

OPG's Deep Geologic Repository Project Communications and Consultation Report: Community Open Houses December 2008



Prepared by:
AECOM Canada Ltd.

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OPG's Deep Geologic Repository Project

Communications & Consultation Report:

Community Open Houses November 2008

Prepared for

Ontario Power Generation (OPG)

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Appendices

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1. Introduction

This report documents a series of seven Community Open Houses hosted by Ontario Power Generation (OPG) in November 2008. The report was prepared by Gartner Lee Limited operating as AECOM and contains materials prepared by OPG and AECOM, and local newspaper reports.



SAFE, RESPONSIBLE MANAGEMENT OF NUCLEAR WASTE

NATURAL BARRIERS TO PROVIDE LONG TERM MANAGEMENT TO SAFELY ISOLATE LOW & INTERMEDIATE LEVEL WASTE

WELCOME KEEPING YOU **INFORMED**
ABOUT THE **DEEP GEOLOGIC**
REPOSITORY PROJECT

ONTARIO POWER
GENERATION
www.opg.com/eng



2. Community Open House Topics

This second round of community open houses was held to provide interested community members with an opportunity to learn about and provide input on the following topics:

- the proposed OPG Deep Geologic Repository (DGR) project, and changes and updates since previous Open Houses;
- the Environmental Assessment undertaken as an integral part of the planning and approval process;
- the results of geoscientific characterization work done in 2007, and the drilling of boreholes in 2008;
- the updated conceptual design of the DGR;
- the science and technology behind safe storage of low and intermediate waste; and
- the change in the depth of the DGR.

The open houses also offered a venue for community members to provide comments on the open house format and the proposed project.



The Deep Geologic Repository Project
THE SAFETY CASE FOR THE DGR

Building the Safety Case: Natural Barriers to Protect the Public
 The DGR will safely isolate the public from the nuclear waste. Public doses are estimated to be small.

This estimate is based on the site's geologic setting:

- The repository will be located at a depth of about 680 metres (2230 feet) in low permeability limestone beneath a protective cap of 200 metres (650 feet) of low permeability shale.
- The local rock formations are 450 million years old and have remained stable through major climate change, including many ice ages.
- Any radionuclides released from the waste would move through the limestone and the overlying shale layer at extremely low rates – less than 1mm per year.
- Almost all of the radioactivity would decay within or near the repository.
- In the unlikely event of a significant earthquake, it would have little to no impact on the DGR.

Protecting Groundwater
 The natural properties of the sedimentary bedrock formations beneath the Bruce site will isolate the LLW from ground and surface water resources.

- Regional groundwater resources are drawn from permeable bedrock aquifers within 100m of ground surface.
- At greater depths (600m) the horizontally layered and thick bedrock formations, which extend beneath Lake Huron, have created a distinct, vast, high groundwater domain characterized by extremely low bedrock permeabilities and saline waters (8 times seawater).
- At the proposed DGR horizon, the groundwater domain appears stable and unaffected by near surface or glacial events (G) during the last million years.



3. Notification

Notification to community members was provided by the following:

- A postcard format letter of invitation delivered by Canada Post's Unaddressed Admail to nearly 50,000 households in surrounding communities, including Kincardine, Ripley, Walkerton, Port Elgin, Owen Sound, Chesley and Wiarton where the open houses were held (see Appendix A for a list of community distribution).
- A newspaper announcement published as an insert in the Kincardine News, Kincardine Independent, Lucknow Sentinel, Walkerton Herald Times, Owen Sound Sun Times, Port Elgin Shoreline Beacon, and the Wiarton Echo, prior to the open houses (Appendix A).
- Letters sent to local elected officials, City and County municipal staff leaders (including police, fire and emergency services), local and regional non-governmental organizations with a potential interest, and local and regional media outlets. Invitations were sent to a number of organizations in the United States as well (see Appendix A for the mailing list).
- Radio spots were purchased for six local radio stations that serve the open house communities. Seven different announcements, specific to each open house, were prepared (Appendix A).
- An advertisement was placed in the October 2008 edition of Marketplace, a local advertising publication (Appendix A).
- The dates, times and locations of the Open Houses were posted on the DGR page of the OPG website (www.opg.com/dgr) prior to the Open Houses.

