



Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada



# Ontario Power Generation: Application to Renew the Licence to Prepare Site for the Darlington New Nuclear Project (DNNP)

## CNSC Staff Presentation



### Commission Hearing

June 10-11, 2021

**CMD 21-H4.A**

e-Doc 6522189 (PPTX)

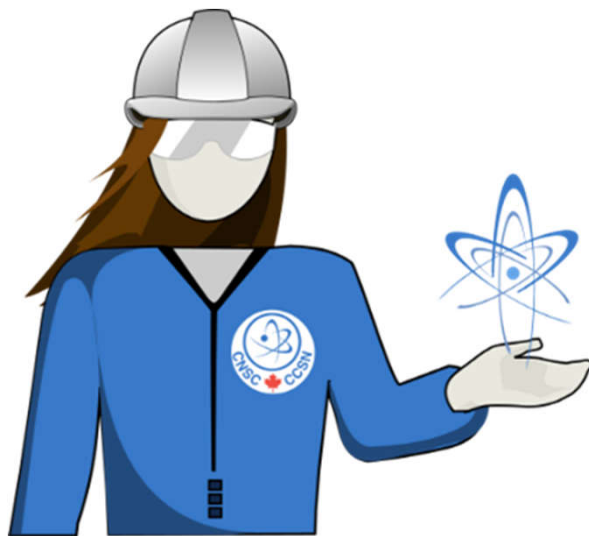
e-Doc 6569476 (PDF)

[nuclearsafety.gc.ca](http://nuclearsafety.gc.ca)



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# Presentation Outline



- Project Location and History
- Assessment of Renewal Application
- OPG's Performance
- Other Matters of Regulatory Interest
- Proposed Licence
- Conclusions
- Recommendations



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## Purpose of Hearing

### **Ontario Power Generation (OPG) is requesting that the Commission:**

- Renew the DNNP licence to prepare site for a period of 10 years from the date of issuance

### **CNSC staff recommend that the Commission:**

- Renew the proposed licence, PRSL 18.00/2031
- Authorize delegation of authority as set out in CMD 21-H4



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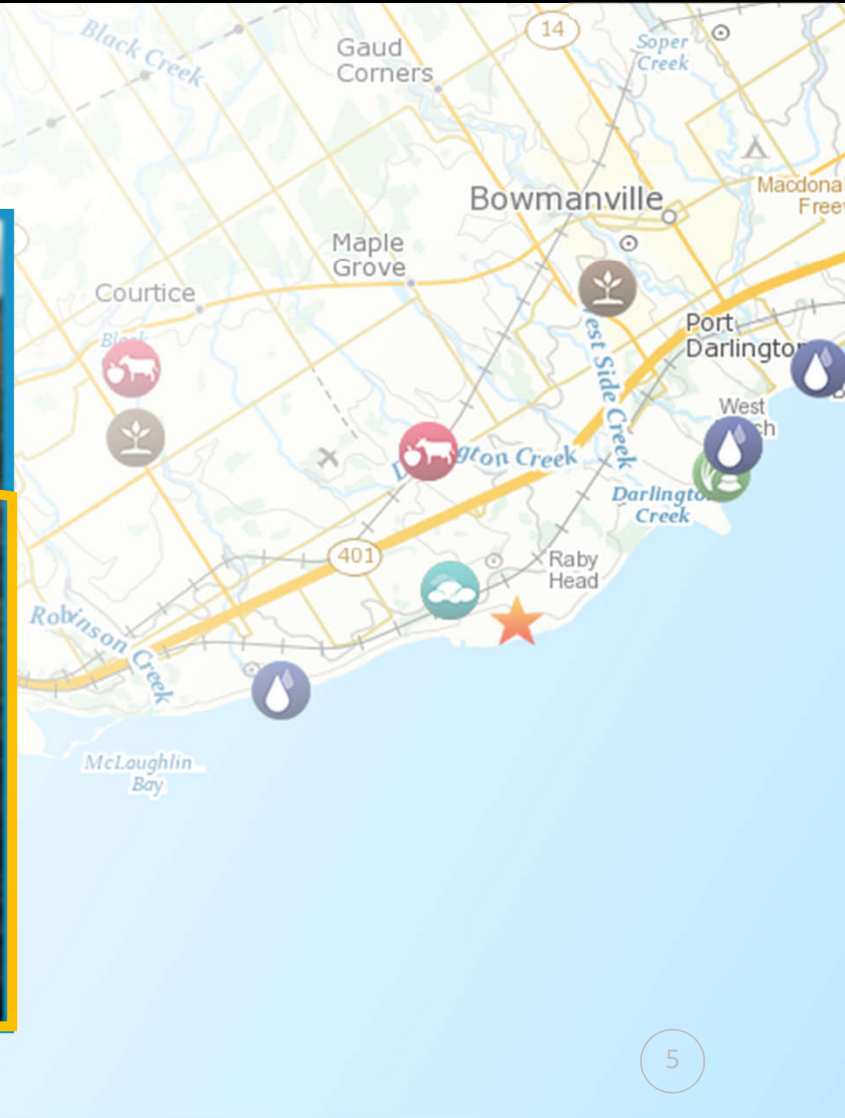
# PROJECT LOCATION AND HISTORY



