Health Canada Santé Canada

Environmental Health Program (EHP)
Regulatory Operations & Regions Branch (RORB), Health Canada
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March 06, 2017

Canadian Environmental Assessment Agency
Deep Geologic Repository Project
Attn: Robyn-Lynn Virtue
160 Elgin Street, 22nd Floor
Place Bell Canada
Ottawa, ON
K1A 0H3

Subject: Health Canada's Technical Review of Ontario Power Generation's Response to the Request for Additional Information for the Deep Geologic Repository for Low and Intermediate-Level Radioactive Waste Project

Dear Ms. Virtue:

Thank you for the letter dated January 18, 2017 from the Canadian Environmental Assessment Agency (the Agency), requesting Health Canada to conduct a technical review of the additional information submitted by Ontario Power Generation (the proponent) for the proposed Deep Geologic Repository for Low and Intermediate-Level Radioactive Waste Project (the Project). Health Canada has participated in the environmental assessment review of the Project as a Federal Authority under the *Canadian Environmental Assessment Act, 2012* (the Act).

As per the Agency's request, Health Canada has reviewed the additional information provided regarding 1) Alternate Locations, 2) Cumulative Effect Analysis, and 3) Mitigation Commitments. Health Canada has provided input where appropriate on the potential for health effects from environmental changes due to the Project as described in the additional information. In the absence of site-specific quantitative assessments, HC has provided general comments and clarification requests to better understand the assessment conclusions. This input is listed in the attached form provided by the Agency.

Thank you for the opportunity to participate in this review process. Should a specific alternate location be assessed by OPG, Health Canada would be pleased to participate in additional reviews. Should the Agency have any questions regarding this response, please contact the undersigned.

Canada

Sincerely,

Kitty Ma
Regional Environmental Assessment Coordinator
Health Canada, Ontario Region
Phone #: <contact information removed>
Fax #: <contact information removed>
Kitty.ma@hc-sc.gc.ca

Attachement :
HC_Comments_Annex_DGR Additional_info_Technical_Review__20170306.pdf

cc: Debby Leblanc, EHP Regional Manager, Health Canada
Gregory Kaminski, Senior Environmental Health Specialist, Health Canada
Aurelia Thevenot, Regional Environmental Assessment Coordinator

Proposed Information Requests on the Technical Merit of the Additional Information

Participant: Health Canada

Organization (if applicable): Health Canada

General Comments: Given the qualitative nature of the additional assessments, comments relate to clarifications on wording, justification of air quality predictions, and requests for additional analysis of malfunctions and accidents

Proposed Information Requests on the Technical Merit of the Additional Information provided by Ontario Power Generation

Information Source *(e.g. section and page# from OPG's response)*	**Proposed Information Request/Comment**	**Rationale**
Updated Cumulative Effects Assessment Section 6.1.1 (Disruptive Scenarios), pg 36	Should failure of both repositories due to some common cause occur earlier than the glaciation timeframe provided, the "longer-term release of other radionuclides via water" should be considered in the effects on human health.	Disruptive scenarios (what-ifs) are reported to be very unlikely to occur, so it was concluded the risk (probability and consequence) remain low. Although the probability may be low, the assessment of consequence does not appear to acknowledge the long-term release of contaminants should remediation not occur in a timely fashion (e.g., staff no longer on site, resources no longer available, etc.)
Environmental Effects of Alternate Locations Sections 4.1.3 (pg 18) and 5.1.3 (pg 44)	It is stated that less mitigation may be required to maintain compliance with air quality standards at the alternate locations due to likely lower background concentrations. However, air quality standards should not necessarily be regarded as "pollute up to" criteria. The Canadian Ambient Air Quality Standards (CAAQS)	Health risks for certain air quality indicator compounds (e.g. particulate matters – PM_{10}, $PM_{2.5}$) exist below ambient standards and objectives. Risk analysis should not be confined to meeting the standards, but should also be targeted towards reducing population exposure at whatever concentrations are found. Therefore it would be good practice to implement mitigation measures during

Proposed Information Requests on the Technical Merit of the Additional Information

Information Source *(e.g. section and page# from OPG's response)*	**Proposed Information Request/Comment**	**Rationale**
	principles of Keeping Clean Areas Clean and Continuous Improvements should be equally taken into account in designing mitigation measures, monitoring, and follow-up activities for the Bruce Nuclear site and alternate locations.	construction and operations to reduce concentrations of these compounds to as low as possible to ensure human health is protected.
Environmental Effects of Alternate Locations Sections 4.1.3 (pg 19) and 5.1.3 (pg 45)	Provide a discussion on the changes, if any, to the magnitude, frequency or extent of effects at the alternate locations relative to the DGR Project at the Bruce Nuclear site, due to increased duration and extent of construction activities for the additional surface facilities.	According to Table 3-1 and the text in Section 4.1.3, additional activities will be required for the construction of surface facilities over 40 ha at the alternate locations. Incremental effects on air quality were deemed unlikely as "*peak hourly activity was used to predict a bounding emission rate*" for the Bruce Nuclear site. However, additional construction activities would lead to an increase in frequency of effects, which is not discussed.
Environmental Effects of Alternate Locations Sections 4.6 (pg 35) and 5.6 (pg 57)	Include a discussion on risks to human health from radiation and radioactivity in the event of an accident or malfunction.	The effects on human health from malfunctions and accidents are dependent on the distance to and sensitivity of receptors. Also, given that crystalline rock is "*likely to be more permeable than the […] sedimentary rock*", the risk of exposure due to accidents and malfunctions should be discussed for the crystalline rock alternative, and compared with that of the Bruce Nuclear site.
Please use as many pages as necessary.		