YOU ARE INVITED

to participate in our Open Houses on the Deep Geologic Repository (DGR) Project. Ontario Power Generation (OPG) is proposing to build a Deep Geologic Repository for the long term storage of low and intermediate level radioactive waste at the Bruce site.


At this second round of Open Houses we look forward to providing you with updated information on the DGR Project, to answering your questions, and hearing your views. Your comments will be considered in the environmental impact statement submitted under the Canadian Environmental Assessment Act for the DGR project.

KEEPING YOU INFORMED ABOUT THE DEEP GEOLOGIC REPOSITORY PROJECT






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**YOU'RE INVITED TO
AN ENVIRONMENTAL
ASSESSMENT
OPEN HOUSE**

**OPG DEEP GEOLOGIC REPOSITORY
(DGR) PROJECT**

Ontario Power Generation (OPG) is proposing to build a Deep Geologic Repository for the long term storage of low and intermediate-level radioactive waste at the Bruce site.

As part of the planning and approval process for the DGR project, we are encouraging the public to attend our second round of Open Houses. We look forward to providing you with information about the project and hearing your views. Public participation is an important part of the environmental assessment process and your input will be considered in the Environmental Impact statement that will be prepared and submitted for the DGR under the Canadian Environmental Assessment Act.

We look forward to seeing you between 4 and 8 p.m. at any of the open houses listed below.

Kincardine – Monday November 3 Best Western Governor's Inn 791 Durham Street Kincardine	Port Elgin – Thursday November 6 Colonial Motel 235 Goderich Street Port Elgin
Ripley – Tuesday November 4 Ripley Huron Community Centre 17 Queen Street Ripley	Owen Sound – Monday November 10 Best Western Inn on the Bay 1800 2nd Avenue E Owen Sound
Walkerton – Wednesday November 5 Victoria Jubilee Hall 111 Jackson Street S Walkerton	Warton – Tuesday November 11 Warton & District Community Centre 531 Scott Street Warton
	Chesley – Thursday November 13 Chesley Fire Hall North end of Chesley Bruce Rd. 10

For more information:
Call: Marie Wilson at 519-361-6414 ext.4065,
or write to us at Ontario Power Generation, Box 7000, B21,
Tiverton, ON, N0G 2T0 – or visit our project website at: www.opg.com/dgr

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4. Dates and Venues

The community open houses were held at the following locations:

Kincardine – Monday November 3

Best Western Governor's Inn
791 Durham Street
Kincardine, ON

Ripley – Tuesday November 4

Ripley Huron Community Centre
17 Queen Street
Ripley, ON

Walkerton – Wednesday November 5

Victoria Jubilee Hall
111 Jackson Street South
Walkerton, ON

Port Elgin – Thursday November 6

Colonial Motel
235 Goderich Street
Port Elgin, ON

Owen Sound – Monday November 10

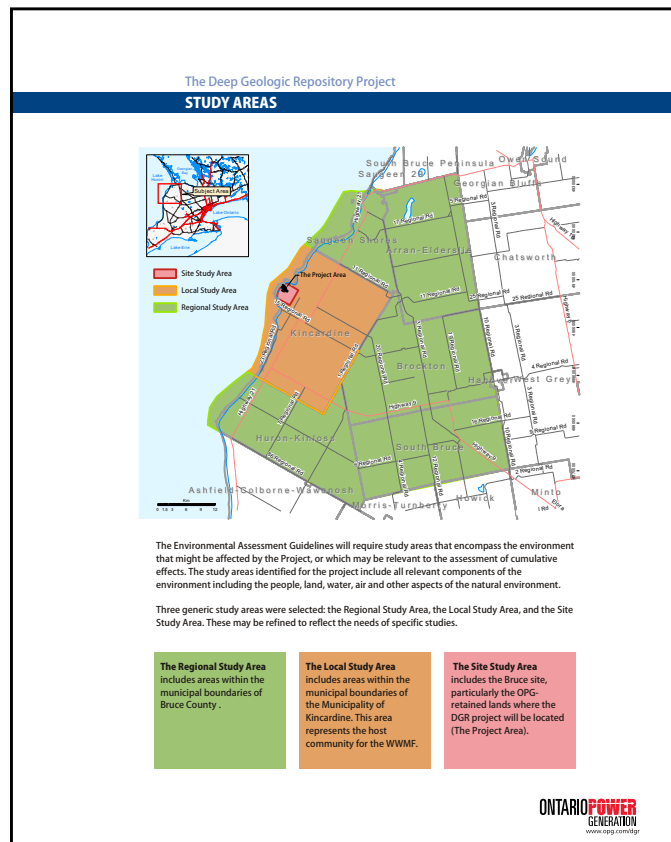
Best Western Inn on the Bay
1800 2nd Avenue East
Owen Sound, ON

