

PMD 14-P1.1G

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**Presentation from
Ontario Power Generation Inc.**

On
Additional information from
PMD 14-P1.10A

In the Matter of

Ontario Power Generation Inc.

OPG's Deep Geological Repository (DGR)
Project for Low and Intermediate Level
Radioactive Waste

Joint Review Panel

September 2014

**Présentation d'
Ontario Power Generation Inc.**

Sur
Informations supplémentaires
PMD 14-P1.10A

À l'égard de

Ontario Power Generation Inc.

Installation de stockage de déchets radioactifs à
faible et moyenne activité dans des couches
géologiques profondes

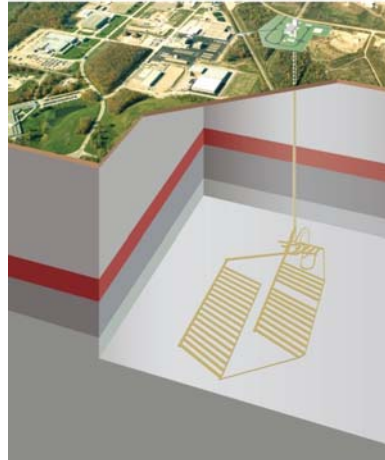
Commission d'examen conjoint

septembre 2014

OPG's L&ILW DGR Joint Review Panel Hearing

**OPG Responses to New
Information Presented on
September 10, 2014**

September 17, 2014



Introduction

Responses to:

- RWOS 1 operations
- Justification for correlations
- CI-36 inventory values
- CI-36 from resins
- I-131 emissions from WWMF
- Calandria tubes
- WIPP chemical hazard

RWOS 1 Operations (p.117)

- RWOS 1 was original site - received waste mostly from the Douglas Point NGS
- RWOS 1 licence is maintained and site monitored
- Elevated tritium levels were detected - waste extracted and relocated to WWMF
- Tritium levels are currently stable at 150-200 Bq/L

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Justification for Correlations (p.119)

- Scaling factors are correlations between easy-to-measure and hard-to-measure radionuclides
- Some of our reference inventories are based on scaling factors
- Consistent with international practice
- Theoretical and/or empirical justification on case-by-case basis
- For tritium and C-14 on resins, for example, our reference inventory based on scaling factors agrees with our data

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CI-36 Inventory Values (p.123-125)

- Primary source of CI-36 is pressure tubes
- Other retube components are also important
- The amount of CI-36 on resins is orders of magnitude lower than pressure tubes
 - CI-36 on moderator resins is based on data
 - CI-36 on heat transport resins is below detection limits
 - Calculated value of CI-36 used as reference
- The above sources provide good basis for total CI-36 inventory

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CI-36 from Resins (p.123-125)

- Safety assessment includes degradation of resins
- Degradation rate is dependent on conditions:
 - aerobic or anaerobic
 - wet or dry
- Release of CI-36 within DGR from resins and pressure tubes is considered in safety case

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I-131 Emissions from WWMF (p.125)

- I-131 is a short-lived radioisotope (8-day half-life)
- Emissions are of no relevance to iodine in resin inventory
- Associated with new waste receipts at WWMF
- I-131 inventory in stored resins at WWMF is negligible
- OPG measures and reports all WWMF emissions to CNSC
- Annual I-131 emissions typically seven orders of magnitude below the approved release limit

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Calandria Tubes (p.131)

- Calandria tubes are same material as pressure tubes, only thinner
- Pressure tube coupon was exposed to temperatures of 1100°C and did not ignite
- Calandria tube coupon would require temperatures greater than 900°C to ignite
- Calandria tube waste will not spontaneously ignite

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WIPP Chemical Hazard (p.135-138)

- Covered on September 10, 2014 (p.155 of transcript)
- Gadolinium nitrate used in reactors in low concentrations
- Very low nitrate content in resins
- Chemical reaction from gadolinium nitrate not a risk
- No impact to the safety case

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Summary

- OPG has addressed the questions accepted by the Panel
- Our conclusions remain valid
- Safety case not affected

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