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## **Oral Presentation**

## **Exposé oral**

### **Written submission from the Municipality of Clarington**

### **Mémoire de la Municipalité de Clarington**

In the Matter of the

À l'égard de

#### **Darlington New Nuclear Project**

#### **Projet de nouvelle centrale nucléaire de Darlington**

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Application to renew the nuclear power reactor site preparation licence for the Darlington New Nuclear Project

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Demande de renouvellement du permis de préparation de l'emplacement d'une centrale nucléaire pour le projet de nouvelle centrale nucléaire de Darlington

#### **Commission Public Hearing**

#### **Audience publique de la Commission**

**June 10, 2021**

**10 juin 2021**

# Clarington

April 30, 2021

Senior Tribunal Officer, Secretariat  
Canadian Nuclear Safety Commission  
Ottawa, ON K1P 5S9

Dear Senior Tribunal Officer,

**Darlington New Nuclear, Site Preparation License, Ref 2021-H-04 and 2021-H-05**  
Our File: PLN 26.15.1

The Municipality of Clarington as Host to the Darlington New Nuclear have reviewed with interest the request for renewal of the Site Preparation License. Please find attached the report that was presented to the Planning and Development Committee on April 26, 2021. The recommendation and resolution within the Report will not be ratified until May 3, 2021 which is the deadline for submissions. Please consider this as advance notice of our intention to appear at the Hearing in support of Ontario Power Generations application.

Mayor Adrian Foster, Fire Chief Weir and Faye Langmaid, Manager of Special Projects will be in attendance to provide a presentation and respond to questions from the panel.

Yours sincerely,



Mayor Adrian Foster

cc: Mayor and Members of Council  
Andy Allison, CAO  
Department Heads  
Faye Langmaid, Manager of Special Projects



## Staff Report

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<b>Report To:</b>	<b>Planning and Development Committee</b>	
<b>Date of Meeting:</b>	April 26, 2021	<b>Report Number:</b> PDS-025-21
<b>Submitted By:</b>	Ryan Windle, Director of Planning and Development Services	
<b>Reviewed By:</b>	Andrew C. Allison, CAO	<b>By-law Number:</b>
<b>File Number:</b>	PLN 26.15.1	<b>Resolution#:</b>
<b>Report Subject:</b>	Darlington New Nuclear Build, License Renewal Hearing	

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### Recommendation:

1. That Report PDS-025-21 be received for information; and
2. That Council adopt the following resolution:

That the Darlington Nuclear Generating Station has been a significant part of the Municipality of Clarington since the 1980s, and has provided many positive benefits to the community with minimal adverse effects on the natural environment;

That the Municipality of Clarington Council and Staff have attended numerous meetings and information sessions with respect to the Darlington New Nuclear Power Plant Project and are therefore very knowledgeable with respect to the Project; and

That the Municipality of Clarington retained a qualified team of professionals to undertake a detailed peer review of the draft Environmental Impact Statement for the Darlington New Nuclear Power Plant Project and, on the basis of this peer review, can state with confidence that the Environmental Impact Statement meets the requirements of the Guidelines for the preparation of the document and that it satisfactorily addresses the Municipality's issues and concerns with respect to the Project;

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That the Municipality of Clarington's peer review of the Environmental Impact Statement for the Darlington New Nuclear Power Plant Project agreed with the study's conclusions;

That Council and the residents of the Municipality of Clarington have been steadfast in their support for the proposed Darlington New Nuclear Power Plant Project and are eager to have nuclear power generation continue as a positive presence in our community;

That Council and the community of Clarington are very supportive of the use of Small Modular Reactors (SMR) as it would avoid the use of cooling towers, thus minimizing any associated socio-economic impacts for Clarington and Durham Region, for the Darlington New Nuclear Power Plant Project;

That Clarington Staff has worked with representatives of the Canadian Nuclear Safety Commission (CNSC), Ministry of Municipal Affairs and Housing, Durham Region and Ontario Power Generation to ensure that sensitive land uses are addressed within the three-kilometer buffer zone;

That many traffic and transportation network improvements have been implemented over the past decade to address potential deficiencies within the network and Clarington Staff have reviewed the findings of the updated Traffic Assessment Report, September 2019; and

That the Council of the Municipality of Clarington hereby advises the CNSC that it supports the Darlington New Nuclear Power Plant Project and strongly supports the use of SMR technology;

3. That the Mayor and Senior Staff accept the invitation of the CNSC to appear at the hearing in June to outline the Municipality's support for the project, our involvement and comments as set out in Report PSD-010-11 and reaffirmed in this Report PDS-025-21; and
4. That the Canadian Nuclear Safety Commission and Ontario Power Generation and all interested parties be notified of Council's decision.

