMD 24-H3.1F, OPG submitted a response to SON's concerns regarding the storage of future DNNP radioactive waste on SON territory. OPG stated that:

> "Consistent with the accepted Environmental Assessment, the two options for the storage of the DNNP [low and intermediate-level radioactive waste] L&ILW were:
>
> - Construction of on-site licensed interim storage structures at Darlington; and
> - Off-site transportation to a licensed facility.
>
> Consistent with the Environmental Assessment and, after consideration of both options, OPG is not actively pursuing the option of interim storage of L&ILW generated by the project at OPG's Western Waste Management Facility (WWMF) located within the traditional territory of the Saugeen Ojibway Nation (SON)."

In section 4.2.5 of CMD 24-H3.F, CNSC staff acknowledged that OPG had not submitted an application for a waste management facility for the DNNP. CNSC staff

[258] Transcript, January 8, 2025, page 257.

submitted that it would continue to engage and share information with SON regarding the DNNP and waste management.

Hearing Discussion

363. Noting the phased approach to licensing, and that no radioactive waste would be produced under a licence to construct, the Commission asked OPG to comment on its plans for the storage of radioactive waste that would be produced during the licence to operate phase of the Project, should that materialize. An OPG representative stated that OPG intends to submit an application for a licence amendment in 2026 related to the interim storage of low- and intermediate-level DNNP radioactive waste on the Darlington Nuclear site. Regarding the interim storage of used fuel, the OPG representative explained that used fuel would be stored in the DNNP's used fuel pools before being moved to dry storage containers which would be managed on site.[259]

364. In its written intervention and oral intervention (CMD 24-H3.65, CMD 24-H3.65A) the Nuclear Waste Management Organization (NWMO) reported that it is responsible for the long-term management of Canada's used nuclear fuel, in accordance with the *Nuclear Fuel Waste Act*.[260] In 2023, following the federal government's acceptance of the *Integrated Strategy for Radioactive Waste*,[261] the NWMO was also given the responsibility for the long-term management of Canada's intermediate-level and non-fuel high-level radioactive waste.

365. The NWMO's current plan for Canada's used CANDU fuel is a deep geological repository (DGR) to be built near Ignace, Ontario, outside of SON's traditional territory. The NWMO reported that this DGR would be adaptable to the introduction of new technologies such as BWRX-300 used fuel, should the host community be willing to accept it. For the long-term management of intermediate and non-fuel high-level waste, the NWMO is proposing a second DGR for which it plans to begin a site selection process in 2028. The NWMO reported that it is also exploring the option to include used fuel from the DNNP in this second DGR.

366. Regarding DNNP waste minimization and volume reduction, an OPG representative stated that OPG will finalize its strategy for waste volume reduction for the DNNP at the licence to operate stage. The OPG representative stated that any volume reduction activities that would take place at the WWMF[262] would be subject to a separate licensing process. OPG is also considering other options to conduct waste volume reduction activities outside of SON territory. The OPG representative stated that OPG will continue to engage with Indigenous Nations and communities, including SON, as it finalizes its strategy.[263]

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[259] Transcript, January 9, 2025, page 176.
[260] S.C. 2002, c. 23.
[261] *Integrated Strategy for Radioactive Waste*, NWMO, June 2023.
[262] The Western Waste Management Facility (WWMF) is responsible for the safe handling, management and interim storage of low- and intermediate-level radioactive waste from the Bruce, Darlington, and Pickering NGS. The facility also provides interim storage for used nuclear fuel from the Bruce NGS. The WWMF is a located on the Bruce NGS site, in the municipality of Kincardine, Ontario and on the traditional territory of SON.
[263] Transcript, January 9, 2025, pages 179-180.

367. The topic of waste management, and what waste management requirements apply to the licence to construct phase, are further discussed in section 3.5.10 of this *Record of Decision*.

368. The Commission asked OPG for more information on its relationship with SON. An OPG representative explained that OPG has an ongoing collaboration agreement with SON which was first established in 2004. OPG is committed to continuing its collaboration with SON to address SON's outstanding concerns with the DNNP and to continue to share information on the Project. The OPG representative stated that OPG is also committed to developing a relationship framework with SON regarding the WWMF operations and future plans.[264]

369. The Commission asked CNSC staff to elaborate on its planned consultation and engagement activities, should the DNNP progress. CNSC staff explained that it would assess any future DNNP licence applications for any potential impacts on Aboriginal and/or treaty rights in line with the CNSC's duty to consult obligations. CNSC staff would then consult and engage all potentially impacted or interested Indigenous Nations and communities, including SON. CNSC staff also clarified that it does not only engage with Indigenous Nations and communities on licence applications, but also conducts engagement activities throughout the lifecycle of a facility with the goal of creating long-term relationships. CNSC staff noted that it has an existing Terms of Reference for long-term engagement with SON.[265]

370. Regarding SON's view that JRP recommendation 52 and 53 are not being upheld, licence condition 15.1 of the proposed licence to construct would require OPG to implement the mitigation measures and commitments made during the Joint Review Panel process, including the recommendations of the JRP report. The proposed licence conditions are discussed further in section 3.8.2 of this *Record of Decision*. CNSC staff stated that, as the project progresses to the licence to operate phase or to an amendment to the licence to construct, CNSC staff will consult with SON and ensure that appropriate compliance verification criteria remain in place to make sure that the JRP recommendations are completed.[266]

3.6.3.3 Submissions by Métis Nation of Ontario, Region 8

371. In its written intervention (CMD 24-H3.57), the Métis Nation of Ontario, Region 8 (MNO) submitted its outstanding issues regarding OPG's LTC application, including:

- potential impacts of DNNP construction activities on the Darlington NGS
- emergency preparedness and security of the DNNP site
- access to environmental monitoring data, including the predictive ERA

[264] Transcript, January 9, 2025, page 181.
[265] Transcript, January 9, 2025, pages 194-195.
[266] Transcript, January 9, 2025, page 185.

372. MNO clarified that it does not assert rights over the DNNP site and that the DNNP site is within the administrative boundaries of MNO Region 8 but outside of the Métis traditional territory in Ontario.

Hearing Discussion

373. During the hearing, the Commission considered MNO's submission, as well as those of other intervenors that raised similar concerns regarding emergency preparedness, environmental monitoring data, the proximity of the DNNP site to the Darlington NGS, and sought clarifications and further information from OPG and CNSC staff on these issues. These issues are addressed throughout section 3.5 of this *Record of Decision*.

3.6.4 Application of the UNDRIP, the UNDA and Reconciliation to this Matter

374. The UNDA came into force in Canada on June 21, 2021. Recent jurisprudence confirms that this legislation incorporates the UNDRIP into Canada's positive legal framework, such that the UNDRIP and its articles ought to be used to aid in the interpretation of the scope of section 35 rights and of the duty to consult and accommodate such rights.[267]

375. In section 1.2 of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application*, CNSC staff reported that the CNSC is committed to supporting the Government of Canada's whole-of government approach to implementing the UNDA, and the *UNDA Action Plan*, where it intersects with the CNSC's mandate. The principle of free, prior and informed consent (FPIC) is an integral aspect of the UNDA, which is reflected in the *UNDA Action Plan.* Measure #32 in the Shared Priorities chapter of the *UNDA Action Plan* commits to the development of guidance for engaging with Indigenous Peoples on natural resources projects to obtain FPIC. This measure is being led by NRCan with the support of various federal departments and agencies, and is currently in the planning phase.

376. In section 1.2 of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application*, CNSC staff noted that it used the following sources for guidance on FPIC:

- *Principles Respecting the Government of Canada's Relationship with Indigenous Peoples* principle #6:

  "The Government of Canada recognizes that meaningful engagement with Indigenous peoples aims to secure their free, prior, and informed consent when Canada proposes to take actions which impact them and their Rights, including their lands, territories and resources."

- *Backgrounder: United Nations Declaration on the Rights of Indigenous Peoples*

[267] *Kebaowek First Nation*, supra note 12 at paragraph 80.

Act: [268]

> "… FPIC describes processes that are free from manipulation or coercion, informed by adequate and timely information, and occur sufficiently prior to a decision so that Indigenous rights and interests can be incorporated or addressed effectively as part of the decision-making process - all as part of meaningfully aiming to secure the consent of affected Indigenous peoples.
>
> FPIC is about working together in partnership and respect. In many ways, it reflects the ideals behind the relationship with Indigenous peoples, by striving to achieve consensus as parties work together in good faith on decisions that impact Indigenous Rights and interests. Despite what some have suggested, it is not about having a veto over government decision making,"

377. In section 1.2.1 of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application,* CNSC staff reported that it encourages all nuclear proponents and licensees to pro-actively work with Indigenous Nations and communities who are potentially impacted by their projects to establish a mutually agreeable process to seek the potentially impacted Nation's FPIC. CNSC staff reported that it has had discussions with OPG regarding this matter and has encouraged OPG to work collaboratively with potential impacted Indigenous Nations and communities to address the concerns related to FPIC.

3.6.5 Analysis of Issues raised by Indigenous Nations and Communities

378. The Commission's consideration of the evidence on the record pertaining to the issues raised by Indigenous Nations and communities is discussed in the following section of this *Record of Decision*. The Commission thanks AFN, CLFN, HFN, MSIFN, SON and MNO for their participation in the hearing, and for helping to build a robust hearing record that informed the Commission's recommendations and decisions. The Commission values the participation, knowledge, information, and ceremony that the Indigenous Nations and communities brought to the hearing process.

3.6.5.1 Michi Saagiig Nations of the Williams Treaties First Nations

379. Through their written interventions and joint oral presentation, the Michi Saagiig Nations informed the Commission of many shared issues with OPG's LTC application. The Commission recognizes the individual rights of AFN, CLFN, HFN and MSIFN as independent Williams Treaties First Nations and the Crown's responsibility to discharge the duty to consult and, where appropriate, accommodate with respect to each individual Nation. Though discussed collectively, the Commission considered the shared issues discussed in this section as they apply to each of the four Michi Saagiig Nations.

