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April 7, 2017

Our File: CEAA-OPG-DGR

**Historic Saugeen Metis**  
**Written Submission to**  
**Canadian Environmental Assessment Agency**

**Comments on**  
**Ontario Power Generation**  
**Additional information**

**Deep Geologic Repository**  
**For Low and Intermediate Level Radioactive Waste**  
**Bruce Site – Tiverton, Ontario**

**and**

**Environmental Assessment Decision Statement**  
**Potential Conditions**

Submitted by:  
Historic Saugeen Metis Council

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## EXECUTIVE SUMMARY

Historic Saugeen Metis (HSM) believe that potential adverse impacts arising from the Project to asserted Aboriginal rights have been described accurately.

Our concerns are for safe operation of the proposed Deep Geologic Repository (DGR) with minimal imprint on the water and lands that support our community's asserted Aboriginal rights. These are communal Aboriginal rights affirmed by Section 35 of the *Constitution Act* (1982), and relate to sustenance and harvesting on the land and in the waters surrounding the site of the proposed Deep Geologic Repository.

HSM has been engaged with Ontario Power Generation (OPG) on the proposed Deep Geologic Repository since 2008. HSM and OPG Working Group meetings began in August, 2010 to discuss the DGR Project. The discussions with OPG have been positive to date. OPG has made timely and effective efforts in addressing HSM's concerns related to the project. HSM looks forward to continuing to be informed, consulted and engaged, and to maintaining the good relationship with Ontario Power Generation.

Historic Saugeen Metis believe that potential adverse impacts of the project have been adequately addressed by the Joint Review Panel's recommendations.

The Joint Review Panel Report makes 97 recommendations in the following categories;

- 10 under Fish and Fish Habitat
- 4 under Aquatic Species at Risk
- 1 under Migratory Birds
- 45 under Federal Authority
- 17 under Non-CEAA Act, 2012 to Consider a Licence to Prepare Site and Construct
- 12 under Non-CEAA Act, 2012 Related to Future Licences
- 8 under Recommendations to Government

Fifty one (51) recommendations have been noted as relevant for Historic Saugeen Metis follow-up for monitoring and engagement because they involve the natural environment, land, water, air, terrestrial, aquatic, socio-economic impacts and human health.

Other recommendations not noted for follow-up (46) pertain to engineering, mathematical computer models, or legislative and regulatory procedures.

HSM expect to be involved in monitoring the DGR as the project goes forward; given the significance of the threat posed to their constitutionally protected Aboriginal rights, they require a high degree of consultation. A clear and formalized understanding of the way that HSM concerns will be considered and integrated into long-term decision-making processes will need to be developed.

Given HSM's traditional use of the lands in the area of the proposed Deep Geologic Repository and surrounding lands, the Historic Saugeen Métis have a profound need for involvement over the project period. Accordingly, HSM has a substantial interest in many

decisions relating to the management of activities at the site operated by Ontario Power Generation.

HSM has reviewed the technical information provided in the Additional Information documents and has made no Information Requests (IR) at this time.

Additional meetings with CEAA involving our staff and technical consultants will address specific questions and concerns arising from its Analysis, Conclusions, and Recommendations Report. The Crown will also produce a Consultation Report. There will be opportunity to meet and discuss with CEAA the potential environmental assessment conditions.

HSM continue to support development of the DGR at the Bruce Nuclear site.

We trust the Canadian Environmental Assessment Agency (CEAA) will give our comments careful consideration.

## **DOCUMENT STRUCTURE**

To assist the Agency, HSM's written submission will focus on the following areas:

1. Impacts Arising from the Project to Asserted Aboriginal Rights
2. Previous Written Submissions and Oral Presentations
3. Engagement Activities with Ontario Power Generation
4. CEAA Engagement Activities with HSM
5. Ontario Power Generation – Additional Information
6. Impacts from the Project Addressed by Panel Recommendations
7. Decision Statement and Potential Conditions
8. Remaining Issues or Concerns
9. Conclusions and Recommendations

### **1.0 IMPACTS ARISING FROM THE PROJECT TO ASSERTED ABORIGINAL RIGHTS**

Historic Saugeen Metis (HSM) are descendants of the local Metis who were in the Metis traditional Saugeen Territory prior to treaties or settlement. The community asserts credible S. 35 aboriginal rights, and credible communal rights according to the Supreme Court decision R. vs. Powley (2003) and is located today at Southampton, Ontario within the regional study area of the project. The community harvest in the immediate area of the Ontario Power Generation (OPG) proposed Deep Geologic Repository (DGR).

