



UNPROTECTED/NON PROTÉGÉ

ORIGINAL/ORIGINAL

CMD: 22-H103

Date signed/Signé le : 30 MARCH 2022

Issue Required Approval(s) for

Délivrer l'approbation requise pour

**Ontario Power  
Generation Darlington  
New Nuclear Project  
Financial Guarantee for  
Site Preparation**

**Garantie financière pour  
la préparation de  
l'emplacement du projet  
de nouvelle centrale  
nucléaire de Darlington  
d'Ontario Power  
Generation**

Hearing in writing based solely on  
written submissions

Audience fondée uniquement sur des  
mémoires

Scheduled for:  
May 2022

Prévue pour :  
Mai 2022

Submitted by:  
CNSC Staff

Soumise par :  
Le personnel de la CCSN

**Summary**

This Commission member document pertains to a request for a decision regarding:

- Revision to the financial guarantee for Ontario Power Generation (OPG) Darlington New Nuclear Project (DNNP) power reactor site preparation licence, PRSL 18.00/2031.

The following action is requested of the Commission:

- Accept the proposed revision of OPG's financial guarantee for the DNNP site preparation.

The following item is attached:

- Current licence PRSL 18.00/2031

**Résumé**

Le présent document à l'intention des commissaires porte sur une demande de décision concernant :

- La révision de la garantie financière pour le permis de préparation de l'emplacement d'un réacteur de puissance, PRSL 18.00/2031, visant le projet de nouvelle centrale nucléaire de Darlington (PNCND) d'Ontario Power Generation (OPG).

La Commission pourrait considérer prendre la mesure suivante :

- Accepter la révision proposée à la garantie financière de OPG pour la préparation du site de PNCND.

La pièce suivante est incluse :

- Permis actuel, PRSL 18.00/2031

**Signed/signé le**  
30 March 2022

---

Caroline Ducros

**Director General**  
Directorate of Advanced Reactor Technologies

**Directrice générale de la**  
Direction des technologies avancées des réacteurs

This page was intentionally left blank.

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1 OVERVIEW.....</b>	<b>2</b>
1.1 Background .....	2
1.2 Highlights.....	3
1.3 Overall Conclusions.....	3
1.4 Overall Recommendations .....	3
<b>2 MATTERS FOR CONSIDERATION .....</b>	<b>3</b>
2.1 Background Information .....	3
2.2 Preliminary Decommissioning Plan .....	4
2.3 Financial Guarantee Proposal .....	4
<b>3 OTHER MATTERS OF REGULATORY INTEREST.....</b>	<b>5</b>
3.1 Environmental Assessment .....	5
3.2 Indigenous Consultation .....	5
<b>4 OVERALL CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>5</b>
4.1 Overall Conclusions.....	5
4.2 Overall Recommendations .....	6
<b>REFERENCES .....</b>	<b>7</b>
<b>GLOSSARY.....</b>	<b>8</b>
<b>A. BASIS FOR THE RECOMMENDATIONS .....</b>	<b>9</b>
A.1 Regulatory Basis .....	9
A.2 Technical Basis .....	10
<b>B. CURRENT LICENCE.....</b>	<b>11</b>

This page was intentionally left blank.

## EXECUTIVE SUMMARY

In accordance with subsection 24(5) of the [Nuclear Safety and Control Act](#) (NSCA), a licence may contain a condition that the licensee provide a financial guarantee (FG) in a form that is acceptable to the Commission. Accordingly, licence condition G.5 of the current Canadian Nuclear Safety Commission (CNSC)-issued licence (PRSL 18.00/2031) held by Ontario Power Generation (OPG) for the Darlington New Nuclear Project (DNNP) requires the licensee to maintain an FG acceptable to the Commission. The FG must be reviewed and updated every 5 years, or when there are material changes to the licensee's operational activities.

OPG submitted a revised FG and preliminary decommissioning plan (PDP) for CNSC acceptance in November 2021. OPG estimates the FG to be zero dollars for 2022 and 2023 and C\$451,000 for 2024. The FG requirement for 2024 will be satisfied by a letter of credit prepared by OPG. For the period after 2024, OPG will provide CNSC staff an updated FG assessment in 2024 or as part of its Licence to Construct application, whichever is earlier.

CNSC staff reviewed the revised PDP, cost estimate for decommissioning and the proposed FG. CNSC staff concluded that OPG's submission meets the regulatory criteria of CNSC's Regulatory Guide G-206, [Financial Guarantees for the Decommissioning of Licensed Activities](#), and provides an adequate cost estimate for the decommissioning of the DNNP for site preparation activities.