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[268] Department of Justice Canada, *Backgrounder: United Nations Declaration on the Rights of Indigenous Peoples Act*, retrieved from the Department of Justice – Government of Canada website: https://www.justice.gc.ca/eng/declaration/about-apropos.html, January 23, 2025.

Application of the UNDRIP and the UNDA to CNSC staff's Consultation Approach

380. The Commission heard the Michi Saagiig Nations' view that the CNSC's consultation activities had not upheld the principles of the UNDRIP, the UNDA, and the *UNDA Action Plan*, including FPIC.

381. The Commission also acknowledged CNSC staff's assertion that CNSC staff had considered and incorporated the principles of the UNDRIP in its consultation process for OPG's LTC application by striving to achieve consensus on key issues and by encouraging Indigenous Nations and communities to express their views directly to the Commission regarding their process and position on their FPIC, as it related to the DNNP. [269] CNSC staff's efforts to achieve this consensus with the rights-holding WTFN are detailed in sections 4.1-4.4, Appendices A.1-A.3, and Appendix B of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application*, and in section 4, Appendices A.1-A.4, and Appendices C.1-C.5 of CMD 24-H3.F.

382. The Commission notes that, based on feedback from the Michi Saagiig Nations, CNSC staff proposed the following accommodations regarding the application of the UNDRIP and the UNDA:

> "CNSC staff are committed to having policy discussions with the Michi Saagiig Nations to solicit their feedback regarding the CNSC's approach to Consultation, engagement, regulatory framework, UNDA/UNDRIP implementation and phased licensing approach."[270]
>
> and
>
> "CNSC staff are committed to supporting Indigenous Nations and communities by either providing information about the appropriate contacts and channels for addressing broader concerns or coordinating meetings between the CNSC, the First Nations with other federal departments, as appropriate. For example, this could include discussions with Natural Resources Canada on UNDA policy and approach to addressing legacy issues"

383. The Commission further notes that, in section 1.2 of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application*, CNSC staff proposed the following accommodation:

> "The CNSC is committed to continuing to evolve [its] approaches to align with best practices and guidance that emerge through whole-of-government implementation of UNDA, and the *UNDA Action Plan*, including those that relate to FPIC. This includes initiating formal consultation on proposed updates and amendments in 2024-2025 to the CNSC's REGDOC-3.2.2: *Indigenous Engagement* to provide nuclear proponents and licensees with further guidance

[269] Section 4.1.1 of CMD 24-H3.F.
[270] Section 4.1.1 of CMD 24-H3.F.

and clarity with regards to how their approach to engagement and partnership with Indigenous Nations can align with UNDA"

384. The Commission recognizes that the UNDA means that the Commission's consideration of what the section 35 duty to consult and potentially accommodate may entail is to be done through the interpretive lens of the UNDRIP, including the standard of FPIC where applicable.[271] This is a case where Article 32(2) of the UNDRIP applies, meaning the goal of FPIC is the standard of consultation that is triggered.[272]

385. With consideration of the UNDRIP as an important contextual factor for consultation and for the evaluation of its sufficiency, the Commission notes that, over the course of the DNNP, there has been development in the law and adjustments to processes reflecting new understandings of rights. In this matter, the Commission finds the accommodations proposed by CNSC staff to be appropriate and to be sufficient. The Commission hears the clear intention of CNSC staff to continue to work with the Michi Saagiig Nations and Natural Resources Canada on the CNSC's implementation of UNDA policy. In addition, the steps forward toward mutual agreement will continue.

386. The Commission finds that accommodations were also made throughout the hearing process to foster an environment that encourages working together in partnership and respect, and to more fully incorporate the Michi Saagiig Nations' cultural traditions in line with the standard of FPIC consultation. Prior to Part 2 of the hearing, the Commission Registry met with a number of the rights-holding Michi Saagiig Nations, in their community, to receive feedback on how the hearing process could better incorporate their perspectives and be a more welcoming environment to share their views. Accommodations made in response to this feedback included:

- the hearing room was arranged so that hearing participants and the Commission could face each other and be seated on the same level, as closely to a circle-style as possible
- an Elder representing CLFN gave remarks to both open and close the hearing, including a welcoming and a closing song, an acknowledgement of the three orders of creation, and a reminder "to be mindful, to be present, to hold that level of respect, [and] to come with honesty and transparency in your communication styles"[273]
- ceremony including smudging and tobacco offerings were included in the opening of the hearing
- a box of earth from the DNNP site was present for the duration of the hearing, as explained by the Elder representing CLFN, "we believe it is a living being, Aki, the body of Earth Mother... and so we want her to hear our words. We

[271] As explained in *Kebaowek First Nation*, supra note 12, "FPIC is a right to a robust process... it is not a veto or a right to a particular outcome. Nor is FPIC absolute, as States may infringe UNDRIP rights in certain limited circumstances". The UNDRIP concept of FPIC requires an enhanced and more robust process to ensure consultation processes are tailored to consider Indigenous laws, knowledge and practices, and that the process is directed towards finding mutual agreement.

[272] Article 32(2) of the UNDRIP says, "States shall consult and cooperate in good faith the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources."

[273] Transcript, January 8, 2025, page 12.

want her to hear those good words"[274]
- additional time was provided for the presentation by the Michi Saagiig Nations
- the rights-holding Nations presented on the first day of part 2 of the hearing, before intervenors and non-rights holding Nations

The Commission heard positive feedback from the Michi Saagiig Nations and other hearing participants regarding the changes made to the hearing.

387. The Commission directs CNSC staff to implement the accommodations detailed in paragraphs 382 and 383 with respect to CNSC staff's consultation with the Michi Saagiig Nations on the implementation of the UNDA and the *UNDA Action Plan* to ensure that consultation proceeds at the FPIC standard.

Holding OPG Accountable to its Indigenous Engagement Commitments

388. The Commission heard the Michi Saagiig Nations' request for a regulatory mechanism that would require OPG to fulfill its engagement commitments. The Commission is of the view that proposed licence condition 15.4 would provide such a regulatory mechanism. Licence condition 15.4 was proposed by CNSC staff to accommodate the Michi Saagiig Nations' request and would require OPG to conduct ongoing Indigenous engagement specific to the DNNP throughout the licence period. The Commission acknowledges that the Michi Saagiig Nations have proposed revisions to the compliance verification criteria under this licence condition. The Commission's view on licence condition 15.4 and the accompanying compliance verification criteria is further detailed in section 3.8.2 of this *Record of Decision*.

389. The Commission notes that, in section 4.3.6 of CMD 24-H3.F, CNSC staff proposed the following accommodations related to the implementation of OPG's commitments:

> "CNSC staff are committed to collaboratively monitoring OPG's implementation of its proposed mitigation measures and commitments with the Michi Saagiig Nations. CNSC staff are committed to working with the Michi Saagiig Nations to verify the commitments and measures specific to them and report the results and relevant updates to the Commission as appropriate. CNSC staff propose that this is done through a formal working group between OPG, CNSC staff and the 4 Michi Saagiig Nations. CNSC staff propose having quarterly meetings to discuss progress being made on the commitments, any issues or concerns and whether the mitigation measures are working as expected or if adjustments need to be made to ensure that the Nations rights and interests continue to be protected, and the commitments are upheld. The details of the working group and its implementation and structure will be collaboratively developed with the Nations and OPG should the project proceed."

390. The Commission further notes that, in CMD 24-H3.G, CNSC staff proposed the following updated compliance verification criteria for licence condition 15.4 in response to the revisions requested by the Michi Saagiig Nations:

[274] Transcript, January 8, 2025, page 9.

"OPG shall:

- Participate in the proposed oversight and monitoring working group with CNSC staff and the Michi Saagiig Nations to collaborate on progress being made on CNSC and OPG's commitments to Michi Saagiig Nations. This may include discussions and engagement on issues or concerns raised by the Michi Saagiig Nations in relation to the implementation of OPG's and CNSC's commitments to ensure that the Nations' rights and interests continue to be protected, and the commitments are upheld. The details of the working group and its structure will be developed collaboratively between CNSC staff, the Michi Saagiig Nations and OPG. The working group would include collaboration between CNSC staff, the Michi Saagiig Nations and OPG on the contents of the annual reports to the Commission which would include an update on the implementation of CNSC and OPG commitments and engagement through the working group, in relation to the DNNP."

The Commission expects CNSC staff to verify OPG's participation and collaboration in the above noted working group as part of CNSC staff's compliance verification activities under licence condition 15.4.

391. The Commission is of the view that the working group proposed by CNSC staff would provide an additional mechanism for CNSC staff and the Michi Saagiig Nations to collaboratively monitor and share information on OPG's progress on its commitments.

392. The Commission directs CNSC staff to implement the accommodations detailed in paragraphs 389 and 390 with respect to the establishment of a working group to collaboratively monitor OPG's implementation of its commitments.

Completion of an Indigenous Knowledge Study and a Cumulative Effects Study

393. The Commission heard the Michi Saagiig Nations' request for an Indigenous Knowledge study and a cumulative effects study to gather more information on impacts to their rights and interests as it relates to the DNNP and other nuclear facilities in their territory.

394. The Commission heard a strong commitment from CNSC staff and OPG to support the Michi Saagiig Nations in the completion of an Indigenous Knowledge study and a cumulative effects study, including the provision of financial support. The Commission is of the view that licence condition 15.4 would provide a regulatory tool for CNSC staff to hold OPG accountable to its commitments on this matter.

395. OPG and CNSC staff are also required to abide by the Commission's existing directions regarding the Indigenous Knowledge and cumulative effects studies as outlined in the Commission's April 2024 determination on the applicability of the DNNP EA to the BWRX-300 reactor technology.

396. The Commission understands that the Michi Saagiig Nations have hired a consultant to

work on the governance structure for the Indigenous Knowledge study, and that this governance structure must be completed prior to commencement of the study.