Warton – Tuesday November 11

Warton & District Community Centre
Warton, ON

Chesley – Thursday November 13

Chesley Fire Hall
Bruce Road 10
Chesley, ON



5. Number of Participants

A total of 149 persons registered their names as attendees of the community open houses:

Kincardine - 28
Ripley - 13
Walkerton - 12
Port Elgin - 17
Owen Sound - 31
Chesley - 13
Warton - 35

It is estimated that more than 90% of attendees signed in.
Sign-in lists are provided in Appendix E.



6. Community Open House Format

The community open houses provided an informal opportunity for community members to learn about the proposed project and to have their questions answered. Participants viewed display materials, had discussions with OPG representatives and enjoyed light refreshments.

The open houses ran from 4 pm to 8 pm. Take-home copies of recent OPG newsletters, copies of the 2007 DGR Annual Report, brochures describing the DGR project as well as copies of the open house display panels were available (Appendix C).

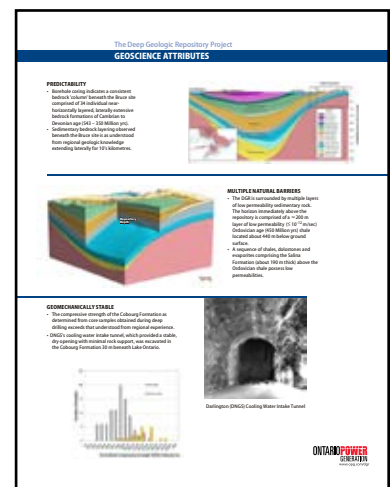
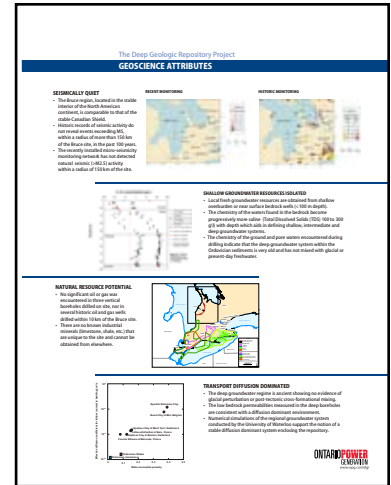
Participants were encouraged to fill out comment cards and to provide input on Valued Ecosystem Components (VECs) that were important to them.