Historic Saugeen Metis believe that potential adverse impacts arising from the Project to asserted Aboriginal rights have been described accurately in the Joint Review Panel Report (May 6, 2015) on the DGR Environmental Assessment Decision Statement and Potential Conditions for the project.

Our concerns are for safe operation of the proposed Deep Geologic Repository (DGR) with minimal imprint on the water and lands that support our community's asserted Aboriginal rights. These are communal Aboriginal rights affirmed by Section 35 of the *Constitution Act* (1982), and relate to sustenance and harvesting on the land and in the waters surrounding the site of the proposed Deep Geologic Repository.

Historic Saugeen Metis are likely to be directly affected by the project resulting from site-specific changes to the ecology involving aquatic and terrestrial receptors (plants and invertebrates), as well as some off-site receptors residing in Lake Huron. Species At Risk (SAR) which have the ability to move beyond the project boundary are of particular interest to Saugeen Metis. They include deer, different types of birds and bats, and Monarch butterfly. There may also be methods to replace or transfer Butternut trees and Eastern White Cedar to new areas beyond the project footprint.

Baie du Dore Wetland and Lake Huron embayments in proximity to the DGR area may be affected by soil and surface water run-off without effective mitigation measures.

Employment for Metis people resulting from the project will also be of interest.

## **2.0 PREVIOUS WRITTEN SUBMISSIONS AND ORAL PRESENTATIONS AT PUBLIC HEARINGS**

HSM have made previous written submissions and oral presentations at Public Hearings into the DGR in 2013 and again in 2014. In 2015 we responded to the Canadian Nuclear Safety Commission's (CNSC) request for comments on the Joint Review Panel Report (JRP) (May 6, 2015) on the DGR Environmental Assessment Decision Statement and Potential Conditions for the project. This included a summarized list of comments on most recommendations from the JRP Report with our proposed follow-up activities for consultation and engagement.

## **3.0 ENGAGEMENT ACTIVITIES WITH ONTARIO POWER GENERATION**

### **3.1 HSM-OPG Working Group Meetings**

HSM has been engaged with Ontario Power Generation (OPG) on the proposed Deep Geologic Repository since 2008. HSM and OPG Working Group meetings began in August, 2010 to discuss the DGR Project. The discussions with OPG have been positive to date. OPG has made timely and effective efforts in addressing HSM's concerns related to the project. HSM looks forward to continuing to be informed, consulted and engaged, and to maintaining the good relationship with Ontario Power Generation.

Working Group Meetings held since 2010 are as follows:

- 2017 held 1 meeting

- 2016 held 3 meetings
- 2015 held 3 meetings
- 2014 held 4 meetings
- 2013 held 2 meetings
- 2012 held 1 meeting
- 2011 held 1 meeting
- 2010 held 2 meetings

### **3.2 HSM-OPG Engagement Plan & Log**

The purpose of engagement is:

- Develop Engagement Plan, work plan, and budget
- Assist with Deep Geologic Repository application
- Prepare for and attend Public Hearing
- Respond to Information Requests
- Site visits and environmental monitoring
- Participate in project information meetings.

Engagement methods include:

- Project information meetings face-to-face
- Written notification, including reports
- Tele-conferences
- HSM Council and Community information meetings
- Attendance at Public Hearings
- Site visits.

The up-to-date Engagement Plan and Log are provided in Appendix A.