397. The Commission notes that, in section 4.3.6 of CMD 24-H3.F, CNSC staff proposed the following accommodations related to the completion of the Indigenous Knowledge and cumulative effectives studies:

> "CNSC staff are committed to the ongoing collaboration with the Michi Saagiig Nations and OPG on supporting an Indigenous Knowledge study to gather more information and data regarding the Michi Saagiig Nations rights and interests as it relates to the DNNP and surrounding territory. This includes providing funding, informational, and other support to complete these studies as appropriate. CNSC staff have been informed that the Michi Saagiig Nations are working on a governance framework for the studies and that the work on the studies will not begin until after a framework is in place. CNSC staff are able to provide funding and support for the study when requested by the Michi Saagiig Nations."
>
> and
>
> "CNSC staff commit to supporting and ongoing collaboration with the Michi Saagiig Nations on completing a cumulative effects study, which could include a cumulative effect on rights analysis as it relates to the nuclear sector in their traditional and treaty territories."

398. The Commission further notes that, in CMD 24-H3.G, CNSC staff proposed updated compliance verification criteria for licence condition 15.4 in response to the revisions requested by the Michi Saagiig Nations, including:

> "The DNNP is located within the Williams Treaties territory. In order to support fulfilling the Duty to Consult, and where appropriate, accommodate, the licensee shall continue to collaborate and engage with 4 the Michi Saagiig Nations of the Williams Treaties First Nations on the specific commitments and accommodations made throughout the regulatory review process. This includes, but is not limited to:
>
> - Scoping the extent, timing and content of an Indigenous Knowledge Study.
> - Scoping the extent, timing and content of a Cumulative Effects Study."

399. The Commission directs CNSC staff and OPG to implement the accommodations detailed in paragraph 397 with respect to CNSC staff's support and collaboration on Indigenous Knowledge and cumulative effects studies with the Michi Saagiig Nations. The Commission also expects CNSC staff to verify OPG's completion of the measures detailed in paragraph 398 as part of CNSC staff's compliance verification activities under licence condition 15.4.

<u>Rights Impact Assessments</u>

400. The Commission heard the Michi Saagiig Nations' view that the scope, timelines, baseline, and process used by CNSC staff to develop the RIAs for OPG's LTC application were inadequate, and, specifically, "to ensure that the RIA is effective and the Crown properly fulfills its duty, CNSC staff should have collaborated with the Treaty Nations to co-develop the RIA framework, including time with the comprehensive needs of the RIA process itself. Instead, CNSC staff imposed their own reporting timelines, which are disconnected from the time that is required to conduct a genuine and thorough rights impact assessment."[275]

401. The Commission is of the view that CNSC staff made a good faith effort to collaborate with the Michi Saagiig Nations on the RIAs. The Commission notes that, in section 4.3.1.1 of CMD 24-H3.F, CNSC staff submitted that it had offered to conduct collaborative RIAs with the Michi Saagiig Nations regarding OPG's DNNP LTC application. CNSC staff had multiple discussions with CLFN, HFN, and MSIFN regarding the RIA approach between 2023 and 2024, as detailed in section 4 of *CNSC staff's Indigenous Consultation Report for the Darlington New Nuclear Project Licence to Construct Application* and in sections 4.2.1-4.2.3 and Appendix A of CMD 24-H3. CNSC staff proceeded with a narrative-based approach for the DNNP LTC RIA after it did not receive feedback from the Michi Saagiig Nations regarding their preferred approach to conducting the RIA assessment in advance of Part 2 of the Hearing.

402. The Commission acknowledges that CNSC staff asked the Michi Saagiig Nations whether they would prefer to explore the option of delaying the regulatory review process to provide more time for the Indigenous Knowledge and cumulative effects studies to be started, and to conduct the DNNP LTC application RIA collaboratively. CNSC staff reported that the Michi Saagiig Nations either indicated that they were not asking to delay the project at this time or that they were comfortable with the regulatory process proceeding in parallel with the studies.[276]

403. The Commission notes that, in section 4.3.6 of CMD 24-H3.F, CNSC staff proposed the following accommodation related to updating the DNNP LTC RIA for future phases of the DNNP:

> "CNSC staff are committed to collaborating with the Michi Saagiig Nations to update RIAs as new information is gathered and provided by both the Michi Saagiig Nations and OPG and to providing updates to the Commission at future phases of the regulatory review and licensing process for the DNNP, such as a potential Licence to Operate, should the project proceed"

404. The Commission further notes that, in section 4.1.1 of CMD 24-H3.F, CNSC staff proposed the following accommodation regarding a broader, territory-wide RIA:

> "CNSC staff are committed to supporting interested Michi Saagiig Nations in conducting a longer-term broader RIA covering all CNSC-regulated facilities in their territory, driven by the Nations and based on, but not limited to the Indigenous Knowledge study and cumulative effects assessment. CNSC staff view is that this would not be a project specific RIA and would take the form of

[275] Transcript, January 8, 2025, page 163.
[276] Section 4.3.5.6 of CMD 24-H3.F.

> a study and assessment of cumulative effects on the rights and interests of the Michi Saagiig Nations as it relates to the nuclear sector. The results of this study could inform future regulatory processes for nuclear projects and activities in their territory, should the First Nations wish to share and incorporate the information into project specific assessments in the future."

405. The Commission has heard a strong commitment from CNSC staff to collaborate with the Michi Saagiig Nations to both update the DNNP LTC RIA for future DNNP licensing phases, as new information becomes available, and to support the Michi Saagiig Nations in conducting a longer-term broader RIA covering all CNSC-regulated facilities in their territory. The Commission is satisfied that CNSC staff are committed to working with the Michi Saagiig Nations to develop a collaborative RIA process.

406. The Commission directs CNSC staff to implement the accommodations detailed in paragraphs 403 and 404 with respect to CNSC staff's support and collaboration with the Michi Saagiig Nations on the RIAs for future DNNP licensing stages, and on a territory-wide RIA.

Phased Approach to Licensing the DNNP

407. The Commission heard the Michi Saagiig Nations' view that the phased approach to licensing the DNNP prevented the Michi Saagiig Nations from obtaining a holistic view of the Project and its potential impact on their rights.

408. During the hearing, the Commission considered the Michi Saagiig Nations' submissions, as well as those of other intervenors that raised similar concerns regarding the phased approach to the DNNP and sought clarifications and further information from OPG and CNSC staff on this issue. The phased approach to licensing the DNNP is discussed in further detail in sections 3.1.1 and 3.4 of this *Record of Decision*.

409. The Commission is of the view that the phased approach to licensing the DNNP is appropriate and in line with the requirements of the NSCA, CINFR, and international best practices. The Commission notes that the impacts of the DNNP over its entire lifecycle were considered in the DNNP EA.

410. In spite of this, the Commission understands that the Michi Saagiig Nations disagree with the phased approach to licensing and are of the view that they do not have the information required to understand the holistic impacts of the Project on their rights and that this can impact the issue of their consent.

411. As discussed in section 3.6.5.1 of this *Record of Decision*, CNSC staff proposed the following accommodation in section 4.1.1 of CMD 24-H3.F which relates to the phased licensing approach:

> "CNSC staff are committed to having policy discussions with the Michi Saagiig Nations to solicit their feedback regarding the CNSC's approach to Consultation, engagement, regulatory framework, UNDA/UNDRIP implementation and phased licensing approach."

The Commission directed CNSC staff to implement this accommodation measure in section 3.6.5.1 of this *Record of Decision*. The Commission is also of the view that the completion of the Indigenous knowledge and cumulative effects studies, also described in section 3.6.5.1 of this *Record of Decision*, will allow the Michi Saagiig Nations to gather more information on impacts to their rights and interests as it relates to the DNNP. The Commission anticipates ongoing consultation as these studies are completed and anticipates the potential for more opportunities to incorporate Indigenous knowledge into the DNNP.

Permitting, Offsetting, and Jurisdiction of the Lakebed

412. The Commission heard the issue raised by the Michi Saagiig Nations regarding their unceded rights to the lakebed where OPG is proposing in-water construction activities for the DNNP. The Commission also heard requests from the Michi Saagiig Nations for OPG to engage with them regarding federal and provincial permits, and for OPG to establish a plan to offset the environmental impacts of the DNNP.

413. The Commission notes that, as described in section 4.3.5.6 of CMD 24-H3.F, CNSC staff contacted Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), regarding whether the Williams Treaties Settlement Agreement addressed specific claims to the lakebed. CIRNAC confirmed that the Williams Treaties Settlement Agreement did not address any potential claim of the Williams Treaties First Nations to lakebeds or water and any lakebed assertions. The Commission also understands that OPG is continuing discussions with the Michi Saagiig Nations and the Provincial Ministry of Natural Resources and Forestry to discuss different options to work to address the concerns regarding the potential purchase or use of an easement of the lakebed.

414. The Commission acknowledges the commitment from OPG to continue engagement with the Michi Saagiig Nations regarding federal and provincial permits for the DNNP. In section 5.1 of CMD 24-H3.1C, OPG reported that 18 permits were approved by federal and provincial regulators in 2024 and that each of those permits was discussed with the rights-holding Michi Saagiig Nations and adjusted based on their feedback. OPG has established a monthly meeting with the Michi Saagiig Nations regarding DNNP permitting requirements and has committed to continue to engage with the Michi Saagiig Nations on permitting at the Project progresses.[277]

415. The Commission recognizes that OPG has committed to ongoing discussions and planning regarding aquatic offsetting and terrestrial restoration in collaboration with the Michi Saagiig Nations and that OPG is working with the WTFN's on their recommendation for an instrument to protect the beneficial actions areas. OPG proposed that implementation of WTFN's recommendation may be achievable through a project agreement between OPG and the Michi Saagiig Nations.[278]

416. The Commission further notes that, in CMD 24-H3.G, CNSC staff proposed the following updated compliance verification criteria for licence condition 15.4:

[277] Section 2.0 of CMD 24-H3.1A.
[278] Section 2.0 of CMD 24-H3.1A.