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Existing Darlington Nuclear Generating Station Site

Darlington New Nuclear Project (DNNP) Site





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# CNSC Licence under the *Nuclear Safety and Control Act (NSCA)*

The *NSCA* requires a licence for the following activities:

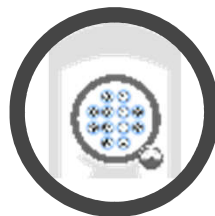
**Darlington New  
Nuclear Project**



**Site Preparation**



**Construction**



**Operation**



**Decommissioning**



**Abandonment**





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# Project Chronology

Date	Activity
2006	OPG applied for a Power Reactor Licence to Prepare Site (PRSL) and the Environmental Assessment (EA) commenced under (CEAA 1992)
2009	OPG submitted an Environmental Impact Statement (EIS) and revised licence application
2012	Joint Review Panel (JRP) issued a licence for a term of 10 years from the date of issuance
2020	OPG submitted an application to renew the (DNNP) licence to prepare site



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# Environmental Assessment

## The 2012 JRP determined that:

*“the proposed project is not likely to cause significant adverse environmental effects, taking into account the JRP recommendations and implementation of proposed mitigation measures”.*

## The JRP directed commitments to:

- OPG
- Federal authorities
- Government of Ontario and
- Municipality of Clarington



DNNP Joint Review Panel (2012)

***CNSC staff verify, through compliance activities, that the environment and the health of persons are protected***





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# JRP Commitments Directed to OPG

**OPG's Commitments Report describes and tracks commitments made:**

- During the JRP process
- By the Government of Canada response to the JRP
- As a result of applications to other regulatory bodies

**OPG's Commitments Report** is a licencing basis document.



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## JRP Commitments Completed by OPG during the Licence Term

**During the licence term, CNSC staff reviewed and verified that OPG completed the following commitments:**

- Updated site survey drawings
- Archeological excavation reports
  - The reports concluded that the sites were excavated and documented appropriately and no further actions were required
  - Reports accepted by Ontario Ministry of Tourism, Culture and Sport
- Cost-benefit of cooling tower versus once-through condenser cooling

***Commitments can extend throughout the lifecycle of the project***



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# REVIEW OF LICENCE RENEWAL APPLICATION



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# CNSC Review of the Licence Renewal Application

OPG submitted its renewal application on **June 29, 2020**, requesting a 10 year term.