Display Panels

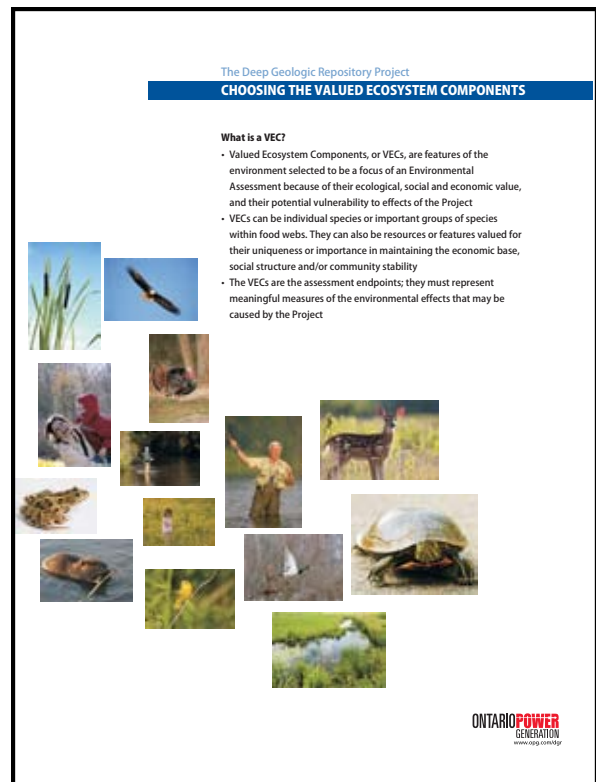
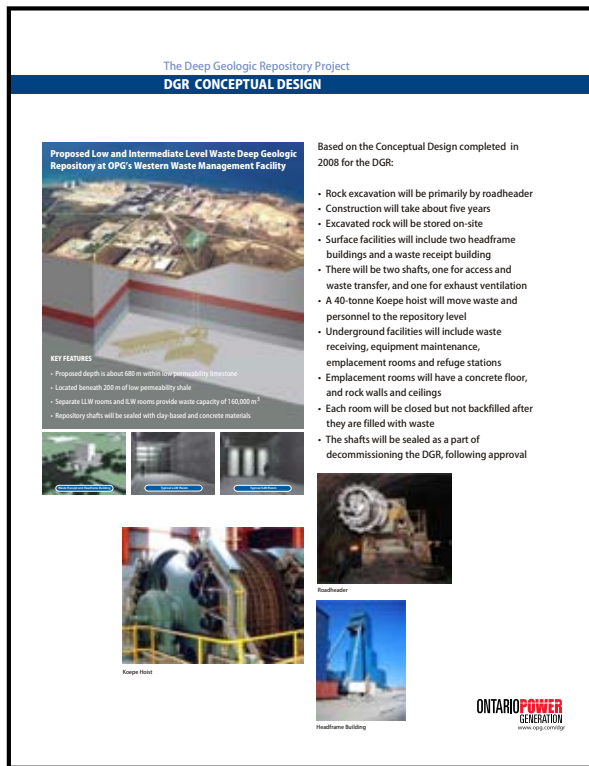
Twenty-one 3'x5' display panels provided the following information:

1. "Welcome" – illustrating OPG employees expressing a welcoming smile, and technical photos and illustrations
2. "The Western Waste Management Facility (WWMF)" – an aerial photo mapping the current OPG Bruce site
3. "The Facts About Nuclear Waste" – illustrating and explaining low level and intermediate level nuclear waste
4. "What is Radiation?" – a description of sources of radiation in the environment, and radiation exposure regulations
5. "Waste Inventory" - a breakdown of the different waste materials to be emplaced in the DGR
6. "An Overview of the Proposed Deep Geological Repository" – illustrating key features of the proposed construction and operation of the DGR
7. "DGR Conceptual Design" - illustration of the 2008 design
8. "Scientific Investigations" – explaining the Geoscientific Site Characterization Program
9. "Geoscience Attributes" - presenting the predictability of bedrock, the multiple natural barriers and the geomechanical stability of the rock
10. "Geoscience Attributes II" - presenting the seismically quiet nature of the region, the isolation of shallow groundwater resources, the lack of natural resource potential and the diffusion dominated transport of deep groundwater
11. "Borehole Locations" - indicating the location and stratigraphy of boreholes
12. "An International Perspective" – an overview of international experiences in the long-term management of nuclear waste
13. "The Safety Case for the DGR" – a description of natural barriers to protect the public, and groundwater
14. "Safety Assessment"– provides an outline of the safety assessments for normal operation and accidents, as well as the potential effects on humans and biota during Pre-Closure and Post-Closure.



15. "The Steps to Move Forward" – describing and illustrating the decision and approval process
16. "Environmental Assessment Activities" – an outline of the current schedule moving forward
17. "Study Area" – a map delineating the Regional Study Area, the Local Study Area, and the Site Study Area
18. "Baseline Environment" – a list and illustrations of the environmental studies conducted in 2007 and 2008
19. "Choosing the Valued Ecosystem Components (VECs)" – an explanation of the term VEC, and how these environmental features are selected and evaluated during an environmental assessment
20. "Valued Ecosystem Components" – listing proposed specific environmental features
21. "Your Questions about the DGR Project and Our Responses" – a panel listing public comments and OPG responses

See Appendix D for images of each of the display panels.



