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**Supplementary Information  
Oral intervention**

**Presentation from  
Jim & Brenda Preston**

In the Matter of

**Ontario Power Generation Inc.**

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Proposed Environmental Impact Statement  
for OPG's Deep Geological Repository  
(DGR) Project for Low and Intermediate  
Level Waste

Joint Review Panel

**September 16 to October 12, 2013**

**Renseignements supplémentaires  
Intervention orale**

**Présentation de  
Jim & Brenda Preston**

À l'égard de

**Ontario Power Generation Inc.**

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Étude proposée pour l'énoncé des incidences  
environnementales pour l'Installation de  
stockage de déchets radioactifs à faible et  
moyenne activité dans des couches géologiques  
profondes

Commission d'examen conjoint

**Du 16 septembre au 12 octobre 2013**

**DGR Joint Review Panel Hearing  
Oral Intervention**

***In the Matter of:*  
Ontario Power Generation Inc.  
Proposed Environmental Impact Statement for  
OPG's Deep Geological Repository (DGR) Project  
for Low and Intermediate Level Waste**

**Jim & Brenda Preston**

## **Overview of Topics**

- ▶ Introduction
- ▶ Definition of Health
- ▶ Loss of Legacy
- ▶ Water is Life
- ▶ Concerns for Health, Safety and Well Being
- ▶ Exclusion from Involvement in Process
- ▶ Radiation Exposure
- ▶ Canadian Manhattan Project
- ▶ Conclusion

## Introduction

- ▶ Jim & Brenda Preston
- ▶ Retired CA / CEO & Nurse
- ▶ Canadians resided in St Louis for 20+ years
- ▶ Seasonal residents at Inverhuron (5 months)
- ▶ Families arrived at Inverhuron in 1904 and 1863

## Introduction



Inverhuron This is our history  
This is our home

Picture taken at Douglas Point 1954

## Definition of Health

- ▶ “A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. The World Health Organization
  
- ▶ “Health is a capacity or resource rather than a state, a definition which corresponds more to the notion of being able to pursue one’s goals, to acquire skills and education and to grow. This broader notion of health recognizes the range of social, economic and physical environmental factors that contribute to health”. Public Health Agency of Canada

## Loss of Legacy



Inverhuron  
Cover of Cottage Life Magazine 1984

## Loss of Legacy



Father & son windsurfing

## Loss of Legacy



Seventh Generation  
150+ years at Inverhuron

## **Loss of Legacy**

Not just about Nimbyism

## **Loss of Legacy**

There are many communities like Inverhuron that line the shores of the Great Lakes

Their futures are all at stake

## Loss of Legacy



## Loss of Legacy

Here to protect the Great Lakes / Basin

- ▶ Provide water for transportation, agriculture, recreation, wildlife, human consumption
- ▶ 25% of the total Canadian agricultural production & 7% of the US
- ▶ 25% of the population of Canada + over 10% of the US
- ▶ 21% of the world's fresh water
- ▶ Ecological lifecycle depends on a healthy Great Lakes Basin
- ▶ 40 million people depend on the Great Lakes for their drinking water

**Fresh water is quickly becoming the world's  
most precious resource**

## Water is Life



## Water is Life:

*“Water ...makes the existence of the human race on this planet possible.*

- ▶ *80 countries now have water shortages*
- ▶ *2 billion people lack access to clean water*
- ▶ *1 billion people lack enough water to meet basic needs*
- ▶ *In last 100 years population has grown from 1.7 to 6.6 billion people*
- ▶ *Total amount of potable water has slightly decreased*
- ▶ *Water is being consumed at an unsustainable rate.”*

(Global Water Crisis Overview by Paul Alois, April 2007)

- ▶ The toxic life of the contents of the DGR is 100,000+ yrs
- ▶ What will our fresh water needs be over this time period?
- ▶ How can we risk 21% of the world's fresh water with this critical projection of need?



## Concerns for Health, Safety and Well Being



## Concerns for Health, Safety and Well Being

Stress & health issues of living in a construction zone for many years

- ▶ Rock pile approximately 50+ feet, main shaft 200+ feet and head frame hoist 140+ feet high will appear over the top of the tree line
- ▶ Unknown chemicals will be brought to the surface during construction
- ▶ What will be the ground water contaminates?
- ▶ What will be the airborne contaminates?

## Concerns for Health, Safety and Well Being

- ▶ What will be the noise levels?
  - Elevated noise creates stress □ it is an irritant that can cause sleep disturbances, inability to concentrate and a general interference with quality of life
  - We will be dealing with increased decibel levels from blasting, excavation and transportation that will be amplified over water
- ▶ What are the mitigation plans?
- ▶ What is the safety plan for neighbours during construction and operation?
- ▶ “Not likely to”, “Not expected to”, “Therefore it is not expected that” “Based on this it can be estimated” “OPG does not believe” are not finite answers but rather indicative of an experimental methodology

## Exclusion from Involvement in the Process



## Exclusion from Involvement in the Process

*A Framework for the Application of Precaution in Science-based Decision Making About Risk (Canada Privy Council 2003)*

- ▶ 4.5 A high degree of transparency, clear accountability and meaningful public involvement are appropriate.
  
