

April 15, 2014

Ms. Laurie Swami  
Vice-President Nuclear Services  
Ontario Power Generation  
889 Brock Road, 6th Floor  
Pickering, ON L1W 3J2

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

Dear Ms. Swami:

The Joint Review Panel has determined that additional information is required in relation to the OPG responses to information requests EIS 12a-512 and EIS 12-513 received by the Panel on April 4, 2014. Please provide a response to the follow-up information requests 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 #12b – April 15, 2014**

IR#	EIS Guidelines Section	EIS Section or other technical document	Information Request	Context
EIS 12b-512	<ul style="list-style-type: none"> <li>• Section 14 Cumulative Effects</li> </ul>	<ul style="list-style-type: none"> <li>▪ EIS: Section 10, Cumulative Effects</li> </ul>	<p>Provide a more detailed evaluation of the contribution of the radionuclides “expected to be significantly higher in wastes from decommissioning than in operational and refurbishment wastes” to the maximum doses for each of the Disruptive Scenarios for an expanded repository than was provided in the response to information request EIS 12a-512.</p>	<p>In Section (b.2) - Postclosure Disruptive Scenarios - of the response to EIS 12a-512, OPG addresses the anticipated impact of decommissioning waste on the maximum dose rates to an adult for disruptive scenarios. It is stated that "The waste types from decommissioning are similar to wastes arising from operations and refurbishment, but different in amounts and key radionuclides..." and that "...the inventories of Ni-59, Ni-63, Fe-55, Co-60, Cl-36 and Ca-41 are expected to be significantly higher in wastes from decommissioning than in operational and refurbishment wastes." Some of the significantly more abundant radioisotopes have long half-lives (e.g., Ca-41 at <math>1 \times 10^5</math> years).</p> <p>While the response notes that "... these radionuclides are not significant contributors to the dose impacts from the Disruptive Scenarios and so an increase in their inventory is not expected to increase maximum calculated doses," a fuller evaluation of their contribution to maximum doses for each of the Disruptive Scenarios for an expanded repository was not provided.</p>
EIS 12b-513	<ul style="list-style-type: none"> <li>• Section 7.3 Alternative Means of Carrying out the Project</li> </ul>	<ul style="list-style-type: none"> <li>▪ EIS: Section 3.4, Alternative Means of Carrying out the Project</li> </ul>	<ul style="list-style-type: none"> <li>a) Provide an indication of the log-log scale on the risk assessment plots, both Relative Risk and Absolute Risk, for the 12 key features (or pathways of harm) for comparison among the 4 alternatives for the near term (&lt;100 years) and long term (&gt;100 years) in order that the reader may distinguish negligible, low, moderate, high or very high risk assessments on these scales.</li> <li>b) Provide a table and/or figure with accompanying explanatory narrative that summarizes the overall relative risks of the four identified options for the long-term management of low and intermediate level waste, over both timeframes (&lt;100 years and &gt;100 years). Include this summary in OPG's separate submission to address the Panel's follow-up comments on the comparison of risk perception among the four options.</li> </ul>	<ul style="list-style-type: none"> <li>a) In Section 3.3.1 (Visualizing Relative and Absolute Risk) of the response to EIS 12-513, potential pathways of harm are discussed for both Relative Risk and Absolute Risk. It is stated that "... judgements were made as to the relative likelihood of harm (along the horizontal dimension), and the relative magnitude or severity of the consequences (along the vertical dimension) ... it should be noted that the scales are considered to be of a logarithmic nature in that the probabilities involved span many orders of magnitude ..."</li> </ul> <p>As an example, for the Worker Health and Safety pathway case (page 37), in the short term (&lt;100 year) timeframe analysis for absolute risk, the surface storage (status quo + enhanced) case and both underground storage cases appear to have equivalent relative consequence (on a linear rating scale) and similar likelihood of occurrence (on a logarithmic rating scale).</p> <p>For the Public Health and Safety pathway analysis (page 38), and for the same short term interval (&lt;100 years), a similar absolute risk pattern to</p>

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				<p>that expressed for workers appears to be shown, although all case conditions appear to have lower consequence ratings.</p> <p>In these and all other pathway analyses, slight differences in consequence, on a linear scale basis, result. For the two example cases described above, the three storage options shown appear to have similar or close likelihoods of occurrence. However, because the option position along the logarithmically-scaled Likelihood axis may represent widely-varying values, the position shown and absolute likelihood values may be significantly different. The relative position of options on the risk assessment plots have positions differentiated by terms such as “More likely” and “Much more likely”, but positions on the Absolute Risk assessment plots have no similar differentiating terms or other indicated scaling factors, either linear or logarithmic, that quantify the risk elements.</p> <p>b) The report in OPG’s response to EIS 12-513 includes several figures illustrating relative risk for the 12 key features for the near term (&lt;100 years) and long term (&gt;100 years). However, no overall risk summary table or figure was included. Summary tables or figures for both timeframes would provide a clearer portrayal of the overall relative risk of the four identified options. In its response to EIS 12-513, OPG stated that it would be submitting a separate response addressing the Panel’s follow-up comments on the comparison of risk perception among the four options.</p>