> "The licensee shall file with the CNSC annually a report on the engagement activities specific to the DNNP it has undertaken with potentially impacted or interested Indigenous Nations and communities...
>
> Each report shall include, at a minimum, and for each Indigenous Nation and community engaged:
>
> - An update on the status of and engagement conducted related to the aquatic offsetting, terrestrial restoration, beneficial action areas and provincial authorizations related to the potential issuance of a land use easement for the Lake Ontario lake bed."

and

> "In addition, OPG shall:
>
> - Provide an update on the following in the above-described report to the CNSC:
>   - The status of mitigations contemplated, and progress made on a project agreement between OPG and the Michi Saagiig Nations in relation to the DNNP"

The Commission expects CNSC staff to verify OPG's completion of these accommodation measures as part of CNSC staff's compliance verification activities under licence condition 15.4.

417. The Commission does not have the authority to confirm, establish or deny the existence of Aboriginal and/or treaty rights as claimed or asserted by Indigenous Nations and communities. The Commission expects OPG to continue to work with the William Treaties First Nations to engage on the issue of the jurisdiction of the Lake Ontario lakebed and the potential issuance of a land use easement.

418. The Commission is satisfied that OPG and CNSC staff have proposed adequate accommodations to mitigate the Michi Saagiig Nations' concerns regarding DNNP permitting and offsetting. The Commission directs OPG to implement its commitments regarding its continued engagement with the Michi Saagiig Nations on permitting, aquatic offsetting, and terrestrial restoration measures.

Radioactive Waste Management

419. The Commission acknowledged the view of the Michi Saagiig Nations that OPG's plans for radioactive waste management had not been adequately considered in OPG's LTC application. The Commission also acknowledged the Michi Saagiig Nations' request for OPG to provide them with a comparison of international best practices for the management and storage of used nuclear fuel with the current practices at the Darlington Nuclear site.

420. The Commission notes that no radioactive waste would be generated or stored on the

DNNP site during the licence to construct phase and, as discussed in section 3.5.10 of this *Record of Decision*, the Commission is of the view that OPG has met the requirements for waste management for the LTC application. OPG has not applied for a waste management facility related to the DNNP. If such an application is received in the future, it would be subject to the CNSC's licensing process and consultation with Indigenous Nations and communities. The Commission further notes that the DNNP EA assessed the full life cycle of the DNNP, including radioactive waste management.

421. The Commission is of the view that OPG has sufficiently responded to the Michi Saagiig Nations' request for a comparison of international best practices regarding waste management. As discussed in section 3.6.3.1 of this *Record of Decision*, an OPG-funded international peer review of best practices for waste management was conducted in September 2024 by a third-party selected by MSIFN. The review found that OPG's current and planned practices meet or exceed industry best practices.

422. In CMD 24-H3.G, CNSC staff proposed updated compliance verification criteria for licence condition 15.4 in response to the request from the Michi Saagiig Nations, including:

> "The DNNP is located within the Williams Treaties territory. In order to support fulfilling the Duty to Consult, and where appropriate, accommodate, the licensee shall continue to collaborate and engage with the Michi Saagiig Nations of the Williams Treaties First Nations on the specific commitments and accommodations made throughout the regulatory review process. This includes, but is not limited to:
>
> - Ongoing review of international best practices for the management and storage of used nuclear fuel, in relation to the current practices at the Darlington site."

The Commission also expects CNSC staff to verify OPG's completion of the accommodation measure detailed above as part of CNSC staff's compliance verification activities under licence condition 15.4.

423. The Michi Saagiig Nations also asserted that the consent of the WTFN is required regarding the management of future radioactive waste and the DNNP site. The Commission expects CNSC staff to consult with the WTFN on future licensing phases of the DNNP to strive towards FPIC, in line with the requirements of the UNDA, regarding radioactive waste management.

Capacity Constraints and Participant Funding Timelines

424. The Commission acknowledged that the Michi Saagiig Nations have raised concerns regarding the timelines to apply for and receive participant funding for this hearing process, as well as the administrative burden that funding applications place on the Nations.

425. The Commission recognizes that participant funding was made available for this proceeding, as described in section 1 of this *Record of Decision*, and that additional

funding was provided through the CNSC's Indigenous and Stakeholder Capacity Fund for MSIFN and AFN to hire internal support staff. The Commission finds that CNSC staff showed flexibility in working with AFN to submit a funding application outside of the initial participant funding opportunity and that the Commission Registry showed flexibility by granting MSIFN an extension to submit their intervention following a delayed decision on MSIFN's additional funding request. The Commission also notes that OPG has entered into DNNP project capacity agreements with CLFN, HFN, and MSIFN.

426. The Commission acknowledges the challenges that the Michi Saagiig Nations face regarding limited capacity. The Commission is of the view that CNSC staff and OPG have made significant efforts to alleviate capacity constraints throughout the hearing process.

Involvement in Regulatory Oversight

427. The Commission heard the Michi Saagiig Nations' request to have the perspectives of the Michi Saagiig Nations integrated into the consultation, review, and decision-making processes for the DNNP and future nuclear projects. The Commission also heard the Michi Saagiig Nations' request that the CNSC form an Indigenous Advisory Committee and Monitor Program similar to the one established by the Canada Energy Regulator (CER).

428. Regarding future nuclear projects, the Commission notes that CNSC staff proposed the following accommodation in section 4.1.1 of CMD 24-H3.F:

> "CNSC staff are committed to continuing long-term engagement and collaboration with the Michi Saagiig Nations, through the existing terms of reference for long-term engagement, which could include creating a plan with the Michi Saagiig Nations to outline how they want to engage, collaborate and consult with the CNSC on future projects, policy discussions and work plans."

429. Regarding the DNNP specifically, the Commission notes that CNSC staff proposed the following accommodations in section 4.3.6 of CMD 24-H3.F:

> "CNSC staff are committed to continuing to work with the Michi Saagiig Nations to determine how they want the results of these studies [the Indigenous Knowledge and cumulative effects studies], when provided to CNSC and OPG, to be incorporated, considered and reflected in the CNSC's regulatory processes and ongoing oversight of the DNNP, should the project proceed. CNSC staff commit to adjusting the approach to oversight of the DNNP as new information is shared with regards to the Michi Saagiig Nations knowledge, land use, rights and interests. As outlined in the draft LCH this could include but is not limited to OPG incorporating the outcomes of these studies into its Environmental Monitoring and Environmental Assessment Follow-Up Plan. The knowledge and information could also help inform the CNSC's Independent Environmental Monitoring Program (IEMP) as well as help inform CNSC compliance and oversight activities for the DNNP. However, CNSC staff have not specified the exact timing, mechanisms or approach as this process needs to be driven by the

Michi Saagiig Nations and in collaboration with OPG."

and

"CNSC staff commit to collaborating with the Michi Saagiig Nations on the CNSC's Independent Environmental Monitoring Program in relation to the Darlington site, which would include the DNNP, should it proceed. This includes providing opportunities for the Michi Saagiig Nations to review and provide input into the sampling plans, participate in sampling and conduct ceremony and walk the land prior to conducting sampling. CNSC staff will work with the Michi Saagiig Nations to ensure that their land use, values and knowledge systems are reflected and considered in the CNSC's environmental sampling, as appropriate and where possible."

430. The Commission further notes that, in CMD 24-H3.G, CNSC staff proposed the following updated compliance verification criteria for licence condition 15.4:

"The DNNP is located within the Williams Treaties territory. In order to support fulfilling the Duty to Consult, and where appropriate, accommodate, the licensee shall continue to collaborate and engage with the Michi Saagiig Nations of the Williams Treaties First Nations on the specific commitments and accommodations made throughout the regulatory review process. This includes, but is not limited to:

- Scoping the extent, timing and content of an Environmental Monitoring Augmentation Program and participation in OPG's environmental monitoring."

431. The Commission is satisfied with the accommodations proposed by CNSC staff to involve the Michi Saagiig Nations in CNSC staff's regulatory review process and OPG's environmental monitoring. The Commission notes that CNSC staff have committed to adjusting its approach to oversight of the DNNP as new information is shared with regards to the Michi Saagiig Nations' knowledge, land use, rights and interests. The Commission is also of the view that the working group proposed by CNSC staff would provide an additional avenue for the Michi Saagiig Nations to participate in CNSC staff's regulatory oversight activities.

432. Regarding the Michi Saagiig Nations' request for an Indigenous Advisory Committee similar to that of the CER, the Commission notes that the *Canada Energy Regulator Act*[279] mandates the creation of such a committee and the same mandate does not apply to the NSCA. While the NSCA does authorize the Commission to "establish, and fix the terms of reference of, advisory, standing and other committees", the Commission is satisfied that the working group proposed by CNSC staff, along with the accommodations described above in paragraphs 428 to 430, would enhance the Michi Saagiig Nations' involvement in CNSC staff's oversight activities in a reasonable and responsive way.

[279] S.C. 2019, c. 28, s. 10.

433. The Commission directs CNSC staff to implement the accommodations detailed in paragraphs 428 and 429 with respect to the inclusion of the Michi Saagiig Nations, and their perspectives, in the CNSC's regulatory processes and oversight of OPG's activities. The Commission also expects CNSC staff to verify OPG's completion of the accommodation measure detailed in paragraph 430 as part of CNSC staff's compliance verification activities under licence condition 15.4.

3.6.5.2 Mississaugas of Scugog Island First Nation

434. The Commission acknowledges the issues raised by MSIFN regarding impacts of the DNNP on its treaty rights, the adequacy of the RIA process, MSIFN's lack of decision-making power, and MSIFN's involvement in future regulatory oversight activities. The Commission finds that these concerns have been addressed in section 3.6.5.1 of this *Record of Decision*, as they apply to the four Michi Saagiig Nations. The Commission notes that MSIFN's concern regarding the gap analysis and applicability of the IAA is addressed in section 3.2 of this *Record of Decision*. The additional issue raised by MSIFN is discussed below.

