

February 4, 2014

Ms. Laurie Swami  
Vice-President Nuclear Services  
Ontario Power Generation  
<contact information removed>

**Subject: Information Request Package #12a from the Joint Review Panel**

Dear Ms. Swami:

The Joint Review Panel has determined that additional information is required in relation to the OPG response to information request [EIS-12-512](#) received by the Panel on January 22, 2014. Please provide a response to the three part follow-up information request in the attached table at the earliest possible date.

As always, questions that you may have regarding the attached information requests or the process may be directed to either of the Panel Co-Managers, Kelly McGee at (613) 947-3710 or Debra Myles at (613) 957-0626.

Sincerely,

<original signed by>

Stella Swanson  
Chair, Deep Geologic Repository Joint Review Panel

c.c.: James F. Archibald, Joint Review Panel Member  
Gunter Muecke, Joint Review Panel Member

Paul Gierszewski, Nuclear Waste Management Organization  
Allan Webster, Ontario Power Generation

/Attachment

**Attachment 1  
Deep Geological Repository Project  
Joint Review Panel EIS Information Requests  
Package #12a – February 4, 2014**

IR #	EIS Guidelines Section	EIS Section or other technical document	Information Request	Context
EIS 12a 512	<ul style="list-style-type: none"> <li>• Section 14 Cumulative Effects</li> </ul>	<ul style="list-style-type: none"> <li>• <i>EIS: Section 10, Cumulative Effects</i></li> </ul>	<p>a) Attachment A, Section 3 of the IR response relates only to waste conditions. Additional assessment of the impacts of extended operation of the repository on underground safety is required. OPG is to provide a discussion of excavation safety implications including the integrity of occupied excavations. For example, the expansion of the repository to accommodate decommissioning waste would extend the underground repository operational period which may impact the effectiveness of the planned support measures (such as rock bolts, shotcrete and other surface reinforcement tools) due to processes such as corrosion. Consideration of any changes to the frequency and extent of maintenance or replacement of support measures may also be required. Describe any underground safety-related strategies for possible future expansion that OPG has undertaken to incorporate during the initial development of the DGR. OPG referred to incorporating lessons learned from international waste repositories during the hearing (Transcript Volume 15: October 3, 2013, p. 177, l. 16), as well as in IR EIS-08-366 (“concurrent room excavation and waste emplacement, versus having these activities sequential is an important design and operational consideration”).</p> <p>b) Provide further clarification regarding Short-Term and Long-Term Safety Implications of expanding the DGR.</p> <p>This information request arises from the need to determine whether factoring decommissioning waste into plans for the construction and the operation of the DGR would affect the</p>	<p>The IR follow up responses are required to add to the information provided in Attachment A, Section 3 of the OPG response to IR EIS-12-512 under the subheadings “Implications of Expansion on DGR Safety – Operational Safety Implications” and “Implications of Expansion on DGR Safety – Long Term Safety Implication”:</p>

IR #	EIS Guidelines Section	EIS Section or other technical document	Information Request	Context
			<p>current safety case (without decommissioning waste). Explain whether and how OPG would plan for and implement longer-term methods and measures to ensure underground safety, environmental protection, and safety of the public from the beginning of the project, illustrating a holistic understanding of the fundamental requirements for safety and environmental protection, should the project evolve.</p> <p>Examples of issues to consider during holistic planning (in addition to the two issues explicitly addressed below) include:</p> <ul style="list-style-type: none"> <li>• contingencies for unexpected variation in the lateral and vertical extent of the Cobourg Formation;</li> <li>• sequencing and configuration of emplacement rooms in order to optimize efficiency, safety and environmental protection (i.e., planning backwards from the inclusion of all decommissioning waste and looking for areas of risk that would require a new or enhanced mitigation approach, as well as opportunities for efficiency, such as in the timing of placement of certain types of waste);</li> <li>• the capacity that would ultimately be required for the stormwater management pond, and any associated impacts to wetlands; include consideration of handling and safe long-term disposal of solids from the bottom of the pond; and</li> <li>• air quality mitigation measures (contingencies that may be required for ventilation shaft emissions), given the nature of decommissioning wastes.</li> </ul> <p>The response to IR EIS-12-512 states that for Disruptive Scenarios, the impact remains within the risk criterion of 10-5 per year. Clarify the relative degree to which the criterion would be met for each disruptive scenario. It is understood that the clarification would be based upon a preliminary, qualitative assessment; however, it should be possible to provide an order of magnitude estimate of how close the disruptive scenarios may</p>	

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			<p>be to the risk criterion. The focus should be on the relative incremental risk created by inclusion of decommissioning waste. Provide an evaluation of new sources of risk (either the hazards themselves or changes in the likelihood of those hazards) that may be introduced by the inclusion of decommissioning waste.</p> <p>Provide further details regarding the implications of greater gas generation potential resulting from the increased volume of decommissioning waste. Provide information regarding the relative decrease in gas production potential that could be achieved through volume reduction, decontamination and recycling, and then use this information to estimate how much increased space would be required to accommodate predicted gas generation. It is understood that these additional details would be preliminary; however, it should be possible to provide the assumptions used to support the estimates of relative decrease of gas production potential as well as the estimates of additional space that may be necessary. Comment on how adding space to the repository would affect the overall design, integrity, and planned sequencing of the repository.</p> <p>c) Provide a graphic representation of the relative timelines of all phases of the conceptual expanded DGR to illustrate how these phases may interact and/or overlap with the phases of the DGR as described in the EIS. This graphic could be a modification of Figure 4.2-1 of the EIS. For additional clarity, also provide a version of Figure 2 from the response to IR EIS-12-512 (expansion layout) that shows the sequencing of panel and closure wall construction, waste emplacement, and temporary and/or permanent closures.</p>	