CNSC staff recommend that the Commission accept the revised financial guarantee proposed by OPG.

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

# 1 OVERVIEW

## 1.1 Background

Ontario Power Generation (OPG) holds a Class 1A power reactor site licence, PRSL 18.00/2031 [1], to prepare the Darlington New Nuclear Project (DNNP) site for the future construction and operation of a new nuclear generating station. The licence was renewed by the Commission in 2021 [2].

The Darlington nuclear site is located on the north shore of Lake Ontario, in the Municipality of Clarington, Ontario, 10 kilometres east of Oshawa and approximately 65 kilometres east of Toronto. The existing site consists of the Darlington Nuclear Generating Station, home to four 881-megawatt Canada Deuterium Uranium (CANDU) reactors, which came into service between 1990 and 1993. The site is also home to a tritium removal facility, which is designed to reduce levels of radioactive tritium from the heavy water used in the moderator and primary cooling circuit.

The portion of the site proposed for preparation of the DNNP is shown in Figure 1. The proposed area is bounded by the site property limits on the east and north boundaries, by Lake Ontario to the south, and by Holt Road to the west.

**Figure 1: Aerial photo of the Darlington Nuclear Site**



Licence condition G.5 of OPG's power reactor site preparation licence (PRSL) requires OPG to maintain a financial guarantee (FG) for decommissioning that is acceptable to the Commission to ensure that the FG remains valid and in effect, and adequate to fund a preliminary decommissioning plan (PDP). To meet this licence condition, OPG maintains an FG [3] and PDP [4] that includes the expected costs associated with decommissioning the DNNP should the project be terminated during site preparation. OPG's proposed FG for the DNNP site preparation is separate from the OPG consolidated FG for its other nuclear facilities.

## 1.2 Highlights

- OPG’s preferred decommissioning strategy is the “Prompt decommissioning strategy” as outlined in CSA standard N294-09 *Decommissioning of Facilities Containing Nuclear Substances* [5].
- The proposed FG to cover decommissioning costs is zero dollars for 2022 and 2023 and C\$451,000 for 2024.
- The cost estimate takes into consideration replacing topsoil and reseeding; and modifying site access control measures.
- Acceptance of the proposed FG by the Commission does not require an amendment to the terms and conditions set out in OPG’s licence (PRSL 18.00/2031).

## 1.3 Overall Conclusions

Canadian Nuclear Safety Commission (CNSC) staff reviewed the OPG submission and concluded that:

- OPG’s revised PDP provides an acceptable strategy and credible cost estimate and is consistent with CNSC Regulatory Guide G-219 [Decommissioning Planning for Licensed Activities](#) [6] and CSA standard N294-09 *Decommissioning of Facilities Containing Nuclear Substances* [5].
- OPG’s proposed FG is acceptable and adequate for the decommissioning of the DNNP for site preparation activities and is consistent with CNSC Regulatory Guide G-206 [Financial Guarantees for the Decommissioning of Licensed Activities](#) [7].

## 1.4 Overall Recommendations

CNSC staff recommend:

- That the Commission accept the proposed FG for OPG DNNP site preparation activities.

## 2 MATTERS FOR CONSIDERATION

### 2.1 Background Information

In accordance with subsection 24(5) of the [Nuclear Safety and Control Act](#) (NSCA) [8], a licence may contain a condition that the applicant provide an FG in a form that is acceptable to the Commission.

Accordingly, licence condition G.5 of the current licence (PRSL 18.00/2031) held by OPG for the DNNP requires the licensee to maintain an FG acceptable to the Commission [1]. The CNSC requires that FGs are reviewed and updated every 5 years, or when there are material changes to the licensee’s operational activities.

Regulatory Guide G-206, [Financial Guarantees for the Decommissioning of Licensed Activities](#) [7] provides guidance regarding the establishment and maintenance of measures to fund the decommissioning of activities licensed by the CNSC.

OPG currently maintains a zero-dollar FG, as no licenced activities have been permitted to date. OPG was required to re-evaluate both the FG and PDP prior to commencing site preparation work which is anticipated to take place in 2022 [2].

## 2.2 Preliminary Decommissioning Plan

In November 2021, OPG submitted to the CNSC a revised PDP for the DNNP [4]. This submission of the PDP is pursuant to licence condition 11.2 of the CNSC-issued OPG licence PRSL 18.00/2031 [1].