3.6.5.3 Curve Lake First Nation

435. The Commission acknowledges the issues raised by CLFN regarding impacts of the DNNP on its treaty rights, CNSC staff's approach to consultation, and the integration of Indigenous Knowledge into regulatory oversight and decision-making. The Commission finds that these concerns have been sufficiently addressed in section 3.6.5.1 of this *Record of Decision*, as they apply to the four Michi Saagiig Nations. The additional issue raised by CLFN is discussed below.

<u>Completion of Commitments made in Commission's 2024 Determination on the Applicability of the DNNP EA</u>

436. The Commission heard CLFN's request for there to be continued focus on the requests, obligations, and commitments that came out of the Commission's April 2024 determination on the applicability of the DNNP EA to the BWRX-300 reactor technology.

437. The Commission reiterates that the directions outlined in its April 2024 determination remain valid. The Commission expects CNSC staff and OPG to continue to fulfill the expectations and directions detailed in the Commission's April 2024 determination and to continue to engage with CLFN and the other Williams Treaties First Nations on those matters.

3.6.5.4 Hiawatha First Nation

438. The Commission acknowledges the issues raised by HFN regarding impacts of the DNNP on its treaty rights and CNSC staff's approach to consultation. The Commission finds that these concerns have been sufficiently addressed in section 3.6.5.1 of this

Record of Decision, as they apply to the four Michi Saagiig Nations.

3.6.5.5 Alderville First Nation

439. The Commission acknowledges the issues raised by AFN regarding the baseline used by CNSC staff to determine impact to treaty rights and the environment, CNSC staff's approach to consultation and CNSC staff's application of the UNDRIP, including FPIC. The Commission finds that these concerns have been sufficiently addressed in section 3.6.5.1 of this *Record of Decision*, as they apply to the four Michi Saagiig Nations.

3.6.5.6 Saugeen Ojibway Nation

440. The Commission heard the issues raised by SON regarding the sufficiency of OPG's radioactive waste management plans at the licence to construct phase, the phased approach to licensing the DNNP, and the application of the UNDRIP and FPIC to the CNSC's licensing process. The Commission is of the view that these concerns have been addressed in sections 3.5.10, 3.6.5.1, and 3.6.4 of this *Record of Decision*, respectively. The additional issues raised by SON are discussed below.

Storage of Radioactive Waste on SON Territory

441. The Commission recognizes that SON does not want radioactive waste from the DNNP to be transported to, or stored on, SON territory without their consent. The Commission understands that OPG is not actively pursuing the option of interim storage of low and intermediate level radioactive waste generated by the DNNP at OPG's WWMF in SON's traditional territory. The Commission expects OPG to continue to share information with SON regarding the DNNP and waste management.

442. As discussed further in section 3.8.2 of this *Record of Decision*, the Commission recognizes that, in CMD 24-H3.H, CNSC staff committed to add the following compliance verification criteria under licence condition 11.1 in the LCH:

> "Licensee shall honour the commitments made to CNSC and SON in the letter to the Commission Registry of November 13, 2024"

The Commission appreciates CNSC staff's planned modification to the compliance verification criteria under licence condition 11.1 and expects CNSC staff to continue engagement with the SON regarding the compliance verification criteria, as appropriate.

443. The Commission recognizes that OPG's strategy for waste minimization and volume reduction will not be finalized until the licence to operate phase. The Commission notes that any volume reduction activities that would take place at the WWMF would be subject to a separate licensing process and are outside of the scope for the Commission's decision for the current matter. Should the Commission receive a future application from OPG regarding waste management activities on SON territory, the

SON will be owed consultation on that application. The Commission expects OPG to continue to engage with SON on its waste strategy for the DNNP.

Implementation of JRP Recommendations #52 and #53

444. The Commission heard the issue raised by SON regarding the implementation of JRP recommendations #52 and #53 which require OPG to make provisions for on-site storage of all radioactive waste for the duration of the DNNP in the event that a suitable off-site solution for the long-term management for used fuel waste is not found. The Commission understands that SON is of the view that recommendations #52 and #53 should be implemented immediately, and not as part of a future licensing stage.

445. The Commission notes that proposed licence condition 15.1 would require OPG to continue to implement the mitigation measures and commitments made during the JRP process, including the applicable recommendations of the JRP report. The Commission also notes that completion of these actions is tracked in the *DNNP Commitments Report*.

446. Regarding recommendations #52 and #53 specifically, the Government of Canada accepted the intent of the recommendations to the extent that it is the responsibility of the waste owners to manage and fund the safe and secure operation of their own wastes, in accordance with the CNSC's regulatory requirements. These recommendations remain open and, should the Project proceed to the operations phase, OPG would be required to provide a robust plan for the storage of radioactive waste as part of its application for a licence to operate.

3.6.5.7 Métis Nation of Ontario, Region 8

447. The Commission has heard OPG's commitment to continued engagement with interested Indigenous Nations and communities throughout the lifecycle of the DNNP. The Commission expects OPG to continue its engagement with MNO to keep MNO informed on the DNNP and to provide clarity on MNOs outstanding questions regarding emergency preparedness, environmental monitoring data, and the proximity of the DNNP site to the Darlington NGS. The Commission notes that these topics are discussed throughout section 3.5 of this *Record of Decision*.

3.6.5.8 Reporting on Commitments and Accommodations

448. The completion of the commitments and accommodations proposed by OPG and CNSC staff is vital to the Crown's discharge of the duty to consult and, where appropriate, accommodate. As such, the Commission requires a mechanism to receive updates on progress being made on the commitments, ongoing engagement, and accommodation measures.

449. The Commission notes that, in CMD 24-H3, CNSC staff proposed the following compliance verification criteria for licence condition 15.4:

> "The licensee shall file with the CNSC annually a report on the engagement activities specific to the DNNP it has undertaken with potentially impacted or interested Indigenous Nations and communities… The licensee should also provide a copy of the report to each Indigenous Nation or community engaged in advance or at the same time it is filed with the CNSC."

450. The Commission directs CNSC staff to include an update on CNSC staff's commitments, ongoing engagement and accommodation measures, annually, either through an existing regulatory oversight report or through another reporting mechanism. Noting the following commitment made by CNSC staff in section 4.3.6 of CMD 24-H3.F,

> "CNSC staff commit to providing the most current information available related to the progress being made on CNSC staff's commitments and accommodation measures to the Michi Saagiig Nations for the DNNP in the annual update report to the Commission."

the Commission expects CNSC staff to provide the most current information available in its annual update.

451. The Commission acknowledges that challenges may arise with regards to the implementation of the commitments made by OPG and CNSC staff. To provide a pathway to resolve such issues, the Commission expects CNSC staff to implement an escalation pathway as part of the proposed working group, as proposed by CNSC staff in section 4.3.6 of CMD 24-H3.F:

> "CNSC staff propose that an escalation procedure is collaboratively developed with the Michi Saagiig Nations, as part of the DNNP engagement and oversight working group. This could include steps to resolve the issues, such as efforts at the working level, CNSC Director/ Executive and Nation Leadership level and/ or direct notification to the Commission."

3.6.6 Conclusions on Indigenous Engagement and Consultation

452. Based on the evidence on the record for this hearing, and described throughout section 3.6.5 of this *Record of Decision*, the Commission concludes that its responsibility to uphold the honour of the Crown and its constitutional obligations with regard to engagement and the duty to consult respecting Indigenous interests has been satisfied to date. The Commission finds that, OPG's LTC application has the potential to impact Aboriginal and/or treaty rights. It also finds that those potential impacts have been appropriately assessed, considered, and mitigated based on the commitments and accommodation measures proposed by OPG and CNSC staff.

453. The Commission recognizes that the DNNP site is located on Michi Saagiig Anishinaabeg lands and waters, within the Williams Treaties territory. Considering the 2018 Williams Treaties First Nations Settlement Agreement and the potential for construction of the DNNP to impact those rights, the Commission finds that the Crown's duty to consult and, where appropriate, accommodate falls at the higher end of

the spectrum with respect to the Williams Treaties First Nations.

454. In light of the UNDA, the Commission's appreciation of the scope of the duty is informed by the UNDRIP and its principles. Following recent jurisprudence, the Commission has considered its duty in light of the FPIC standard of consultation with respect to the Michi Saagiig Nations. It is in this regard that the Commission has directed extensive accommodation measures that will further enable the incorporation of Indigenous knowledge and practices into the conduct of the licensed activities and into the CNSC oversight thereof, including but not limited to cultural practices built into the hearing process, reformatting of the hearing space and seating format to better reflect and include Indigenous perspectives, and increasing time for oral interventions at the hearing. The evidence supports that the CNSC staff, Michi Saagiig Nations and OPG continue to work together with the aim of achieving consensus. The Commission is satisfied that the adjustments that have been made to the hearing process, to respond to Michi Saagiig Nations' input, are valuable ones that contribute to the discharge of the duty by ensuring a responsive and robust process.

455. The Commission acknowledges CNSC staff's efforts in this regard on behalf of the Commission, including its efforts to ensure that Indigenous Nations and communities were properly informed of the licence to construct application, and that participant funding was made available to assist Indigenous Nations and communities in participating in the hearing process. 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. The Commission also recognizes OPG's commitment to continue engagement with and inclusion of Indigenous peoples in this matter.

3.7 Other Matters of Regulatory Importance

3.7.1 Public Engagement

456. A public information and disclosure program (PIDP) is a regulatory requirement for licence applicants and licensed operators of Class I nuclear facilities. Paragraph 3(j) of the CINFR states that an application for a licence in respect of a Class I nuclear facility shall contain "the proposed program to inform persons living in the vicinity of the site of the general nature and characteristics of the anticipated effects on the environment and the health and safety of persons that may result from the activity to be licensed."