### **4.0 CEAA ENGAGEMENT ACTIVITIES WITH HSM**

In a letter dated February 27, 2015 the Canadian Environmental Assessment Agency (CEAA) advised HSM about aboriginal consultation for the Deep Geologic Repository Project for Low and Intermediate Level Radioactive Waste (DGR). The Agency consulted with Historic Saugeen Metis on the Environmental Assessment Report and proposed environmental assessment decision statement conditions for the DGR Project following the submission of the Environmental Assessment Report by the Joint Review Panel (JRP).

After considering the Panel's report, the Minister determined that further information was required from the proponent to support her decision-making under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). On February 18, 2016 a request was made to the proponent for additional information on three aspects: alternate locations for the Project, cumulative environmental effects of the project, and an updated list of mitigation commitments for each identified adverse effect.

In a letter dated October 11, 2016 CEAA advised HSM about the next steps in the environmental assessment process and how Crown consultation would be integrated into that process. The Agency, on behalf of the Minister, and assisted by federal authorities, including the Canadian Nuclear Safety Commission (CNSC) would analyze the information.

The Agency, as Crown Consultation Co-ordinator, would consult with Historic Saugeen Metis on the additional information, the Agency's analysis, and the potential environmental assessment conditions the Government of Canada would recommend to the Minister for inclusion in the Decision Statement should the project be allowed to proceed.

In a letter dated October 25, 2016 CEAA provided a Draft Consultation Work Plan for the government on the Project and invited HSM comments to assist in refining the approach. The Draft Consultation Work Plan stated that the Agency would participate in one-on-one consultation sessions with Historic Saugeen Metis and work with HSM to identify possible accommodation measures for potential adverse impacts of the project on potential or established Aboriginal or treaty rights, where appropriate. This same letter mentioned that on September 7, 2016 the Agency provided the proponent with clarification and direction for responding to all three elements of the minister's request.

The Draft Consultation Work Plan listed a number of Crown Consultation Objectives, among them:

- determine how potentially impacted indigenous groups would like to be consulted in regard to the remaining steps of the environmental assessment and establish a flexible and responsive consultation approach,
- respond to specific requests by potentially impacted Indigenous groups, address topic-specific issues related to the project, if possible, and to gather input from potentially impacted Indigenous groups regarding their concerns about the project.

On November 17, 2016 HSM met with CEAA staff. At that meeting CEAA provided anticipated timelines for environmental assessment of the Deep Geologic Repository (DGR) based on new information requested by the federal Minister of Environment and Climate Change. HSM has also received and discussed a Draft Consultation Plan from CEAA. When CEAA produces a report with its analysis, conclusions, and recommendations HSM will be able to review, evaluate, and provide comments.

On February 3, 2017 HSM met with CEAA staff. At that meeting CEAA provided an updated version of estimated timelines for environmental assessment of the Deep Geologic Repository (DGR)

Additional meetings with CEAA involving our staff and technical consultants will address specific questions and concerns arising from its Analysis, Conclusions, and Recommendations Report. The Crown will also produce a Consultation Report. There will be opportunity to meet and discuss with CEAA the potential environmental assessment conditions.

In summary, the HSM Work Plan with CEAA involves two components;  
1) review and comment on Additional Information submitted by the proponent  
2) review and comment on the Agency's analysis and potential conditions.

## **5.0 ONTARIO POWER GENERATION – ADDITIONAL INFORMATION**

On December 28, 2016 the Canadian Environmental Assessment Agency received the additional information form Ontario Power Generation in response to an Information Request made by the Minister of Environment and Climate Change on February 18, 2016 regarding the Deep Geologic Repository for Low and Intermediate Level Radioactive Waste Project.