OPG's preferred decommissioning strategy is the "Prompt decommissioning strategy" as outlined in CSA N294-09 *Decommissioning of Facilities Containing Nuclear Substances* [5]. The site will be safe-stated and restored without any planned delays. The end state after decommissioning and remediation is non-licensed industrial usage. Upon completion of safe-stating and restoration, OPG will retain ownership of the site with some buildings and infrastructure maintained for supporting the existing Darlington Nuclear Generating Station site or other OPG uses.

The revised PDP includes a basis for the estimated costs for decommissioning associated with the proposed decommissioning strategy at the site preparation stage. OPG proposed the FG to be zero dollars for 2022 and 2023 and C\$451,000 for 2024.

CNSC staff assessed and concluded that the submitted PDP provides an acceptable strategy and credible cost estimation and is consistent with CNSC Regulatory Guide [G-219](#) [6] and CSA standard N294-09 [5].

## 2.3 Financial Guarantee Proposal

Licence condition G.5 of the OPG licence PRSL 18.00/2031 dictates that OPG shall maintain an FG for decommissioning that is acceptable to the Commission [1]. OPG currently maintains a zero-dollar financial guarantee, as no licensed activities have been conducted to date [2]. During the 2021 licence renewal proceedings [2], CNSC staff noted that prior to the conduct of site preparation activities, OPG's FG must be reviewed and revised [2].

As outlined in OPG's request for acceptance of the cost estimate [3], OPG proposed the FG to be zero dollars for 2022 and 2023 and C\$451,000 for 2024. The increase in the FG cost estimate for 2024 included decommissioning activities such as replacing of topsoil and reseeded; and modifying site access control measures.

OPG proposed the 2024 FG requirement will be satisfied by a letter of credit (LoC) prepared by OPG by year end 2023 [3] and provided a draft LoC for CNSC staff review [9]. Should OPG's work schedule proceed more quickly than expected, OPG will reassess the FG requirement and advance the timing of the final LoC accordingly. For the period post 2024, OPG will provide CNSC staff an updated FG assessment in 2024 or as part of its application for licence to construct, whichever is earlier.

CNSC staff reviewed OPG's proposal to use an LoC as a financial instrument and concluded that OPG's proposed FG is acceptable and adequate for the decommissioning of the DNNP during site preparation and is consistent with CNSC Regulatory Guide G-206 [7].

### **3 OTHER MATTERS OF REGULATORY INTEREST**

#### **3.1 Environmental Assessment**

CNSC staff have reviewed the application under the [NSCA](#) and concluded that there are no impacts to the environment related to this OPG request.

#### **3.2 Indigenous Consultation**

The common law duty to consult with Indigenous Nations and communities applies when the Crown contemplates actions that may adversely affect potential or established Indigenous and/or treaty rights. Based on the information provided in OPG's request, CNSC staff have determined that the request is not likely to cause adverse impacts to Indigenous and/or treaty rights. Therefore, the duty to consult does not arise in relation to the request. Consultation and engagement has taken place in relation to the environmental assessment and licence to prepare site application. Consultation and engagement with identified and interested Indigenous Nations and communities with regards to the DNNP is ongoing and will continue for any additional licence applications by OPG with regards to the DNNP.

### **4 OVERALL CONCLUSIONS AND RECOMMENDATIONS**

#### **4.1 Overall Conclusions**

CNSC staff reviewed the OPG submission and have concluded that:

- OPG's revised PDP provides an acceptable strategy and credible cost estimate and is consistent with CNSC Regulatory Guide G-219, [Decommissioning Planning for Licensed Activities](#) [6] and CSA standard N294-09, *Decommissioning of Facilities Containing Nuclear Substances* [5].
- OPG's proposed FG is acceptable and meets the cost estimation for decommissioning of DNNP for site preparation activities and is consistent with CNSC Regulatory Guide G-206, [Financial Guarantees for the Decommissioning of Licensed Activities](#) [7].

## 4.2 Overall Recommendations

CNSC staff recommend that the Commission accept the proposed financial guarantee for Ontario Power Generation's Darlington New Nuclear Project.

