

September 16, 2015

NK38-00531 P
NK38-CORR-00531-17583 P

Mr. M. Leblanc
Commission Secretary
Canadian Nuclear Safety Commission
P.O. Box 1046
280 Slater Street
OTTAWA, Ontario
K1P 5S9

Dear Mr. Leblanc:

**Darlington NGS - Supplemental OPG Written Submission in Support of
Darlington's Power Reactor Operating Licence Renewal**

Pursuant to the timeline established in Reference 1, the purpose of this letter is to submit supplementary information to the Commission for the Part 2 Hearing to be held in Clarington from November 2 to 5, 2015.

Attachment 1 provides Commission Member Document (CMD) 15-H8.1B, "*Supplemental OPG Written Submission*". The CMD provides follow-up responses and/or clarification on items discussed at the Part 1 Hearing in Ottawa on August 19, 2015.

Should you have request further information, please contact Mr. Doug Coleman, Manager Regulatory Affairs at (905) 623-6670 ext. 1093.

Sincerely,



Brian Duncan
Senior Vice President
Darlington Nuclear
Ontario Power Generation Inc.

Attach.

cc: Ms. K. Hazelton - CNSC (Darlington)

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Mr. F. Rinfret

OPG Proprietary

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- Reference:
1. CNSC email, Interventions/Interventions (CNSC/CCSN) to B. Duncan, "Deadlines for Public Hearing Part-2", August 26, 2015, CD# NK38-CORR-00531-17566.

ATTACHMENT 1

OPG letter B. Duncan to F. Rinfret, "Darlington NGS - Supplemental OPG Written Submission
in Support of Darlington's Power Reactor Operating Licence Renewal"

CD# NK38-CORR-00531-17583

Supplemental OPG Written Submission

Prepared by: O. Naeem
Checked by: D. Coleman

Summary of Regulatory Commitments, Regulatory Obligations and Regulatory Management Actions Made/Concurrence Requested

NK38-CORR-00531-17583

Submission Title: Darlington NGS - Supplemental OPG Written Submission in Support of Darlington's Power Reactor Operating Licence Renewal

Regulatory Commitments (REGC):

No.	Description	Date to be Completed
	None	

Regulatory Management Action (REGM):

No.	Description	Date to be Completed
	None	

Regulatory Obligation Action (REGO):

No.	Description	Date to be Completed
	None	

Concurrence Requested: None.

SUPPLEMENTAL OPG WRITTEN SUBMISSION

In Support of the Renewal of Darlington's Power Reactor Operation Licence



PROVIDING SAFE, RELIABLE, CLEAN GENERATION

CMD 15-H8.1B

PART 2 HEARING

NOVEMBER 2-5, 2015

ONTARIOPOWER
GENERATION

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1.0 INTRODUCTION

OPG is requesting a licence term of approximately 13 years, to December 1, 2028, to cover life extension activities including refurbishment of all four reactor units in order to ensure Darlington NGS can continue to provide safe and reliable electricity to Ontarians for many more years.

OPG has demonstrated through our strong management of the Darlington plant, as measured by both CNSC staff and international peer evaluations, that we can operate Darlington safely and reliably over the long term. Our excellent sustained performance, combined with our robust programs and significant enhancements in safety improvements, support our request for a 13-year licence term.

The purpose of this Commission Member Document (CMD) is to provide supplementary information to the Commission with regards to the Darlington Power Reactor Operating Licence Renewal following the Part 1 Hearing in Ottawa on August 19, 2015.

Specifically, there was a need to provide follow-up responses and/or clarification in the areas of Refurbishment organization and integration, public survey results, supply chain quality assurance, nuclear material reporting, and Potassium Iodide (KI) pill predistribution.

Additional information on improved public access to licence renewal documentation has also been included, as well as further context and rationale on the requested 13-year licence term.

Items requiring follow-up discussion and/or clarification have been identified in Section 2, including relevant quotations from the hearing transcript to provide context, followed by OPG's response to each item.

2.0 FOLLOW-UP ITEMS

2.1 Darlington Station and Refurbishment Organization

During the Part 1 hearing, Commission Member McDill posed the following question on the refurbishment organization:

MEMBER McDILL: ... I understand there will be a separate refurbishment organization but I haven't seen an org chart that shows how that organization fits into the big picture... Request that for day 2, so I will put that in. I think it would be good to see how that refurbishment organization fits in.