### **5.1 Study of Alternate Locations Main Submission**

OPG's study shows that there would be more environmental effects of a DGR at an alternate location than the environmental effects of the DGR Project at the Bruce Nuclear site. This results from:

- increased effects on air quality, including increased GHG emissions, due to waste transportation from the WWMF to the alternate location;
- increased effects on noise levels due to likelihood of quieter background levels at the alternate locations;
- adverse effects on vegetation communities from increased clearing during site preparation and construction of surface facilities and supporting infrastructure, including access roads;
- adverse effects on wildlife communities due to establishment of a new up to 900 ha site with associated indirect effects from vegetation loss and habitat fragmentation;
- effects on traditional and non-traditional land use due to establishment of a new site and change in land use, traffic from waste transport and workers, and indirect nuisance related effects relative to background levels;
- increased worker radiation exposure during waste transportation; and
- establishment of new sources of radiation exposure at a location where here is likely to be no existing anthropogenic sources of exposure.

OPG's study shows that the incremental costs for implementing a DGR at an alternate location would range from \$1.2B and \$3.5B (this is in addition to the current cost of \$2.4B (2017\$) for the DGR Project at the Bruce Nuclear site). These additional costs are attributable to the range of activities that would be required for an alternate location including a multi-year consent based siting process; acquisition of land; development and implementation of services to support facility operation; repackaging and transportation; and re-starting the regulatory approvals and licensing process.

OPG therefore concludes that the DGR Project at the Bruce Nuclear site remains the preferred location based on a relative consideration of environmental effects, transportation risks, transportation and other project-related costs and uncertainties; and



the absence of any guarantee of improved safety or environmental quality at an alternate location.

The Project - The DGR at an alternate location assumes the same design as the DGR Project at the Bruce Nuclear site including above-ground/surface infrastructure and below-ground/underground facilities, specifically two shafts, a number of emplacement rooms, and support facilities for the long-term management of L&ILW.

Project Phases and Timelines - The current in-service date for the DGR Project at the Bruce Nuclear site is 2026. The addition of a site selection phase, along with the time required for construction would make the Alternate Project in-service dates at least 20-30 years later than the in-service date of the DGR Project at the Bruce Nuclear site. The in-service date would be approximately 2045 for a sedimentary location and 2055 for a crystalline location (assuming more time to accommodate a more complex geology and site characterization).

Environmental Effects at Alternate Locations - Valued Components (VCs) refer to environmental features that may be affected by a project. The selection of appropriate VCs allows the assessment to be focused on those aspects of the natural and human environment that are of greatest importance to society. The list of VCs considered in an alternative means analysis is dependent on the nature of the alternative means under consideration (in this case only alternate locations) and those VCs most likely to be affected. For the purposes of this assessment the VCs include the environmental components as defined in section 5(1) (a) of CEAA 2012 (i.e., fish habitat and aquatic species are considered under the aquatic habitat and aquatic biota VCs, migratory birds are considered under the wildlife and wildlife habitat VC), and were also chosen to encompass the range of changes in environmental conditions that may be encountered. These VC groupings are also consistent with the VCs used in the EIS for the DGR Project at the Bruce Nuclear site, which was based on input from the public in preparing the EIS guidelines for the prior assessment [OPG 2011].

Environmental Effects Summary - A DGR could be constructed at either of the alternate locations without any likely significant adverse environmental effects. However, environmental effects are likely to be greater at both the sedimentary and crystalline alternate locations as compared to those at the DGR Project at the Bruce Nuclear site.

Transportation Costs - Indicative costs estimates were developed for each waste category for each of four assumed transport distances. Representative distances from the WWMF to the alternate locations are 100 and 300 kilometres for the sedimentary alternate location; and, 200 and 2000 kilometres for the crystalline alternate location.

Supporting and Welcoming Host Communities - For a DGR at an alternate location, OPG estimates that it would take almost two decades to identify a suitable alternate site through detailed site investigations and to garner a willing host community in a participatory process. While OPG is confident that it would ultimately be successful, the time and resources required to obtain that support would introduce uncertainty.

Relationships with Indigenous Communities - The Historic Saugeen Métis (HSM) describe themselves as descendants of the historic Métis who have resided along the Lake Huron proper shoreline from the islands at the tip of the Bruce Peninsula to the Ausable River system (south of Goderich) in the vicinity of Port Franks, beginning in 1818. An agreement between OPG and HSM was established in 2010 providing capacity to facilitate their engagement on the DGR Project. OPG and HSM continue to engage in matters of mutual interest and concern.