457. Section 5.2 of REGDOC-1.1.2 provides that an applicant shall describe how its proposed public information and disclosure program meets the requirements in REGDOC-3.2.1, *Public Information and Disclosure*,[280] which sets out requirements and guidance for public information and disclosure for licensees and applicants of Class I and Class II nuclear facilities.

[280] REGDOC-3.2.1, *Public Information and Disclosure*, CNSC, May 2018.

458. In section 5.2 of CMD 24-H3.1 and section 5.3 of its application, OPG reported that it has conducted comprehensive public outreach on all phases of the DNNP since the outset of the Project in 2006. OPG reported that its public engagement tools have included OPG's public website, public newsletter, annual public open houses, site tours, presentations to community groups, and responding to public inquiries.

459. In section 5.2 of CMD 24-H3.1 and section 5.3 of its application, OPG reported that it has a *Nuclear Public Information Disclosure and Transparency Protocol* (OPG's PIDP) in place, which provides the expectations and requirements for OPG's activities with stakeholders, public response requirements for issues or significant events, and communications with the public. OPG's PIDP is publicly available on OPG's website.

460. In section 4.1 of CMD 24-H3, CNSC staff reported that OPG conducted early and ongoing engagement activities with members of the public regarding the DNNP, and that OPG's ongoing engagement activities had been thorough and flexible. In section 4.2 of CMD 24-H3, CNSC staff noted that OPG has implemented a PDP in compliance with REGDOC-3.2.1. Noting that REGDOC-3.2.1 does not require licensees to have unique PIDPs for separate licenced facilities co-located on a common site, CNSC staff recommended that OPG consider adding details to its existing PIDP regarding its plans to communicate DNNP-specific information with the public.

461. The Commission asked CNSC staff for additional information on how it had communicated with the public regarding OPG's application for a licence to construct. CNSC staff informed the Commission that it informed the public of OPG's application through the CNSC website, through an email to subscribers of the CNSC's mailing list, and through social media. In September 2024, CNSC staff also mailed a physical information card to households and businesses within a 10-km radius of the Darlington Nuclear site to inform them of OPG's application and the related hearing.[281]

462. Regarding the request from the Municipality of Clarington (CMD 24-H3.54) to be formally notified of hearings for facilities in their jurisdiction, CNSC staff committed to putting in place a more formal process to inform host communities of upcoming hearings.[282]

463. The intervention from Christine Drimmie (CMD 24-H3.11, CMD 24-H3.11A) raised the view that the public had not been adequately informed regarding the DNNP. Asked how it could improve public outreach, CNSC staff noted that it would conduct a lessons learned activity following the hearing to identify areas for improvement, including regarding public engagement. An OPG representative explained that OPG tracks the feedback that it receives from the public and uses that feedback to update its public outreach approach. The OPG representative noted that, since 2023 OPG has engaged with 50,000 people annually including through community events, public information sessions, and technical workshops.[283]

464. The Commission is satisfied that OPG will continue to communicate to the public information about the health, safety and security of persons and the environment and

[281] Transcript, January 9, 2025, pages 17-21.
[282] Transcript, January 9, 2025, page 19.
[283] Transcript, January 9, 2025, pages 266-274.

other issues related to the DNNP, under the licence to construct. The Commission comes to this conclusion on the following basis:

- OPG's PIDP meets the requirements of REGDOC-3.2.1
- OPG conducted sufficient public engagement activities regarding the DNNP leading up to the hearing on OPG's licence to construct application

3.7.2 Decommissioning Plans and Financial Guarantee

465. The NSCA and associated Regulations require licensees to adequately provide for the safe decommissioning of their facilities and long-term management of waste produced during the facilities' lifespan. In order to ensure that adequate resources are available for the safe and secure future decommissioning of the DNNP site, the Commission requires that an adequate financial guarantee for the realization of planned activities be implemented and maintained in a form acceptable to the Commission throughout the licence period.

466. REGDOC-3.3.1 – *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*[284] sets out requirements and guidance for applicants regarding the establishment and maintenance of funding for the decommissioning of facilities and termination of activities licensed by the CNSC.

467. As discussed in section 3.5.10 of this *Record of Decision*, OPG submitted both an 'as-built' PDP and an "end of life" PDP alongside its application for a licence to construct. Only the 'as-built' PDP is required for the construction phase of the Project. In section 2.10 of CMD 24-H3, CNSC staff submitted that OPG had adequately described the proposed activities for decommissioning the 'as-built' facility and had provided a credible cost estimate for those activities.

468. In section 5.5 of CMD 24-H3.1, OPG provided information on its financial guarantee. OPG also provided the Commission with specific documentation on its financial guarantee and associated cost estimate in a confidential information package submitted alongside its application. OPG proposed a Letter of Credit, of which the CNSC is the beneficiary, as the legal instrument for the financial guarantee. OPG reported that the Letter of Credit would replace the current financial guarantee for OPG's licence to prepare site and satisfy the CNSC requirement for a five-year financial guarantee period from 2025 to 2029. For the period post-2029, OPG reported that it would provide the CNSC with an updated assessment of the financial guarantee in 2029, or before, in support of OPG's application for a licence to operate, whichever is earlier.

469. In section 5.2 of CMD 24-H3, CNSC staff clarified that OPG's proposed financial guarantee states the amount to bring the DNNP site from an 'as-built' pre-fuelled state to a Brownfield site is $167,180,000.[285] CNSC staff submitted that OPG's proposed financial guarantee is sufficient to cover the activities that would be authorized during the license to construct phase and is compliant with REGDOC-3.3.1.

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[284] REGDOC-3.3.1, *Financial Guarantees for Decommissioning of Nuclear Facilities and Termination of Licensed Activities*, CNSC, January 2021.
[285] Cost given in 2022 Canadian dollars.

470. The intervention from Christine Drimmie (CMD 24-H3.11, CMD 24-H3.11A) raised a concern regarding OPG's readiness for decommissioning. Regarding this intervention, the Commission asked for clarity on how uncertainty in the PDP is managed. CNSC staff clarified that there are two aspects of uncertainty regarding decommissioning; the cost estimate and planning. Uncertainties in the cost estimate are managed using contingencies and, per REGDOC-2.11.2, an applicant should describe uncertainties in decommissioning planning in its PDP. CNSC staff noted that OPG included key uncertainties in its "as-built" PDP. An OPG representative added that the "as-built" PDP is generic enough that, as the design progresses, the PDP will still be reflective of what is being built. Per REGDOC-2.11.2, OPG is required to update its PDP at least every 5 years.[286]

471. The intervention from the Ontario Clean Air Alliance (CMD 24-H3.6) raised questions regarding OPG's planned decommissioning timeline. Asked to provide clarity on this matter, an OPG representative explained that its "as-built" PDP employs a prompt decommissioning strategy which estimates that decommissioning activities would take 6 years. OPG's "end-of-life" PDP estimates that decommissioning following operation of the BWRX-300 would take 10 years. CNSC staff noted that it had accepted OPG's prompt decommissioning strategy and concurred with the timelines provided by OPG.[287]

472. The Commission asked OPG to detail its approach if decommissioning were to occur at the "as-built" stage of the project. An OPG representative explained that, per its "as-built" PDP, OPG would remove material from the site up to a metre below ground, backfill, and then reseed the soil to restore the site to a Brownfield site. CNSC staff clarified that OPG would be required submit a detailed decommissioning plan, submit an updated cost estimate, and apply for a licence to decommission before any decommissioning activities would be authorized.[288]

473. Noting that the intervention from Dr. Ole Hendrickson (CMD 24-H3.36) questioned the adequacy of OPG's PDPs, the Commission asked OPG how it had considered industry experience in developing its PDPs. An OPG representative explained that OPG had considered decommissioning experience from first generation BWRs in its PDPs. OPG also considered its own previous experience from decommissioning the Bruce Heavy Water Plant and OPG's conventional (coal-fired) Nanticoke and Lambton Generating Stations.[289]

474. The Commission asked whether OPG had considered the environmental impact of future decommissioning activities. An OPG representative clarified that, prior to applying for a licence to decommission, OPG would be required to prepare a detailed decommissioning plan which would include a safety analysis to confirm that environmental releases during the decommissioning phase would meet regulatory requirements.[290]

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[286] Transcript, January 9, 2025, pages 274-278.
[287] Transcript, January 10, 2025, pages 80-82 and 87-88.
[288] Transcript, January 10, 2025, pages 103-106.
[289] Transcript, January 10, 2025, pages 97-99.
[290] Transcript, January 13, 2025, page 5.

475. The intervention from Dr. Ole Hendrickson (CMD 24-H3.36) questioned how OPG ensured the adequacy of its decommissioning cost estimate. Asked to comment on this matter, an OPG representative stated that OPG used a bottom-up estimating methodology, as described in REGDOC-3.3.1, along with industry experience to develop an accurate cost estimate. CNSC staff informed the Commission that it assessed the accuracy of OPG's estimate by reviewing OPG's decommissioning work breakdown structure, including the cost factors and contingencies applied to each decommissioning activity.[291]

476. The Commission accepts OPG's proposed financial guarantee of $167,180,000 in the form of a Letter of Credit. The Commission is satisfied that the financial guarantee satisfies regulatory requirements and is sufficient to account for the activities under the licence to construct. The Commission notes that this financial guarantee is distinct from OPG's consolidated financial guarantee, which covers the existing Darlington NGS and Waste Management Facilities.

3.7.3 Cost Recovery

477. Paragraph 24(2)(c) of the NSCA requires that a licence application be accompanied by the prescribed fee, as set out by the *Canadian Nuclear Safety Commission Cost Recovery Fees Regulations*[292] (CRFR), and based on the activities to be licensed. An applicant for a Class I facility licence is subject to Part 2 of CRFR, which is based on Regulatory Activity Plan fees.