- ▶ Inverhuron is the closest community to the DGR
  - We didn't know
  - We weren't surveyed
  - We weren't involved

## Exclusion from Involvement in the Process

What are our neighbours (OPG) really going to do?

- ▶ Golder Report - 2004
  - 130,000 m<sup>3</sup> of waste storage - 10% ILW -13,647 m<sup>3</sup>
- ▶ EIS 09-463 - 2012
  - 203,995 m<sup>3</sup> of waste storage - 20% ILW - 40,942 m<sup>3</sup>
  - ILW tripled
  - Still no commitment on the fate of the decommissioned waste
- ▶ EIS 10-494 section 8.1
  - "The potential to expand the DGR to accommodate up to 400,000 m<sup>3</sup> of waste within the proposed infrastructure has been assessed with the conclusion that this could be done"
  - "It is likely that the DGR capacity could be expanded beyond a factor of two"

## Exclusion from Involvement in the Process

Why would OPG build a DGR for \$2.1 billion and:

- Fill 80% of capacity with LLW that might no longer be radioactive by the time of decommissioning of the DGR
- Haul decommissioning waste from Bruce and Bruce A off site during the life of the DGR
- Build a second DGR in Saugeen Shores for HLW

## Exclusion from Involvement in the Process

How can we be a “Willing Host” when we don’t know what we are hosting and we haven’t been properly surveyed ?

How can a small municipality such as Kincardine be held forth as an acceptable “Willing Host” for a project with this magnitude of implications?

## **Radiation Exposure and Unknown Contaminants**



## **Radiation Exposure and Unknown Contaminants**

Precautionary Approach Section 2.2

“ Demonstrate that all aspects of the project have been examined and planned in a careful and precautionary manner in order to ensure that they do not cause serious or irreversible damage to the environment and/or the human health of current or future generations”

## Radiation Exposure and Unknown Contaminants

We believe the methodology and final site selection do not meet these criteria:

- ▶ No other sites were considered away from the Great Lakes
- ▶ The proposed site was chosen for convenience
- ▶ The drinking water of 40 million people is placed at risk
- ▶ The proposed location presents too many uncertainties for the population who live in the Great Lakes Basin
- ▶ A DGR in argillaceous limestone has never been built
- ▶ The proposed DGR is based on modeling and theories not certainties

## Radiation Exposure and Unknown Contaminants

### *Stochastic Health Effects*

*Stochastic effects are associated with long-term, low-level (chronic) exposure to radiation. (Stochastic refers to the likelihood that something will happen.) Increased levels of exposure make these health effects more likely to occur, but do not influence the type or severity of the effect.”*

- ▶ (U.S. Environmental Protection Agency – Radiation Protection – Health Effects – August 2012)

## Radiation Exposure and Unknown Contaminants

“The link between radiation exposure and cancer is becoming increasingly clear and the cellular mechanisms involved in this process are becoming better understood. However we are only beginning to understand the genetic and trans-generational effects of radiation damage. Much of the long lived radioactive contamination we are spreading into our environment now is essentially permanent and irreversible.”

Dr. Kathy Vakil MD CCFP FCFP and Dr Linda Harvey BSc MSc MD  
Human Health Implications of the Nuclear Energy Industry - 2009

## Radiation Exposure and Unknown Contaminants



- Will it work?
- It is expected to work based on our best estimates!

## **Are We to be Canada's Manhattan Project Experiment?**



## **Are We to be Canada's Manhattan Project Experiment?**

Coldwater Creek St Louis MO

- ▶ Disposal of processed uranium from the Manhattan Project
- ▶ Affected citizens are only discovering now the extent of health issues suffered by those who grew up in the area
- ▶ Conjoined twins, 30+ appendix cancers, leukemia, rare brain tumours, breast and colon cancers
- ▶ 3 generations impacted in 50 years not 100,000 years!



## **Are We to be Canada's Manhattan Project Experiment?**

- ▶ Coldwater Creek is not an isolated event
  - Hanford Washington
  - Sheffield Illinois
  - Maxey Flats Kentucky
- ▶ These were the “disposal methods” used a mere 50 years ago
- ▶ What will be the best practice 50 years from now?

## **Are We to be Canada's Manhattan Project Experiment?**

### DGR

- ▶ No studies in place how DGR's impact community health
- ▶ Difficult to monitor cases within a mobile society
- ▶ What mechanisms do OPG and Grey Bruce Health Unit have in place to monitor the health impacts on affected workers and citizens
- ▶ How will we be notified of results and issues on a timely basis

## Conclusion



## Conclusion

Building a DGR on the shores of Lake Huron presents a  
VERY dangerous precedent

What other companies would use the precedent to build  
DGRs in the Great Lakes Basin

OPG is already in discussion with Saugeen Shores to  
build DGR2 (HLW facility) in the community

## **Conclusion**

We request that the Joint Review Panel  
**REJECT**  
the application  
of OPG to construct a DGR  
on Lake Huron  
or anywhere  
within the Great Lakes Basin

## **What will be their future?**



Inverhuron 2013