As shown in Figure 1, there are separate and distinct organizations for the Darlington Station and for Darlington Refurbishment that both report to OPG’s Chief Nuclear Officer. Under Refurbishment Execution there are dedicated resources for the “project bundles” and associated “project support” groups. Having separate organizations allows personnel in both organizations to better focus their attention on the tasks at hand, specifically, safe plant operation and planning / execution of refurbishment.

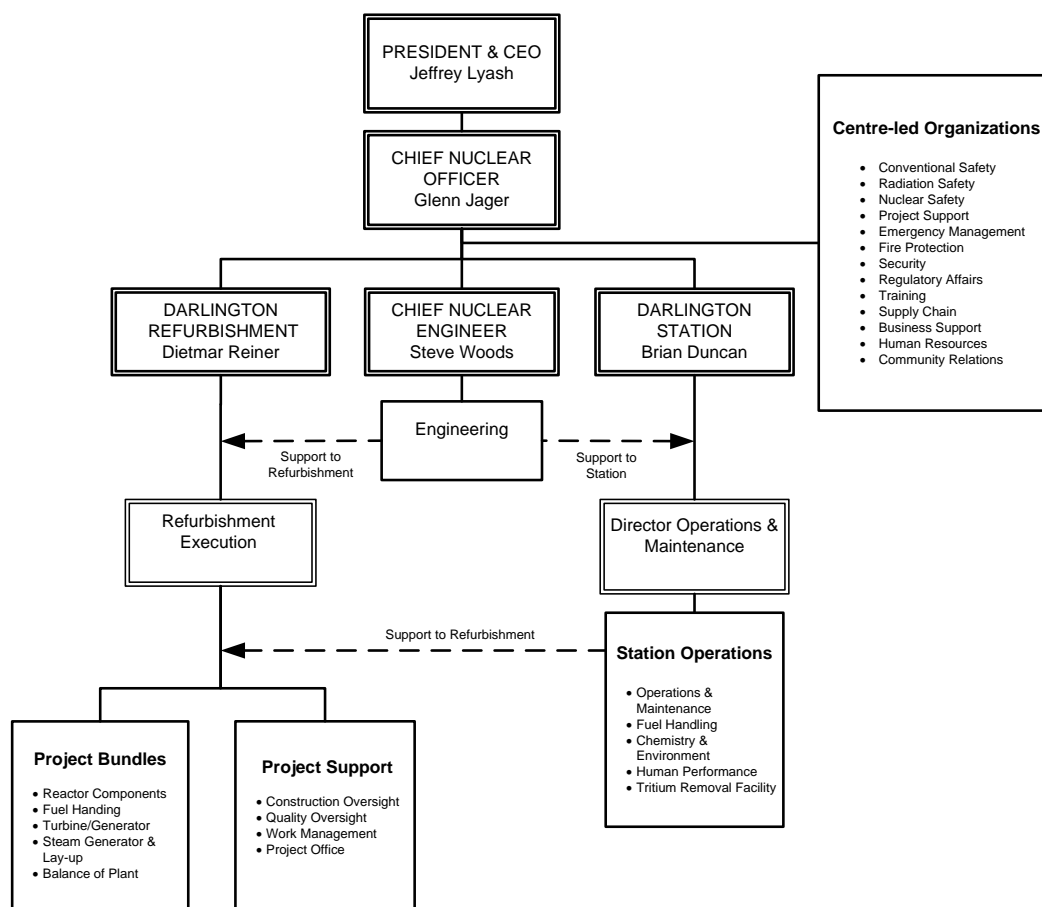


Figure 1 – Darlington Station and Refurbishment Simplified Organization Chart

The Nuclear Refurbishment organization focuses on the development, planning, implementation, and assurance of the refurbishment projects. Department level organizational transfer plans identify the division of responsibilities and specific activities required to support transition of a unit from the Station to the Nuclear Refurbishment organization, and back again. These plans were developed with the station and meet the requirements of the refurbishment program and the safe operation of the operating units.