7. Opportunities for Input

Comment Cards

Comment cards in the style of large sized postcards provided the opportunity for participants to rate their experience at the open house, and to write comments. Cards could be filled out at the open house, or mailed in afterwards.

In total, 12 comment cards were returned. Of those, 8 included written comments, and all responded to the questions evaluating the open house. All comment card feedback, as well as graphs showing the cumulative question responses, are provided in Appendix E.

Comments/Questions?
Let us know.

Name: _____

Address: _____

Phone: _____

Email: _____

PLACE
STAMP
HERE


**Ontario Power Generation
Public Affairs Officer
P.O. Box 7000
Tiverton, Ontario
N0G 2T0**


www.opg.com/dgr email: rwmd@opg.com Phone: 519-361-6414 ext. 4065

Please leave this card with our open house staff, or mail it back to us at your convenience. You can also email us with your comments at rwmd@opg.com or visit our website for more information at www.opg.com/dgr

Open House Evaluation
Please rank the following statements on a scale of 1 to 5 where "1" is "strongly disagree", "3" is neutral or "no opinion" and "5" is "strongly agree".

<p>a. The open house panels helped me to understand the deep geological repository (DGR) proposal.</p> <p>1 2 3 4 5</p>	<p>d. Overall, the open house helped me to satisfy the information needs I had.</p> <p>1 2 3 4 5</p>
<p>b. The open house location and hours were convenient for me.</p> <p>1 2 3 4 5</p>	<p>e. I will recommend to my friends and family members that they should come to a future DGR open house.</p> <p>1 2 3 4 5</p>
<p>c. The open house staff were helpful.</p> <p>1 2 3 4 5</p>	







8. Key Areas of Discussion

Many Open House attendees were already familiar with the proposed DGR project, having participated in other stakeholder communications events. The majority of those who attended the Open Houses supported the project. One of the primary reasons for attending the Open Houses was to obtain an update on the progress of the project and the studies associated with it. Visitors tended to stay for about an hour. Comments received from prior Open Houses were also presented on a display panel with OPG responses (presented in Appendix D).

The discussions at the 2008 Open Houses tended to revolve around a number of key issues:

- **Proximity of the proposed DGR to Lake Huron**
 - » **OPG response:** *The proposed DGR is about 1.5 kilometres from the lake and more than 500 m below the depth of the lowest point of Lake Huron. The DGR project will provide long term storage underground at 680 m for waste currently managed safely at surface. The low permeability of the host rock for the DGR will isolate and contain the waste from surface water resources.*
- **Transportation of waste**
 - » **OPG response:** *OPG has been safely transporting waste from Darlington and Pickering for more than 35 years. Low and intermediate level nuclear waste will continue to be transported to the WWMF even if the DGR project does not proceed.*
- **Understanding the difference between levels of waste**
 - » **OPG response:** *Low level waste has low levels of radioactivity and includes protective clothing, floor sweepings, mops, rags, etc. It can be handled without special radiation protection. Intermediate level waste includes used reactor core components, and resins and filters. It cannot be handled without radiation protection.*
- **Suspicion that “the door is open” for high level waste disposal, or that waste will be imported from other nuclear companies in Canada or other countries**
 - » **OPG response:** *The Hosting Agreement with the Municipality of Kincardine stipulates the facility will manage only waste from OPG-owned reactors. OPG’s Environmental Impact Statement and application for licence are for low and intermediate level waste only from OPG-owned reactors.*
- **Effects on wildlife, including effects on hunting in the area**
 - » **OPG response:** *The environmental impact statement, which will be the subject of a hearing before a review panel, will assess potential effects on the natural environment, including wildlife.*
- **Effects of earthquakes on the proposed DGR**
 - » **OPG response:** *The proposed site for the DGR, in Bruce County,*



is in one of the lowest seismic zones in Canada. Additional monitoring of low level seismic activity is in progress and will continue for three years.