## **CNSC staff assessed and verified that:**

- OPG's application complies with regulatory requirements, including: the NSCA, associated regulations, guides and standards for applicable safety and control areas (SCAs)
- OPG's past performance was satisfactory
- OPG's public information program and engagement activities are acceptable
- OPG's application for renewal is within the bounds of the 2012 EA

***CNSC staff assessed and concluded OPG's renewal application complies with regulatory requirements***



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# Licence to Prepare Site Activities

## **OPG has applied to conduct the following activities:**

- Construct site access control measures
- Clear and grub vegetation, excavate and grade the site
- Install services and utilities
- Construct support buildings inside the future controlled access area
- Construct environmental monitoring and mitigation systems
- Construct flood protection and erosion control measures

***OPG intends on carrying out these activities during the proposed licence term***



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# CNSC STAFF ASSESSMENT OF RENEWAL APPLICATION

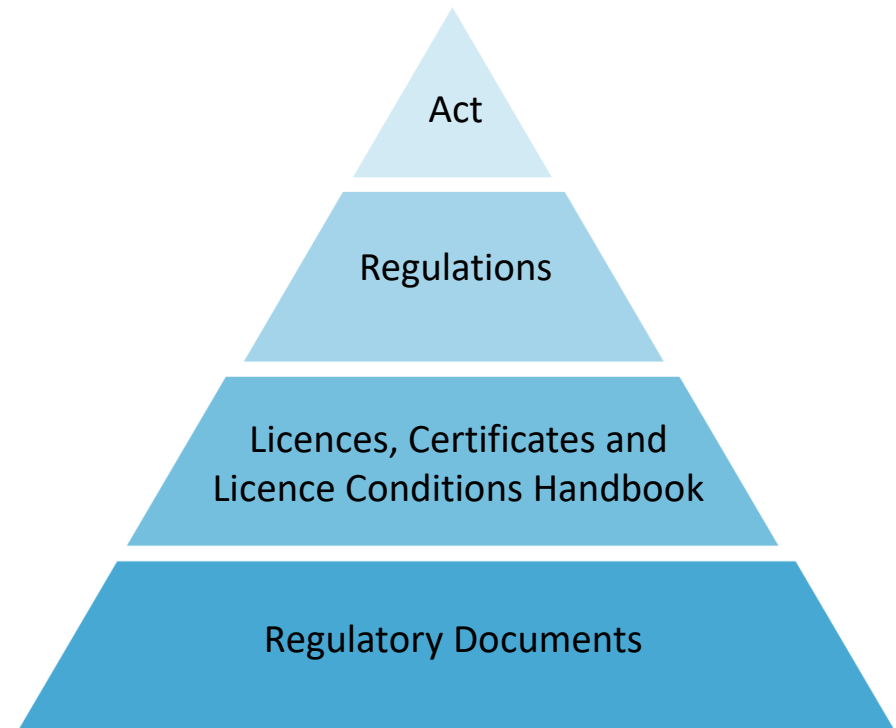




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# CNSC Staff Assessment of Renewal Application

- *Nuclear Safety and Control Act* and applicable regulations
- Licence includes licence activities and licence conditions that establish site/activity specific requirements
- Licence Condition Handbook contains compliance verification criteria
- Regulatory documents, CSA standards and international guidance provide clarity on expectations





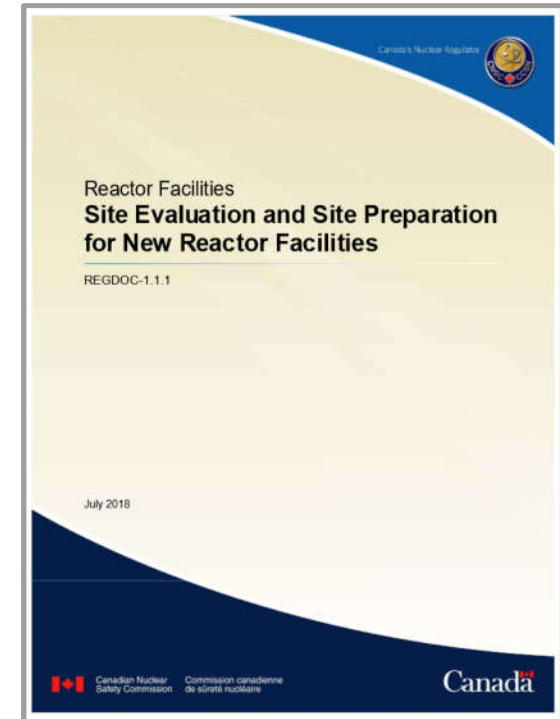
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# Site Evaluation and Preparation

**Site Evaluation** is the systematic assessment to determine if the site is suitable for the nuclear facility over the life span of the facility.