To ensure consistent engineering practices and standards are followed, the Chief Nuclear Engineer is responsible for all engineering activities across OPG's nuclear fleet, including refurbishment.

The Darlington Station Senior Vice President is responsible for ensuring all activities at the station, including refurbishment, comply with our operating licence and regulatory requirements.

OPG uses a centre-led organizational model, whereby functional support for common areas is provided across the company by centralized departments. This model allows for better consistency and quality across the stations and company as a whole. For example, a centre-led Radiation Safety Department, as shown in Figure 2, provides radiation protection services, dosimetry and health physics support to the Darlington Station, Darlington Refurbishment, and the Pickering Station (as well as our nuclear waste facilities). The Refurbishment Radiation Safety organization is essentially a parallel organization to that of the station and will have a dedicated CNSC certified Responsible Health Physicist reporting to the Director of Radiation Safety, and will use the standards and equipment as specified by the centre-led organization.

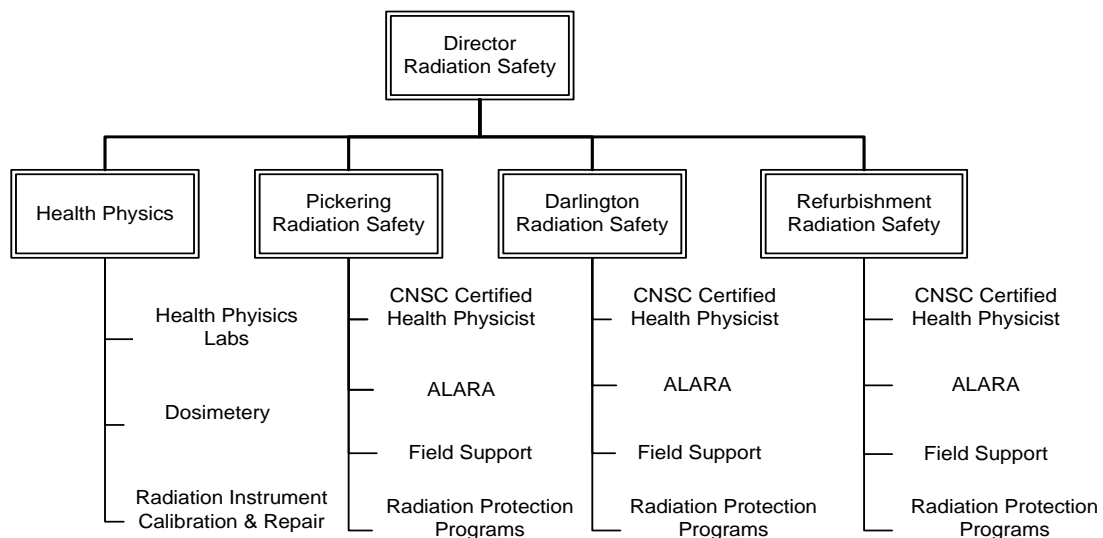


Figure 2 – Radiation Safety Simplified Organization Chart

2.2 Public Survey Results

During the Part 1 hearing, President Binder posed the following question on the subject of public support of refurbishment:

THE PRESIDENT: ... Somebody mentioned that you did a survey of the local community and 80 percent of the population sort of supports refurbishment. Is that survey posted? ... Well, for Part 2 it would be interesting to share the information with the local community view about this affair.

In order to better assess the perception of Darlington's performance among nearby residents, OPG conducted a poll of residents in Clarington and Oshawa. A total of 805 interviews were conducted in July 2015. Preliminary information was used for the Part 1 Hearing; final results are now available and summarized below.

Overall impressions of the Darlington Nuclear Station are positive with 78% of Clarington and Oshawa residents supporting this conclusion. However, in the area of safety, this number increased to 89%, with respondents indicating a solid level of confidence in the safety of the Darlington Nuclear Station.

77% of residents say Darlington plant is operated well, implements strict health and safety standards, and manages environmental issues well. 58% of respondents know what to do in the unlikely event of a nuclear accident. Public information campaigns, including those associated with KI pill predistribution, are aimed at increasing awareness and improving this result.

The survey indicated that support for refurbishment of the Darlington Station is high in the Clarington and Oshawa areas. Results indicated 80 % support of Darlington's refurbishment in the Clarington area, and as we move outward from the host community the support is slightly reduced to about 71%.

