



## **Supplementary Information**

## **Renseignements supplémentaires**

### **Written submission from Ontario Power Generation**

### **Mémoire d' Ontario Power Generation**

In the Matter of

À l'égard d'

**Ontario Power Generation**

---

**Ontario Power Generation**

---

**Ontario Power Generation – Licence amendment application for the Darlington Nuclear Generating Station regarding the commercial production of Cobalt-60**

**Ontario Power Generation – Demande concernant la modification de son permis pour la centrale nucléaire de Darlington en vue de produire commercialement du Cobalt-60**

Public Hearing – Hearing in writing based on written submissions

Audience publique – Audience fondée sur des mémoires

**Spring 2024**

**Printemps 2024**

## **ATTACHMENT 1**

OPG email L. Moraru to M. Bacon-Dussault, "Darlington NGS – Response to Permission to Post OPG Documents on the CNSC Website - Re: CMD 24-H101 Licence Amendment Application for the DNGS - Cobalt-60"

CD# NK38-CORR-00531-25211

**Summary of Cobalt-60 Production Modifications Project – Prior Written Notification of Installation of Cobalt-59 Adjuster Rods during DNRU1**

**Prepared by: K. Thompson**

**Checked by: P. Le Dreff**

**ATTACHMENT 1****Summary of Cobalt-60 Production Modifications Project – Prior Written Notification of Installation of Cobalt-59 Adjuster Rods during DNRU1****PURPOSE:**

The purpose of this document is to provide a summary of Reference 1 as requested by the Canadian Nuclear Safety Commission, referred to as “the Commission” in Reference 2, to be used as an informative document for public disclosure. This request is in support of OPG's application for Darlington Nuclear Generating Station (DNGS) Power Reactor Operating Licence (PROL) 13.03/2025 amendment, for production of the Cobalt-60 radioisotope as presented in References 3, 4, and 5.

**SUMMARY:**

In Reference 1, OPG provided CNSC staff prior written notification of installation of Cobalt-59 (Co-59) adjuster rods in Unit 1 during the Darlington Unit 1 refurbishment outage (DNRU1), in accordance with Darlington's PROL 13.03/2025, Licence Condition G.2.

As part of this prior written notification, OPG provided the installation strategy details for installation of 16 inactive Cobalt-59 (Co-59) adjuster rods in Unit 1 during DNRU1 and the project schedule with the implementation details. The described installation strategy leverages the most optimal window for the adjuster rod installation and is conditional in the respect that should the approved PROL amendment not be received by a predetermined date, OPG will invoke the contingency plan to remove the Co-59 rods and revert back to original station configuration using new adjuster rods of the original types (stainless steel and titanium) before proceeding to surrendering the Over Poisoned Guaranteed Shutdown State (OPGSS) at the end of the U1 Refurbishment project (prior to unit restart) to maintain compliance to current Darlington PROL 13.03/2025.

From a technical perspective, the prior written notification includes the estimated duration for the contingency adjuster rod “switch out” scenario, defines the latest plausible trigger date to invoke the contingency plan and outlines how engineering documentation will be updated and controlled in accordance with the plan.

From a safety standpoint, the prior written notification includes Nuclear Safety concurrence that there are no reactor safety implications to having inactive Co-59 rods installed for all reactor states prior to the OPGSS removal, as adjusters are not credited for any operational or safety function until OPGSS is surrendered. The prior written notification also demonstrates that OPG is within the bounds of the existing PROL and the Safe Operating Envelope throughout the described installation strategy.

- References:
1. OPG letter, R. Geofroy to A. Mathai, "CONFIDENTIAL - Cobalt-60 Production Modifications Project Prior Written Notification of Installation of Cobalt-59 Adjuster Rods during DNRU1", May 30, 2023, CD# NK38-CORR-00531-24559.
  2. CNSC email, M. Bacon-Dussault to L. Moraru, "Permission to Post OPG Documents on the CNSC Website - Re: CMD 24-H101 Licence Amendment Application for the DNGS - Cobalt-60", March 8, 2024, CD# NK38-CORR-00531-25212.
  3. OPG letter, R. Geofroy to D. Saumure, "Darlington NGS –Application for Darlington Nuclear Generating Station Power Reactor Operating Licence 13.03/2025 Amendment for Production of the Cobalt-60 Radioisotope", April 28, 2023, CD# NK38-CORR-00531-23462.
  4. OPG letter, R. Geofroy to D. Saumure, "Darlington NGS –Supplemental Submission to Application for Darlington Nuclear Generating Station Power Reactor Operating Licence 13.03/2025 Amendment for Production of the Cobalt-60 Radioisotope", June 30, 2023, CD# NK38-CORR-00531-24619.
  5. OPG letter, R. Geofroy to M. Bacon-Dussault, "Darlington NGS – Addendum to the Application for Darlington Nuclear Generating Station Power Reactor Operating Licence 13.03/2025 Amendment for Production of the Cobalt-60 Radioisotope", December 22, 2023, CD# NK38-CORR-00531-25073.