478. In section 5.1 of CMD 24-H3, CNSC staff reported that OPG is in good standing with respect to the CRFR requirements for the DNNP. CNSC staff added that OPG has paid its cost recovery fees in full. The Commission is satisfied that OPG is in good standing with respect to CRFR requirements for the DNNP.

3.7.4 Nuclear Liability Insurance

479. Licensees are required to maintain nuclear liability insurance for designated nuclear installations, in accordance with the *Nuclear Liability and Compensation Act*[293] (NLCA). The Commission notes that the DNNP is not covered under the NLCA during the construction phase as there is no nuclear fuel on site. The Commission would consider the applicability of the NLCA to the operation of the DNNP should OPG submit an application for a licence to operate.

3.8 Licence Length and Conditions

480. The Commission considered OPG's application for a licence to construct one BWRX-300 for the DNNP at its Darlington Nuclear site. OPG requested a 10-year licence

[291] Transcript, January 8, 2025, pages 96-99.
[292] SOR/2003-212.
[293] S.C. 2015, c. 4, s. 120.

period for the licence to construct. OPG currently holds a licence to prepare site for the Darlington Nuclear site, PRSL 18.00/2031, which is valid until October 11, 2031.

481. In section 1.3 of CMD 24-H3.1, OPG submitted that it is seeking a 10-year power reactor construction licence in order to complete any remaining site preparation activities, to construct supporting infrastructure for up to four BWRX-300 units, to construct a single BWRX-300 powerblock, and to complete fuel-out commissioning activities for the single BWRX-300 unit.

3.8.1 Licence Length

482. OPG applied for a 10-year licence to construct. In its application, OPG submitted that it is qualified to safely carry out the licensed activities for the proposed 10-year licence term and that, in carrying on those activities, 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.

483. In section 1.8 of CMD 24-H3, CNSC staff submitted its view that OPG's request for a 10-year licence to construct period was adequately substantiated.

484. The Commission concludes that a 10-year licence term is appropriate. The Commission's decision is based on the following, discussed in further detail throughout section 3.5 of this *Record of Decision*:

- OPG has characterized and mitigated hazards associated with the construction of the DNNP to ensure the protection of the health and safety of persons and the environment
- OPG has an effective management system in place that meets the requirements of CSA N286-12
- CNSC staff has effective compliance verification programs in place to ensure that activities under the licence to construct remain in compliance with the licensing basis

The Commission notes that OPG intends to apply for a licence to operate prior to the end of the licence to construct period.

3.8.2 Licence Conditions

485. In Part 2 of CMD 24-H3, CNSC staff provided a proposed power reactor construction licence. CNSC staff provided an update to that proposed licence in Appendix A of CMD 24-H3.B. The proposed licence contains standardized CNSC licence conditions along with the following 4 site-specific licence conditions:

> "15.1. The licensee shall implement the mitigation measures proposed and commitments made during the Darlington Joint Review Panel process,

including the applicable recommendations of the Darlington Joint Review Panel Report, in accordance with the Government of Canada response.

15.2. The licensee shall implement and maintain an environmental assessment follow-up program.

15.3. The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.

15.4. The licensee shall conduct Indigenous engagement activities, specific to the DNNP, throughout the period of this licence."

486. Licence conditions 15.1 and 15.2 would require OPG to complete its commitments from the EA process for the DNNP. Licence condition 15.1 would require OPG to implement the mitigation measures and commitments made during the EA process, including the applicable recommendations of the JRP report, as well as additional mitigation measures identified and described in CNSC staff's CMD 24-H2. Licence condition 15.2 would require OPG to implement the provisions of the DNNP Environmental Monitoring and Environmental Assessment Follow-Up.

487. Licence condition 15.3 would require the approval of the Commission, or person authorized by the Commission, to remove regulatory hold points. The regulatory hold points proposed by CNSC staff are discussed further in section 3.8.3 of this *Record of Decision*.

488. During their joint oral intervention, and in a January 8, 2025 letter,[294] the Michi Saagiig Nations requested a revision to the compliance verification criteria for licence condition 15.4 in the proposed LCH. CNSC staff reviewed the Michi Saagiig Nations' request and updated the proposed compliance verification criteria, as described in CMD 24-H3.G, in an effort to address the concerns raised. CNSC staff submitted that it would be sharing the updated compliance verification criteria with the Michi Saagiig Nations for their review, comment, and feedback. CNSC staff committed to continued engagement with the Michi Saagiig Nations on the compliance verification criteria for licence condition 15.4, with the goal of reaching consensus on the proposed language.

489. In its written intervention, SON requested that licence condition 11.1 in the proposed licence to construct be revised from the language proposed by staff in Part 2 of CMD 24-H3:

"11.1 The licensee shall implement and maintain a waste management program."

[294] *Supplementary Information in consideration of Ontario Power Generation's Licence to Construct application for one BWRX-300 reactor at the Darlington New Nuclear Project Site*, Chief T. Simpson, Chief K. Knott, Chief L. Carr, and Chief K. LaRocca, January 8, 2025.

to the following language proposed by SON:

> "11.1 The licensee shall implement and maintain a waste management program to store all the radioactive waste on site throughout the life cycle of the nuclear facility and permanently if no disposal solution is found. This requirement applies with respect to the sorting, processing, recycling, and reducing of radioactive wastes."

490. In CMD 24-H3.H, CNSC staff provided its response to SON's request. CNSC staff expressed the view that the language proposed by CNSC staff for licence condition 11.1 adequately encompasses the regulatory requirements for the waste management SCA for the licence to construct phase of the DNNP. The activities that the licence to construct would authorize do not allow for the handling of radioactive materials and will not generate any radioactive wastes at the DNNP. CNSC staff further submitted that it would add the following compliance verification criteria under licence condition 11.1 in the LCH, should a licence to construct be issued by the Commission:

> "Licensee shall honour the commitments made to CNSC and SON in the letter to the Commission Registry of November 13, 2024"

491. The Commission appreciates CNSC staff's planned modification to the compliance verification criteria under licence conditions 11.1 and 15.4, as detailed in CMD 24-H3.G and CMD 24-H3.H. The Commission expects CNSC staff to continue engagement with the Michi Saagiig Nations and SON regarding the compliance verification criteria in the LCH, as appropriate. The Commission directs CNSC staff to provide the updated LCH to the Commission for its information once the compliance verification criteria for these two conditions are finalized, and to notify the Commission of any changes made to the LCH annually, either through the regulatory oversight report addressing nuclear power reactors or by other reporting means.

3.8.3 Regulatory Hold Points

492. CNSC staff proposed a power reactor construction licence with conditions including regulatory hold points (RHP) as part of the compliance oversight strategy. In section 1.6 of CMD 24-H3 and in the proposed LCH, CNSC staff proposed the following 3 RHPs at key project milestones during the licence to construct phase:

- RHP-1: Installation of the Reactor Building Foundation
  - The removal of this RHP would authorize OPG to place the foundation for the reactor building and commence civil construction of the reactor building structure, internal civil structures, and internal reactor building systems and components.
- RHP-2: Installation of the Reactor Pressure Vessel
  - The removal of this RHP would authorize OPG to install the reactor pressure vessel and associated structures and components, as well as complete the appropriate installations of critical components, and conduct limited component testing.

- RHP-3: Fuel-Out Commissioning
    - The removal of this RHP would authorize OPG to conduct full-scale testing and commissioning of installed structures, systems, and components.

493. As described in licence condition 15.3 in the proposed LCH, the removal of a RHP requires the licensee to submit evidence that all commitments related to the RHP have been completed. The criteria for removal of a RHP should be clear and objective. In Appendix D.2 of CMD 24-H3, CNSC staff outlined which commitments OPG must complete before OPG can apply for the removal of each RHP. The commitments tied to each RHP would be tracked by CNSC staff in the *BWRX-300 Licensing Regulatory Actions* document under licence condition 15.3.

494. In section 3 of CMD 24-H3.F, CNSC staff committed to implement the following communications to ensure that the Commission, Indigenous Nations and communities and interested parties remain informed on the status of the RHPs:

- annual reporting in the regulatory oversight report addressing nuclear power reactors.
- maintaining the CNSC website to include status updates of the project and the status of the RHPs
- informing the Commission and Indigenous Nations and communities when an RHP is removed, should the Commission delegate its authority for the removal of RHPs
- messaging CNSC subscribers and using social media posts informing when a RHP has been removed
- providing updates through the regular *Status Report on Power Reactors* to the Commission as required

495. The Commission asked CNSC staff to provided additional information on how it would assess OPG's completion of the commitments for each RHP. CNSC staff explained that each commitment listed in Appendix D.2 of CMD 24-H3 has specific deliverables that must be accepted by CNSC staff before removal of a RHP can be considered. The required deliverables are clearly communicated to OPG. Upon receipt of the necessary deliverables from OPG, CNSC staff would assess whether the deliverables meet regulatory expectations. If all expectations are met, CNSC staff would make the recommendation for removal of the RHP to the Commission, or person authorized by the Commission, per licence condition 15.3. If expectations are not met, CNSC staff would request additional information from OPG. CNSC staff noted that it has experience successfully implementing RHPs for large projects such as the Darlington NGS Refurbishment Project.[295]

496. Asked to provide additional information on its management of RHP commitments, an OPG representative explained that, if the Commission were to accept the RHPs proposed by CNSC staff, each RHP commitment would be built into the DNNP project plan to ensure completion. The OPG representative noted that OPG took a similar

[295] Transcript, January 13, 2025, pages 184-189.

approach to RHP commitments in its project plan for the Darlington NGS Refurbishment Project.[296]

497. The Commission asked CNSC staff if documentation related the removal of RHPs would be available to the public. CNSC staff also stated that it has a communication plan associated with the removal of each RHP which includes a public announcement and links to relevant supporting documentation. Documents detailing the interactions between OPG and CNSC staff relevant to the RHPs would be available upon request, apart from any confidential information.[297]

498. The Commission is satisfied with the three RHPs proposed by CNSC staff. The Commission finds that the use of RHPs will allow for the progression of the detailed design and phased construction whilst ensuring that the conditions set out in the licence have been satisfied and that safety is maintained. The Commission also notes that CNSC staff has experience successfully implementing RHPs for large projects such as the Darlington NGS Refurbishment Project.