## REFERENCES

1. Ontario Power Generation New Nuclear at Darlington Generating Station Nuclear Power Reactor Site Preparation Licence, PRSL 18.00/2031, October 2021 (e-Doc 6504521).
2. [Record of Proceedings](#), Including Reasons for Decision, DEC 21-H4 “*Application to Renew the Power Reactor Site Preparation Licence for the Darlington New Nuclear Project*” October 12, 2021.
3. Submission, *DNNP: Request for Acceptance of OPG’s Financial Guarantee for Darlington New Nuclear Project Site Preparation Licensing Conditions*, November 2021 (e-Doc 6679833).
4. Submission, *DNNP: Request for CNSC Acceptance of the Site Preparation Preliminary Decommissioning Plan and Closure of Commitment D-P-13.1*, November 2021 (e-Doc 6689612).
5. CSA Group, N294-09, *Decommissioning of Facilities Containing Nuclear Substances*, 2009.
6. Regulatory Guide G-219, [Decommissioning Planning for Licensed Activities](#), June 2000.
7. Regulatory Guide G-206, [Financial Guarantees for the Decommissioning of Licensed Activities](#), June 2000.
8. [Nuclear Safety and Control Act](#), S.C. 1997.
9. Ontario Power Generation New Nuclear at Darlington Generation Station Draft Letter of Credit, February 2022 (e-Doc 6749233).

## GLOSSARY

<b>CNSC</b>	Canadian Nuclear Safety Commission
<b>CMD</b>	Commission Member Document
<b>DNNP</b>	Darlington New Nuclear Project
<b>FG</b>	Financial Guarantee
<b>LoC</b>	Letter of Credit
<b>NSCA</b>	<i>Nuclear Safety and Control Act</i>
<b>PDP</b>	Preliminary Decommissioning Plan
<b>PRSL</b>	Power Reactor Site Preparation Licence
<b>OPG</b>	Ontario Power Generation Inc.

## **A. BASIS FOR THE RECOMMENDATIONS**

### **A.1 Regulatory Basis**

The regulatory basis for the recommendations presented in this CMD is as follows:

#### ***Nuclear Safety and Control Act***

Subsection 24(5) of the [\*Nuclear Safety and Control Act\*](#) provides that a licence may contain any term or condition that the Commission considers necessary for the purposes of the Act, including a condition that the applicant provide a financial guarantee in a form that is acceptable to the Commission.

Subsection 24(6) of the *Nuclear Safety and Control Act* provides that the Commission may authorize the application of the proceeds of any financial guarantee referred to in subsection (5) in such manner as it considers appropriate for the purposes of this Act.

Subsection 24(7) of the *Nuclear Safety and Control Act* provides for the means by which a refund may be granted for any funds that have not been spent.

#### ***General Nuclear Safety and Control Regulations***

The [\*General Nuclear Safety and Control Regulations\*](#) requires under paragraph 3(1)(l) that a licence application contains a description of any proposed financial guarantee relating to the activity to be licensed.

#### ***Class I Nuclear Facilities Regulations***

Paragraph 3(k) of the [\*Class I Nuclear Facilities Regulations\*](#) requires that an application for a licence in respect of a Class I nuclear facility, other than a licence to abandon, shall contain the proposed plan for the decommissioning of the nuclear facility or of the site.

#### ***Licence Condition 11.2 of OPG licence PRSL 18.00/2031***

The licensee shall implement and maintain a decommissioning plan.

#### ***Licence condition G.5 of OPG licence PRSL 18.00/2031***

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

## A.2 Technical Basis

The technical basis for the recommendation presented in this CMD is compared against the following:

- CNSC Regulatory Guide G-206, [\*Financial Guarantees for the Decommissioning of Licensed Activities\*](#)
- CNSC Regulatory Guide G-219, [\*Decommissioning Planning for Licensed Activities\*](#)
- CSA Standard N294-09, *Decommissioning of Facilities Containing Nuclear Substances*

## **B. CURRENT LICENCE**

e-Doc 6416340 (WORD)

e-Doc 6504521 (PDF)



## NUCLEAR POWER REACTOR SITE PREPARATION LICENCE

### OPG NEW NUCLEAR AT DARLINGTON GENERATING STATION

---

- I) LICENCE NUMBER:** PRSL 18.00/2031 (Effective Date: October 12, 2021)
- II) LICENSEE:** Pursuant to section 24 of the *Nuclear Safety and Control Act* this licence is issued to:
- Ontario Power Generation Inc.**  
**700 University Avenue**  
**Toronto, Ontario M5G 1X6**
- III) LICENCE PERIOD:** This licence is valid from October 12, 2021 to October 11, 2031, unless suspended, amended, revoked or replaced.
- IV) LICENSED ACTIVITIES:**  
This licence authorizes the licensee to:
- (i) Prepare the Darlington Nuclear site, further described in OPG New Nuclear at Darlington Survey Drawings, NK054-DRAW-01210-00007 and NK054-DRAW-01210-00008, for the future construction and operation of a new nuclear generating station (hereinafter “the nuclear facility”) located in the Township of Darlington, in the Municipality of Clarington, in the Regional Municipality of Durham, in the Province of Ontario. Site preparation activities include:
    - a) construction of site access control measures;
    - b) clearing and grubbing of vegetation;
    - c) excavation and grading of the site to a finished elevation of approximately +78 masl (metres above sea level);
    - d) installation of services and utilities (domestic water, fire water, sewage, electrical, communications, natural gas) to service the future nuclear facility;
    - e) construction of administrative and support buildings inside the future protected area;
    - f) construction of environmental monitoring and mitigation systems; and,
    - g) construction of flood protection and erosion control measures.
  - (ii) Possess and use prescribed information that is required for, associated with, or arise from the activities described in (i).