**Site Preparation** ensures the adequacy of measures proposed for the conduct of the licensed activities for the protection of human health, safety, security and the environment.

CNSC staff verified OPG's application complies with REGDOC 1.1.1.



CNSC REGDOC 1.1.1

***CNSC staff assessment determined the site remains suitable***



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# Assessment of Safety and Control Areas

CNSC staff evaluated and reported on the 11 applicable SCAs in CMD 21-H4.

CNSC staff presentation focusses on 5 key SCAs for site preparation:

- Management system
- Operating Performance
- Safety Analysis
- Physical Design
- Environmental protection

Highlights of the remaining 6 SCAs are provided on slide 24.





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# Management System

**CNSC staff evaluated OPG's management system framework and conclude that:**

- OPG's management system meets regulatory requirements for site evaluation activities
- OPG's licence application outlines the submission of additional site specific program documents, which will be used by CNSC staff for compliance activities
- CNSC staff continue to monitor OPG's implementation of the management system through regular meetings and desktop reviews

***OPG's management system complies with regulatory requirements***



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# Operating Performance

- CNSC staff verified and concluded that OPG's licence renewal application for site preparation activities is satisfactory and in compliance with regulatory requirements
- For the proposed licence term, as part of CNSC compliance verification, CNSC staff will conduct inspections and review OPG's submissions to ensure site preparation activities remain within the licensing basis

***OPG's submissions on operating performance in support of licence renewal, comply with regulatory requirements***



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## Safety Analysis

CNSC staff assessed and conclude that the following hazard assessments meet the requirements of REGDOC 1.1.1:

- Seismic, meteorological and biological hazards
- Assessments of natural external and human induced hazards

As part of the compliance program, CNSC staff will assess and verify updated hazard assessments throughout the life cycle of the facility.

***OPG's safety analysis program satisfies regulatory requirements for site preparation activities***





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## Physical Design

CNSC staff assessed and conclude that OPG's plan and program for physical design are appropriate for site preparation.

CNSC staff confirmed that OPG's revised site characterization data demonstrate there is no new or changed information that would impact on:

- The proposed exclusion zone
- Civil structures and works
- Layout of areas, structures and systems

***OPG's physical design submissions comply with the regulatory requirements for site preparation activities***



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## Environmental Protection (1)

CNSC staff reviewed and conclude that OPG's environmental protection program addresses the requirements of:

- Site preparation activities
- Environmental monitoring
- EA follow up program
- Applicable commitments made during the JRP process



Arial photograph of Darlington Nuclear Generating station and location of the Darlington New Nuclear Project



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## Environmental Protection (2)

- CNSC staff assessed and evaluated OPG submissions to address JRP commitments, including studies of species at risk and the aquatic environment
- OPG identified new species at risk in the project area

### **CNSC staff have assessed and conclude OPG has:**

- The appropriate mitigation measures to protect species at risk
- An acceptable plan in place to obtain the necessary permits from other regulatory agencies

***OPG's environmental protection program fulfills regulatory requirements***



Northern Myotis (bat) and Common Snapping Turtle are examples of species at risk at the DNNP site





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## Remaining SCAs Assessed in OPG's Renewal Application

**CNSC staff evaluated and verified that the measures proposed for the following SCAs complies with regulatory requirements:**

Radiation Protection

Waste Management

Conventional Health and Safety

Security

Emergency Preparedness  
and Fire Protection

Safeguards and  
Non-Proliferation



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# CNSC STAFF ASSESSMENT OF OPG PERFORMANCE



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# Safety and Control Areas Performance

SCAs are technical areas used across regulated facilities to assess, evaluate, verify and report on licensee performance.

OPG maintained a satisfactory rating across the 11 applicable SCAs during the current licence period.