This survey is one element of OPG's public information and community relations program, which generates and maintains positive community support for the continued operations and refurbishment of Darlington Nuclear Station. Specifically for refurbishment, OPG began official community notifications and information sharing early in 2010. Over the past 5 years, OPG has held workshops, roundtables, briefing sessions, community updates, and open houses. More recently, OPG conducted information sessions on the licence renewal process and issues related to Darlington station operation and refurbishment. In addition, over 3,500 members of the public attended open house sessions, which included a tour of the Darlington refurbishment training mock-up facility.

2.3 Supply Chain Quality Assurance

During the Part 1 hearing, President Binder posed the following question on the issue of Supply Chain quality assurance:

THE PRESIDENT: ... As you know, internationally we are now starting to get more and more concern with the QA of the supply chain itself. They had some fraudulent activities. I am not suggesting we have them in Canada but we are not immune, particularly for some of the components... Do you have access to the U.S. database on this?

OPG's Supply Chain division has a Counterfeit, Fraudulent and Suspect Item (CFSI) program in place which is aligned with Electric Power Research Institute (EPRI) guidelines and industry best practice. Under this program, OPG staff have access to both the EPRI and U.S. Nuclear Regulatory Commission (NRC) databases relating to CFSIs.

Specific CFSI incidents which may potentially impact OPG are identified as part of periodic reviews of these databases, and approved OPG Operating Experience (OPEX) and Corrective Action processes are followed to investigate and disposition any potential risks. Also, OPG has a contractual requirement with all suppliers to provide notification when a suspected CFSI may impact OPG.

2.4 Nuclear Material Reporting

During the Part 1 hearing, Commission Member Velshi posed the following question on the topic of nuclear material reporting:

MEMBER VELSHI: And my last one is, and this is now Staff CMD written submission on page 88. We spent a lot of time on refurbishment, but this is just on your regular operations. And this is on safeguards and use of the nuclear materials accountancy reporting, e-Business system, the NMAR. And there is a last sentence on that page, says, "It is expected that OPG adopts this system for use at Darlington." So when do you expect to have that system in place?

OPG is currently in compliance with CNSC Regulatory Document RD-336, Accounting and Reporting of Nuclear Material. Accounting of nuclear material at Darlington is performed electronically using a computer software program called NUFLASH. Each fuel bundle is tracked individually by serial number and its location can be identified at any point in time.

Reports and forms on nuclear material accounting are submitted to CNSC on a monthly basis as per RD-336 requirements. These documents are submitted as hardcopies under formal correspondence. CNSC staff have indicated that they have a new electronic reporting system, NMAR, which can receive electronic data directly from licensee computer systems. This system is an enhancement to improve efficiency of data transfer and is currently not a requirement under RD-336. OPG is in discussions with CNSC staff on the use of the NMAR system and a meeting has been scheduled on December 9, 2015 to review potential implementation plans.

2.5 Public Access to Licence Renewal Information

OPG redesigned a portion of the OPG.com public website to improve public access to license renewal information. Navigation to this section of the website is facilitated through a home page banner, and users can also easily search through other nuclear-related topics by clicking on menu tabs without having to leave the nuclear section of the website. The design includes a summary of the license renewal process, and all relevant documents and media (including videos) in an easy to read format. See Figure 3 below for a screen capture of the OPG.com website home page.

Over 150 users visited the page in the month of August, and it is expected that the volume of users will increase as the Part 2 Hearing dates approach.

The information is easy to access and is updated regularly, in keeping with OPG's values of openness and transparency as outlined in the Nuclear Public Information and Transparency Protocol.