---

**V) EXPLANATORY NOTES:**

- (i) Nothing in this licence shall be construed to authorize non-compliance with any other applicable legal obligation or restriction.
- (ii) Unless otherwise provided for in this licence, words and expressions used in this licence have the same meaning as in the *Nuclear Safety and Control Act* and associated Regulations.
- (iii) The “OPG DARLINGTON NEW NUCLEAR PROJECT (DNNP) POWER REACTOR SITE LICENCE (PRSL) Licence Conditions Handbook (LCH)” provides compliance verification criteria including the Canadian standards and regulatory documents used to verify compliance with the conditions in the licence. The LCH also provides information regarding delegation of authority, applicable versions of documents and non-mandatory recommendations and guidance on how to achieve compliance.

**VI) CONDITIONS:****G. General**

- G.1 The licensee shall conduct the activities described in Part IV of this licence in accordance with the licensing basis, defined as:
    - (i) the regulatory requirements set out in the applicable laws and regulations;
    - (ii) the conditions and safety and control measures described in the facility's or activity's licence and the documents directly referenced in that licence; and,
    - (iii) the safety and control measures described in the licence application and the documents needed to support that licence application.unless otherwise approved in writing by the Canadian Nuclear Safety Commission (CNSC, hereinafter “the Commission”).
  - G.2 The licensee shall give written notification of changes to the facility or its operation, including deviation from design, operating conditions, policies, programs and methods referred to in the licensing basis.
  - G.3 The licensee shall control the use and occupation of any land within the exclusion zone.
  - G.4 The licensee shall provide, at the nuclear facility and at no expense to the Commission, suitable office space for employees of the Commission who customarily carry out their functions on the premises of that nuclear facility (onsite Commission staff).
  - G.5 The licensee shall maintain a financial guarantee for decommissioning that is acceptable to the Commission.
  - G.6 The licensee shall implement and maintain a public information and disclosure program.
-

**1. Management System**

1.1 The licensee shall implement and maintain a management system.

**2. Human Performance Management**

2.1 Not applicable.

**3. Operating Performance**

3.1 The licensee shall implement and maintain an operations program.

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

**4. Safety Analysis**

4.1 The licensee shall implement and maintain a safety analysis program.

**5. Physical Design**

5.1 The licensee shall implement and maintain a design program.

**6. Fitness for Service**

6.1 Not applicable.

**7. Radiation Protection**

7.1 The licensee shall implement and maintain a radiation protection program.

**8. Conventional Health and Safety**

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

**9. Environmental Protection**

9.1 The licensee shall implement and maintain an environmental protection program.

**10. Emergency and Management and Fire Protection**

10.1 The licensee shall implement and maintain an emergency preparedness program.

10.2 The licensee shall implement and maintain a fire protection program.

**11. Waste Management**

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

11.2 The licensee shall implement and maintain a decommissioning plan.

---

**12. Security**

12.1 The licensee shall implement and maintain a security program.

**13. Safeguards and Non-Proliferation**

13.1 The licensee shall implement and maintain a safeguard program.

**14. Packaging and Transport**

14.1 Not applicable.

**15. Site Specific**

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 have the documents required for site preparation accepted by the Commission, or a person authorized by the Commission, prior to the commencement of the licensed activities described in Part IV (i) of this licence.

SIGNED at OTTAWA, October 12, 2021

Velshi,  
Rumina



Digitally signed by Velshi, Rumina  
DN: C=CA, O=GC, OU=CNSC-CCSN, CN="Velshi, Rumina"  
Reason: I am the author of this document  
Location: your signing location here  
Date: 2021-10-12 10:10:29  
Foxit PhantomPDF Version: 9.7.1

---

**Rumina Velshi**  
**President**  
**Canadian Nuclear Safety Commission**

---