The following SCAs are not applicable:

- **Human Performance Management** - covered in Management System
- **Fitness for Service** - no structures or systems at site
- **Packaging and Transport** - no nuclear materials or devices

Safety and Control Areas	Rating Level
Management System	SA
Operating Performance	SA
Safety Analysis	SA
Physical Design	SA
Radiation Protection	SA
Conventional Health and Safety	SA
Environmental Protection	SA
Emergency Management and Fire Protection	SA
Waste Management	SA
Security	SA
Safe guards and Non-Proliferation	SA





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## OTHER MATTERS OF REGULATORY INTEREST



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# Other Matters of Regulatory Interest

- Public Outreach
- Indigenous Engagement
- Participant Funding
- Interventions
- Decommissioning
- Financial guarantees



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## Public Outreach

### During the licence term CNSC staff:

- Regularly posted information about the DNNP on [nuclearsafety.gc.ca](http://nuclearsafety.gc.ca)
- Provided annual updates to the Commission during the *Regulatory Oversight Report for Nuclear Generating Sites*
- Conducted webinars to provide information on OPG's licence renewal application
- Confirmed OPG engages key stakeholders as part of its Public Information Program

***CNSC staff reviewed and conclude that OPG's program for public engagement complies with REGDOC 3.2.1. Public Information and Disclosure***



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# Indigenous Engagement

- CNSC staff proactively shared information with all Indigenous groups whose traditional or treaty territories overlap with the project area
- Notification of proposed licence renewal letters and Participant Funding were sent to interested Indigenous groups
- CNSC held meetings with Indigenous groups to discuss the project and the application
- CNSC is committed to forge partnerships with Indigenous groups

***CNSC staff continue to engage with interested Indigenous groups***



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# Participant Funding Program

**CNSC awarded \$81,452.38 to the following 7 recipients:**

- Mohawks of the Bay of Quinte
- Curve Lake First Nation
- Dr. Jerry Cuttler
- Northwatch
- Canadian Association of Nuclear Host Communities
- Canadian Environmental Law Association
- Canadian Nuclear Workers Council



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## Decommissioning & Financial Guarantee

- CNSC staff evaluated and accepted OPG's commitment to develop a Preliminary Decommissioning Plan and financial guarantee, in a form that is acceptable to the Commission, prior to initiation of site preparation activities
- A preliminary decommissioning plan and financial guarantee are required to meet regulatory requirements and must be reassessed every 5 years or if there is material change

***A Commission approved financial guarantee is required before OPG can conduct site preparation activities***





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# Interventions

**The CNSC received 55 interventions.**

## **Main themes included:**

- OPG's future plans
- Suitability of the site
- Conclusions regarding the EA and JRP processes
- The need to include Indigenous knowledge
- Support for the licence renewal



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# PROPOSED LICENCE



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# Overview of the Proposed Licence

## Proposed Power Reactor Site Preparation Licence

- 10 year term
- Addition of licence condition 15.1 and 15.2
- Radiation and Environmental Protection licence conditions were modified to remove action levels as these are not required at the site preparation stage



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## Regulatory Focus Areas

### **CNSC staff will continue to:**

- Evaluate licensee performance across the 11 applicable SCAs
- Conduct inspections according to CNSC's compliance verification program
- Review and assess compliance reports, licensee programs and site activities
- Verify and monitor licensee's implementation of CNSC regulatory documents in accordance with implementation plans

***CNSC staff report annually to the Commission through the Regulatory Oversight Report for Nuclear Generating Sites***



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## CNSC STAFF CONCLUSIONS AND RECOMMENDATIONS



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## CNSC Staff Conclusions

**Based on the technical assessment of OPG's renewal application, CNSC staff conclude that:**

- **OPG is qualified** to carry on the activities requested in this licence renewal application
- The requested activities are **within the licensing basis and bounds of the environmental assessment**
- OPG's site preparation activities would **remain protective** of the health and safety of persons and the environment



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# CNSC Staff Recommendations

## **CNSC staff recommend that the Commission:**

- Renew the Power Reactor Site Preparation Licence (PRSL 18.00/2031)
- Delegate authority as set out in CMD 21-H4



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