3.8.4 Delegation of Authority

499. In section 5.4 of CMD 24-H3, CNSC staff recommended that the Commission delegate authority for licence condition 15.3 ("The licensee shall obtain the approval of the Commission, or consent of a person authorized by the Commission, prior to the removal of established regulatory hold points.") to the following CNSC staff:

- Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch

By delegating its authority for the purposes of licence condition 15.3, the Commission would be delegating the authority to remove the established regulatory hold points to the above CNSC staff member.

500. In section 5.4 of CMD 24-H3, CNSC staff clarified that, prior to releasing a regulatory hold point, CNSC staff will verify compliance and provide a report to the Executive Vice President and Chief Regulatory Operations Officer, who will review the report and, if satisfied, lift the regulatory hold point. CNSC staff would also provide notice of the removal of the hold point to the licensee, the public, and Indigenous Nations and communities.

501. For the purpose of the administration of licence condition 15.3, the Commission authorizes the CNSC Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch, as recommended by CNSC staff. This is for the purpose of the removal of regulatory hold points. The Commission is satisfied that this approach is reasonable.

502. The Commission directs CNSC staff to provide updates to the Commission on the status of OPG's progress toward each regulatory hold point in the regular *Status Report*

[296] Transcript, January 13, 2025, pages 189-191.
[297] Transcript, January 13, 2025, pages 194-196.

on Power Reactors at each public meeting of the Commission and annually, either through the regulatory oversight report addressing nuclear power reactors or by other reporting means.

3.8.5 Conclusion on Licence Length and Conditions

503. The Commission is satisfied that a 10-year licence term is appropriate and that the licence conditions proposed by CNSC staff are adequate. The Commission appreciates CNSC staff's planned modification to the compliance verification criteria under licence conditions 11.1 and 15.4, and expects CNSC staff to continue engagement with the Michi Saagiig Nations and SON regarding the compliance verification criteria in the LCH, as appropriate.

504. The Commission is satisfied with the three RHPs proposed by CNSC staff. The Commission authorizes the CNSC Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch to administer licence condition 15.3, as recommended by CNSC staff. This is for the purpose of the removal of the RHPs.

505. The Commission directs CNSC staff to provide updates to the Commission on the status of OPG's progress toward each regulatory hold point in the regular *Status Report on Power Reactors* at each public meeting of the Commission and annually, either through the regulatory oversight report addressing nuclear power reactors or by other reporting means. The Commission also directs CNSC staff to notify it of any changes made to the LCH through the regular regulatory oversight report addressing nuclear power reactors.

4 CONCLUSION

506. 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, including all oral submissions made during the public hearing.

507. The Commission has considered whether the duty to consult has been triggered by the determinations before it in this matter, and whether that duty has been satisfied. As described in detail in this decision, the Commission is satisfied that the honour of the Crown has been upheld and that the legal obligation to consult and, where appropriate, accommodate Indigenous interests has been satisfied, relative to the Commission's considerations related OPG's application for a licence to construct one BWRX-300 reactor at for its DNNP at the Darlington Nuclear site.

508. The Commission acknowledges that, as the DNNP continues to be pursued, there will be future licensing decisions to which the duty to consult will also apply. The Commission expects CNSC staff and OPG to continue their respective consultation and engagement efforts over the lifecycle of the DNNP Project, and any subsequent applications to the Commission, with Indigenous Nations and communities and their representatives, as well as with the public.

509. Based in its consideration of the record before it, the Commission concludes the

following:

- OPG is qualified to carry on the activities 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
- the financial guarantee proposed by OPG in the form of a Letter of Credit is acceptable

510. The Commission therefore issues, pursuant to section 24(4) of the *Nuclear Safety and Control Act*, a Nuclear Power Reactor Construction Licence to OPG to construct one BWRX-300 reactor for its Darlington New Nuclear Project at its Darlington Nuclear site, located in the Municipality of Clarington, Ontario. The licence, PRCL 32.00/2035, is valid from April 4, 2025, to March 31, 2035, unless suspended, amended, revoked or replaced.

511. In issuing PRCL 32.00/2035, the Commission also delegates it authority for the purpose of the administration of licence condition 15.3 to CNSC staff's Executive Vice-President and Chief Regulatory Operations Officer, Regulatory Operations Branch.

Tremblay, Pierre

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April 4, 2025

Pierre F. Tremblay
President

Date

APPENDIX A – INTERVENORS

Intervenors – Oral Presentations	**Document Number**
Ontario Clean Air Alliance, represented by J. Gibbons	24-H3.6
CANDU Owners Group, represented by R. Clavero	24-H3.7
North American Young Generation in Nuclear, represented by M. Mairinger	24-H3.8
Christine Drimmie	24-H3.11 24-H3.11A
Darlington Nuclear Community Advisory Council, represented by D. Hardy and H. Reid	24-H3.12 24-H3.12A 24-H3.12B
Regional Municipality of Durham, represented by E. Baxter-Trahair, J. Eng, C. Closs, A. Di Pietro, and C. Goodchild	24-H3.15 24-H3.15A
Canadian Nuclear Association, represented by J. Baker	24-H3.18
RESD Inc., represented by P. Sedran	24-H3.20 24-H3.20A
Bruce Power, represented by M. Rinker	24-H3.21
Society of United Professionals, represented by R. Caron and R. Chatoor	24-H3.25 24-H3.25A
Dr. Ole Hendrickson	24-H3.36
Dr. Sunil Nijhawan	24-H3.39 24-H3.39A
Kinectrics, represented by Y. Hoang and S. Donelly	24-H3.40 24-H3.40A
North American Young Generation in Nuclear Durham, represented by J. Jeyyarajah, A. Sindhar, and S. Fu	24-H3.46
Clarington Board of Trade, represented by B. Wrightman	24-H3.47
Organization of Canadian Nuclear Industries, represented by B. Fehrenbach	24-H3.51
The Society of High Prairie Regional Environmental Action Committee, represented by J. Asterisk	24-H3.52
Municipality of Clarington, represented by Mayor A. Foster	24-H3.54
Northwatch, represented by B. Lloyd	24-H3.58
Promation, represented by D. Spector	24-H3.60
Alderville First Nation, represented by Chief T. Simpson	24-H3.62
Nuclear Waste Management Organization, represented by C. Boyle	24-H3.65 24-H3.65A
Judith Fox Lee	24-H3.66
Canadian Coalition for Nuclear Responsibility and Prolet Inc., represented by G. Edwards	24-H3.67 24-H3.67A
Canadian Nuclear Workers' Council, represented by B. Walker	24-H3.76 24-H3.76A
Hatch Ltd., represented by M. Pieries and M. Wilde	24-H3.77 24-H3.77A

Kenneth C. Johnson	24-H3.79 24-H3.79A
Mississaugas of Scugog Island First Nation, represented by Chief K. LaRocca	24-H3.81
Saugeen Ojibway Nation, represented by Chief C. Ritchie, K. Tucker, J. K. Martin, and A. Monem	24-H3.82
Curve Lake First Nation, represented by F. Chua, P. Williams, and K. Wright	24-H3.83
Durham Nuclear Awareness, Slovenian Home Association, and Canadian Environmental Law Association, represented by S. Libman and M.V. Remana	24-H3.84 24-H3.84A
Hiawatha First Nation, represented by Chief L. Carr	24-H3.85
Intervenors – Written Submissions	**Document Number**
Labourers' International Union of North America	24-H3.3
AtkinsRéalis	24-H3.4
Durham College	24-H3.5
Lakeside Process Controls Ltd	24-H3.9
Orano Canada Inc.	24-H3.10
BWX Technologies Inc.	24-H3.13
CEDAR Project Environment & Society Program	24-H3.14
Power Workers' Union	24-H3.16
Cheryl Casbourn	24-H3.17
CALIAN	24-H3.19
CAMECO Corporation	24-H3.22
Black & McDonald	24-H3.23
Scientists in School	24-H3.24
Celeros Flow Technology	24-H3.26
E.S. Fox Limited	24-H3.27
Chris Corey	24-H3.28
Paul Filteau	24-H3.29
Mark M. Giese	24-H3.30
Adam Pasmanik	24-H3.31
Andrew Stout	24-H3.32
Barbara Schumacher	24-H3.33
Marilyn Hay	24-H3.34
Shawn Kettner	24-H3.35
Jennifer Tett	24-H3.37
Ecojustice Working Group	24-H3.38
Kerstin Muth	24-H3.41
Durham Business Alliance	24-H3.42
Bird Construction	24-H3.43
Mary Ludwig	24-H3.44
Pauline Richardson	24-H3.45
Ingrid Alesich	24-H3.48
NB Power	24-H3.49

SaskPower	24-H3.50
Brilliant Energy Institute at Ontario Tech	24-H3.53
Janine Carter	24-H3.55
GEH SMR Technologies Canada	24-H3.56
Metis Nation of Ontario	24-H3.57
Stephen Lawrence	24-H3.59
Fermi Energia AS	24-H3.61
AECOM	24-H3.63
Jamil Jivani	24-H3.64
Nuclear Transparency Project	24-H3.68
Aecon Group INC.	24-H3.69
Ontario Chamber of Commerce	24-H3.70
Johanna Aucoin-Slaunwhite	24-H3.71
Mary Veltri	24-H3.72
Catherine Vakil	24-H3.73
Women in Nuclear (WiN) Canada	24-H3.74
Victor Lau	24-H3.75
Wendy O’Connor	24-H3.78
Jeremy Whitmore	24-H3.80
Piotr Ciompa	24-H3.86
Prodigy Clean Energy Ltd.	24-H3.87