- **Whether there are similar sites elsewhere**
 - » **OPG response:** An underground repository in New Mexico, the Waste Isolation Pilot Plant has operated since 1999. Forsmark in Sweden began operation in 1988 and Olkiluoto, in Finland began operating in 1992. These facilities all handle low and intermediate level waste.
- **Potential health risks associated with nuclear sites in general, including possible links to increased levels of leukemia**
 - » **OPG response:** OPG is not aware of any increased incidence of cancers in the proximity of the site. Durham Region, in Radiation and Health in Durham Region 2007, assessed possible health effects from the Pickering and Darlington NGSs. It concludes that disease rates in Ajax-Pickering and Clarington did not indicate a pattern to suggest that the Pickering NGSs and Darlington NGS were causing health effects in the population.
- **Need to assure that employment opportunities associated with the project are available to local residents**
 - » **OPG response:** OPG supports offering employment to local residents who have the necessary qualifications.
- **Construction techniques for the shaft, particularly the suitability of the roadheader for construction of the first shaft**
 - » **OPG response:** OPG appreciates the input on construction techniques. These techniques will be further assessed in the next phase of the engineering studies.
- **Security of the site against terrorist activity**
 - » **OPG response:** The Bruce site has controlled access and has a very well trained security team on site. The waste is currently at surface. The DGR will move it to below ground where it is less accessible.
- **Cost of the project**
 - » **OPG response:** The cost of the DGR is currently estimated to be about \$1 billion. This includes \$600 million for construction and \$400 million for operation. A more detailed cost estimate is not yet available.
- **Would the DGR withstand being hit by a meteor?**
 - » **OPG response:** The DGR is 680 m below ground surface. As a part of the safety assessment, a number of malfunctions and accidents were evaluated for frequency and effect. The feasibility of the DGR being impacted by a meteor was assessed as negligible.



9. Media Coverage of the Open Houses

Journalists interviewed OPG representatives and guests during the open houses.

Following the community open houses, the following articles, editorials and letters-to-the-editor appeared in local newspapers and radio stations (see Appendix B):

- Bayshore Broadcasting Centre (Owen Sound) - Monday, November 3, 2008: "Nuke Waste Open Houses in Region," by reporter John Divinski
- <http://coastnews.blogspot.com/> - Monday, November 3, 2008: "OPG Meetings," by Lynda Cooper, News Director and morning show co-host at Coast Fm
- Radio CKNX AM (Wingham) – Tuesday, November 4, 2008: "OPG Nuclear Waste Plan in Bruce County Domain Again"
- Bayshore Broadcasting Centre (Owen Sound) – Thursday, November 6, 2008: "OPG Holds Another Open House," by reporter Shannon Snoes
- Bayshore Broadcasting Centre (Owen Sound) – Thursday, November 13, 2008 "Final OPG Open House in Chesley," by reporter Shannon Snoes
- Radio CKNX AM (Walkerton) – Friday, November 14 2008: "OPG Storage Open Houses Wrap UP"
- Bayshore Broadcasting Centre (Owen Sound) – Monday, November 17, 2008 "OPG Pleased with Open Houses," by reporter John Divinski



10. Appendices

Appendix A: Notification Materials

- Letter of Invitation (addressed mail)
- Mailing List for Invitation Letters
- Postcard Invitation (unaddressed admail)
- Distribution Breakdown for postcard Invitation
- Newspaper announcement
- Placement of newspaper announcements
- Distribution of Radio Scripts
- Radio Scripts
- Marketplace announcement

Appendix B: Newspaper Coverage

- Bayshore Broadcasting Centre (Owen Sound) - Monday, November 3, 2008: "Nuke Waste Open Houses in Region," by reporter John Divinski
- <http://coastnews.blogspot.com/> - Monday, November 3, 2008: "OPG Meetings," by Lynda Cooper, News Director and morning show co-host at Coast Fm
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Appendix C: Open House Handouts

- DGR 2007 Annual Report
- "Neighbours: News from OPG's Western Waste Management Facility," May 2008
- "Neighbours: News from OPG's Western Waste Management Facility," September 2008

Appendix D: Open House Display Panels

Appendix E: Open House Sign-in Sheets and Comment Cards