## **Report Overview**

Ontario Power Generation has applied for renewal of their Canadian Nuclear Safety Commission license for site preparation in anticipation of the Darlington New Nuclear Plant. Clarington participated in the review of the Environmental Assessment and fully supports the findings and the works that have occurred over the past decade.

It is recommended that Clarington continue to support and promote the development of New Nuclear at the Darlington site and particularly the development of Small Modular Reactors.

## **1. Background**

### **Purpose of the Report**

- 1.1 To advise Council of the notice and invitation from the Canadian Nuclear Safety Commission (CNSC) to submit comments and attend the public hearing on June 9-10, 2021.
- 1.2 To inform Council of the Municipality's previous comments on the New Nuclear site preparation licence and updates that have taken affect over the decade.

### **The Project**

- 1.3 Ontario Power Generation (OPG) was directed by the Ontario Ministry of Energy in June 2006 to begin the federal approvals process (including an environmental assessment (EA)) for new nuclear units at an existing site. OPG initiated this process, and in September 2006 submitted an application for a Licence to Prepare the Site to the CNSC for a new nuclear power generating station at the Darlington Nuclear site, located in the Municipality of Clarington on the north shore of Lake Ontario, in the Region of Durham.
- 1.4 The Darlington New Nuclear Plant (DNNP) is proposed to be located primarily on the easterly one-third of the Darlington Nuclear site, with reactor buildings and other related structures located south of the CN rail line. The proposed development involves the construction and operation of four nuclear reactor units supplying up to 4,800 Megawatts (MW) of electrical capacity to meet the baseload electrical requirements of Ontario. Figure 1 shows the site of the DNNP and the existing Darlington Nuclear Generating Station in proximity to St. Marys Cement and Bowmanville's residential area.