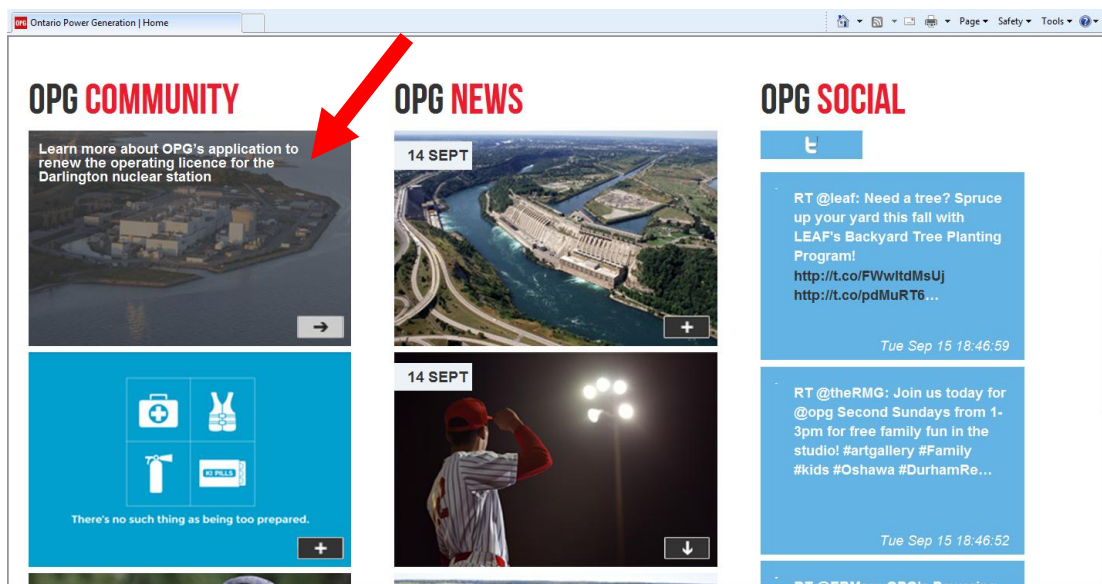


Figure 3 – Screen capture of OPG.com website home page (link to licence renewal information shown by red arrow)

2.6 Potassium Iodide Pill Predistribution

OPG continues on track with our timeline for Potassium Iodide (KI) pill predistribution as described during the Part 1 Hearing. Residents in the primary zone within 10km of the Darlington station have started receiving letters in the mail informing them of the coming delivery of KI pills and providing some additional relevant information. Delivery of the KI pills to homes and businesses in the primary zone is planned to commence in the month of October. Figure 4 below shows a sample of the KI pill messaging.

In addition, OPG continues to keep CNSC staff updated on progress. OPG understands that CNSC staff will provide the Commission an update on KI pill predistribution in the public meeting on October 1, 2015. OPG's presentation for the Part 2 Hearing will provide additional updates.



Figure 4 – Sample of the KI pill messaging

3.0 CONCLUSIONS

OPG is requesting a licence term of approximately 13 years, to December 1, 2028, to cover life extension activities including refurbishment of all four reactor units.

Refurbishment is a complex project managing multiple configurations throughout the life of the project. The requested licence duration allows Darlington to operate under a consistent licensing basis throughout this period. This will enable us to ensure nuclear safety through consistency and configuration management between the units. A 13-year licence is the best and safest approach.

A 13-year licence term is the safest way to manage refurbishment because it would allow completion of the planned refurbishment activities on all four Darlington units under the same set of regulatory requirements without changes. Our Integrated Implementation Plan (IIP) lays out a carefully planned and consistent work program for safety and reliability improvements. We want to complete the work according to the plan, and not deviate or change the plan unless absolutely necessary. Adhering to the plan reduces error-likely situations and improves human performance.

In addition, a 13-year licence will allow OPG to finish our IIP to the same set of requirements. The first Periodic Safety Review (PSR) and follow-up IIP requirements should be finalized when all of the actions identified through the current Integrated Safety Review (ISR) and current IIP have been completed, which are planned and scheduled to be done over 13 years. This is the best way to manage the long-term safety and performance of a nuclear station.

Experts at OPG have already completed comprehensive assessments to cover long-term operation well beyond December 2028 as described in the CNSC Regulatory Document, RD-360, "Life Extension of Nuclear Power Plants." Significant investments in safety improvements have been made and will continue throughout the 13-year licence term.

Finally, Darlington is one of the top-performing nuclear plants in the world. We are pleased that the CNSC has rated our station as fully satisfactory for the past seven years. In addition, international peer evaluations have consistently recognized Darlington's high performance. OPG remains committed to ensuring this will not change during the next licence term.