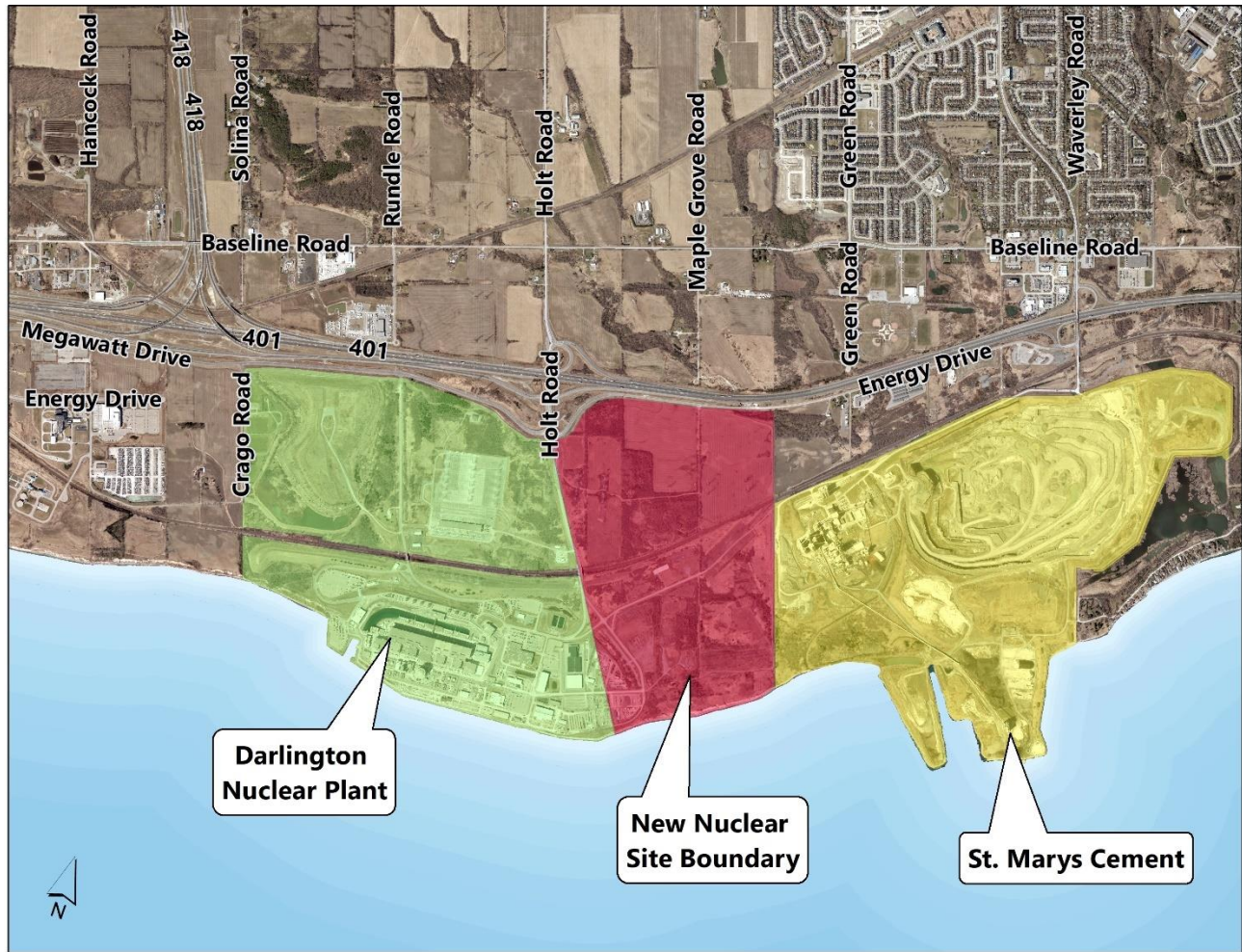


Figure 1 is the New Nuclear Site within the OPG lands.

### CNSC Licence

- 1.5 The EA considered the three phases of the DNNP (Site Preparation and Construction, Operation and Maintenance, and Decommissioning and Abandonment) extending over approximately 140 years. OPG was first granted approval by the CNSC for a Site Preparation license in 2012. The license has a ten-year lifespan and is now being considered for renewal.
- 1.6 CNSC is holding the hearing to consider OPG's application to renew its nuclear power reactor site preparation licence for the DNNP. The licence expires in August 2022.
- 1.7 The current licence authorizes OPG to prepare the Darlington Nuclear site for the potential future construction and operation of a new nuclear generating station. A separate application and licensing process, with public participation, will be necessary should OPG decide to go forward with the construction and operation of new nuclear reactors within the Darlington site.

- 1.8 OPG is currently managing the site, focusing on items with longer lead times, such as the Bank Swallow Program, aquatic environment characterization and once-through condenser cooling.
- 1.9 OPG is seeking a 10-year licence renewal and amendment of its licensing basis to include modern regulatory references as well as modern codes and standards.

### **Clarington's Prior Actions**

- 1.10 During the preparation of the EA by OPG, Clarington undertook a Peer Review and provided comments to OPG to strengthen their EA submission ([Report PSD-073-09](#)), a subsequent report provided support for the OPG recommended once-through lake water cooling system and strongly opposed the use of cooling towers ([Report PSD-076-10](#)). [Report PSD-010-11](#) set out Clarington's support for the DNNP project. Clarington also entered into a Host Community Agreement ([Report CAO-003-09](#)). Clarington's Mayor and Senior Staff appeared in support of OPG's application during the March 2011 CNSC Hearing.

## **2. Progress on Issues**

### **CNSC Recommendations – Land Use**

- 2.1 As a result of the March 2011 CNSC hearing and review, Recommendations 43, 44, 45 and 59 were in whole or part directed to the Municipality of Clarington. We were to address land use planning in and around nuclear generating stations and regarding sensitive residential development and public facilities (e.g. schools and recreation) within a three-kilometre buffer. As a result of these recommendations CNSC staff-initiated discussions with representatives from the Ministry of Municipal Affairs and Housing, Durham Region, Clarington and OPG. The result of this process were changes to the Provincial Policy Statement (PPS) in 2014 to address the inclusion of electricity generation facilities under the definitions of development, infrastructure and major facilities such that Policies 1.2.6.1 and 1.2.6.2c would apply for sensitive land uses.
- 2.2 Once included in the PPS, Clarington amended their Official Plan (Policy 3.7.9) to address the appropriate setbacks from the Nuclear Plant for sensitive land uses. To ensure this is implemented, any development applications within three kilometres of the OPG site, using the centre of the site, are circulated to OPG and CNSC for their comments.

**Traffic Improvement Implementation**

2.3 For renewal of the license, OPG is required to show it has taken reasonable steps to update all studies previously completed as part of the licensing process to account for any changes since 2009. Since that time, Highway 418 has been built, the Holt Road Interchange has been totally redeveloped and South Service Road has been shifted south. The following table from the updated Traffic Assessment Report outlines the improvements to intersections that have occurred over the past decade.

**Table 3-1 from the Traffic Assessment Report      Intersection Changes – 2009 to 2019**

Intersection	Applied Changes Since 2009
King Street at Courtice Road	Introduction of an exclusive southbound right-turn lane
King Street at Solina Road	Southbound left-turn prohibited (temporary)
King Street at Maple Grove Road	Signalization of the intersection Introduction of a southbound left-turn lane and channelized southbound right-turn lane Introduction of a northbound left-turn lane and channelized northbound right-turn lane
Highway 401 Eastbound Ramps at Courtice Road	Intersection modified to have an exclusive left-turn lane and a shared through/right-turn lane at the off-ramp On-ramp relocated to be aligned with on-ramp (currently under construction, assessed as existing as part of this study)
Courtice Road at Energy Drive	New stop-control Intersection (as Energy Drive did not exist previously)
Park Road at Energy Drive	Previously Park Drive at South Service Road Introduction of a westbound left-turn lane Introduction of a northbound right-turn lane
Highway 401 Westbound Ramps at Holt Road	Change from stop-control to roundabout-control Additional through lanes on both approaches of Holt Road with removal of southbound left-turn lane Introduction of westbound left-turn lane
Highway 401 Eastbound Ramps at Holt Road	Change from stop-control to roundabout-control Intersection now separate from what was previously South Service Road (i.e. no westbound receiving lane) Additional through lanes on both approaches of Holt Road with removal of northbound left-turn lane
Energy Drive at Holt Road	New roundabout intersection
Highway 401 Eastbound	Previously Highway 401 Eastbound Ramps at



Intersection	Applied Changes Since 2009
Ramps at Energy Drive*	South Service Road

\*Note: Energy Drive (previously South Service Road) at its intersection with the Highway 401 Eastbound ramps, as well as the Highway 401 Westbound off-ramp at its intersection with Bowmanville Avenue, were previously assessed with additional turning lanes per the 2010 study (compared to the 2019 existing conditions).

- 2.4 Clarington Staff participated along with MTO, the Region, OPG, Metrolinx and others on the Transportation Working Group to ensure implementation of the traffic improvements in Table 3-1. The updated Traffic Assessment Report was completed in 2019 and submitted to Clarington staff for comment. Public Works staff have reviewed and accepted the report.
- 2.5 The 2019 Traffic Assessment Report also analyzed the traffic associated with the progress of the DNNP through its various stages of construction and operation. It is projected to have a minor impact on the traffic operations within the study area road network under the 2022 future total conditions. The additional traffic is projected to have a negligible impact on delay at the signalized study intersections during the study periods. Additionally, all turning movements at the stop-controlled intersections are projected to remain under capacity with a Level of Service D or better, except for select turning movements at the intersection of Energy Drive at Courtice Road.
- 2.6 The Traffic Assessment Report modelled five-year increments of traffic generation for all OPGs activities. The traffic generation model considered the DNNP site, DNGS operations (staff), Refurbishment contractors and OPG Headquarters Campus. In the modelling forecast it is anticipated that by 2031 a signalized intersection will be necessary at Holt and Baseline Roads. This recommendation will have to be reviewed in the context of a future update to the Clarington Master Transportation Plan to account for growth in the area.

**OPGs Application**

- 2.7 OPG’s current Power Reactor Site Preparation Licence is for up to four reactor units with a maximum net electrical output of 4,800 megawatt (MW).
- 2.8 Site preparation activities listed in the renewal application 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.
- 2.9 OPG's application for licence renewal replicates their original 2009 application. However, the new nuclear project development now being proposed is much smaller at 300 to 400 MW net facility output. OPG in their Notice of Intent for Submission, dated December 2, 2020 to the CNSC, notified the regulator that they "intend to apply for a licence to construct for a grid-scale Small Modular Reactor (SMR) facility." SMRs are in the range of 300-400 MW net facility output and would not require cooling towers. SMRs are small nuclear reactors aimed at new markets to tackle global needs for safe, clean, economic energy.
- 2.10 Subsequent to the EA approval in 2011, OPG prepared an options assessment for condenser cooling water and concluded that once through cooling with lake water was the best available technology economically achievable. OPG is now working towards the construction of SMRs for DNNP, which is a smaller project in scope. OPG undertook a study in 2020 to assess the cost competitiveness for a SMR scope. OPG will need to demonstrate the performance criteria for once through cooling can be met during the detailed design stage and as part of the application for a licence to construct.
- 2.11 OPG is considering potential options for the on-grid deployment of SMR technology with three SMR technology development companies. OPG is positioning themselves to lead the development and deployment of grid-scale SMRs.
- 2.12 OPG has not selected a technology partner, or reactor design, for the DNNP, that is a future step. OPG continues to be open to potential opportunities, including from other developers. They are seeking a strong business case. The specific technology would be the subject of a subsequent application to CNSC for a license to construct. OPG has committed to provide CNSC with a Licence to Construct Plan document by June 30, 2021.

### **3. Clarington's Comments**

- 3.1 Clarington supports [Canada's SMR Action Plan](#) launched in December 2020. Clarington supports OPG's development of the first on-grid SMR application in Canada, if that is the technology selected.
- 3.2 Durham Region is the home of the Centre for Canadian Nuclear Sustainability and is a hub of nuclear academia, engineering and manufacturing. The Region is positioned to be the centre of excellence in Canada for nuclear generation, research and development, supply chain, and deployment of innovative nuclear technology, nuclear waste minimization and fuel recycling.
- 3.3 Clarington values OPG's continued dedication to community organizations, our post-secondary institutions, local procurement and the relocation of their administrative headquarters to Clarington.

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- 3.4 As a leader in municipal efforts to address climate change, Clarington appreciates that the clean electricity supply provided by the DNNP will enable our community to pursue a strategy to help meet Clarington's Climate Change initiatives and the Durham Community Energy Plan target of 80% below 2007 levels by 2050 for greenhouse gas (GHG) emissions.
  - 3.5 Clarington is pleased to work in partnership with OPG on various initiatives including public awareness, emergency management, transportation network improvements, potassium iodide (KI) pill distribution, and on the Darlington Community Advisory Council. Clarington is committed to strengthening this partnership.
  - 3.6 Clarington has implemented land use policies and protocols to address the restriction of sensitive land uses within the three kilometre buffer from the centre of the site. Clarington is committed to ensuring appropriate land use and emergency planning.

## **4. Concurrence**

- 4.1 This report has been reviewed by the Director of Public Works and the Fire Chief who concur with the recommendation.

## **5. Conclusion**

- 5.1 The effectiveness of Clarington and OPGs ongoing partnership is reflected in our ongoing open dialogue on a range of issues. OPG provides briefings and updates to Council and the community on a regular basis and at the Darlington Community Advisory Council meetings.
- 5.2 It is respectfully recommended Council endorse the Resolution outlined in Recommendation #2. That Staff register and provide this Report as Clarington's written submission to the CNSC Secretariat by May 3, 2021 indicating the Mayor and Senior Staff will be attending the hearing as requested.
- 5.3 Inform CNSC, Clarington has confidence in the approved EA from 2010 and support OPGs application to renew its site preparation licence.

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Staff Contact: Faye Langmaid, Manager of Special Projects, 905-623-3379 x2407 or flangmaid@clarington.net.

Attachments:

Not Applicable

Interested Parties:

List of Interested Parties available from Department.