Summary and Conclusions - The federally-appointed Joint Review Panel issued its Environmental Assessment Report in May of 2015, confirming that OPG's DGR at the Bruce Nuclear site is the preferred solution for the management of OPG's L&ILW. The Panel concluded that the DGR is not likely to cause significant adverse environmental effects, taking into consideration the commitments made by OPG, the proposed mitigation measures and the recommendations of the Panel. Further the Panel concluded the DGR would not affect Lake Huron and the DGR should be built sooner rather than later to ensure the waste is isolated from the surface environment.

HSM has reviewed the technical information provided in this Additional Information document and has made no Information Requests (IR) at this time.

Historic Saugeen Metis believe that potential adverse impacts of the project have been adequately addressed by the Joint Review Panel's recommendations. Historic Saugeen Metis believe that potential adverse impacts arising from the Project to asserted Aboriginal rights have been described accurately in the Joint Review Panel Report (May 6, 2015) on the DGR Environmental Assessment Decision Statement and Potential Conditions for the project.

HSM continue to support development of the DGR at the Bruce Nuclear site.

## **5.2 Description of Alternate Locations**

Executive Summary - OPG has identified two alternate locations that meet its technical and economic feasibility criteria: (a) one in crystalline rock of the Canadian Shield in central to northern Ontario, and (b) one in a sedimentary rock formation in southern Ontario. While these crystalline and sedimentary alternate locations meet these feasibility criteria, further steps would be necessary before a site is selected. Those steps would include implementing a site selection process, which would impose additional criteria beyond the feasibility criteria described above.

This document provides representative environmental features of the alternate locations, including land use; surface topography; hydrology; aquatic, terrestrial, and atmospheric conditions. The description also identifies the main differences in DGR facilities and activities that would be necessary at these alternate locations, due to their particular characteristics.

HSM has reviewed the technical information provided in this Additional Information document and has made no Information Requests (IR) at this time.

HSM continue to support development of the DGR at the Bruce Nuclear site.

### **5.3 Environmental Effects of Alternate Locations**

A DGR at an alternate location could be constructed without any likely significant environmental effects. However, environmental effects of a DGR at an alternate location (both sedimentary and crystalline rock) are likely to be greater as compared to the DGR Project at the Bruce Nuclear site. Increased environmental effects include:

- \_increased effects on air quality, including greenhouse gases, during waste transportation from OPG's Western Waste Management Facility (WWMF) to the alternate location;
- \_increased effects on noise levels due to likelihood of lower background levels at the alternate locations;
- \_adverse effects on vegetation communities from increased clearing during site preparation and construction of surface facilities and supporting infrastructure, including access roads;
- \_adverse effects on wildlife communities due to establishment of a new site (up to 900 ha) with associated indirect effects from vegetation loss and habitat fragmentation;
- \_effects on traditional and non-traditional land use due to establishment of a new site and change in land use, traffic from waste transport and workers, and indirect nuisance-related effects relative to background levels;
- \_increased worker exposure during waste transportation; and
- \_establishment of new sources of radiation exposure at a location where there are likely to be no existing anthropogenic sources of exposure.

HSM has reviewed the technical information provided in this Additional Information document and has made no Information Requests (IR) at this time.

HSM continue to support development of the DGR at the Bruce Nuclear site.

### **5.4 Cost and Risk Estimate for Packaging and Transporting Waste To Alternate Locations**

Executive Summary - The inventory of low level waste (LLW) and intermediate level waste (ILW) that forms the basis for the estimate provided in this study includes that generated by the operation of the Pickering, Darlington and Bruce nuclear plants that is anticipated to reside at the WWMF at the time that the L&ILW DGR is expected to be available to initiate waste emplacements. For purposes of this study, cost estimates are developed for a range of road transport distances for two scenarios, including 100 km and 300 km with DGR availability beginning in year 2045 at an alternate location with a host geology of sedimentary rock, and 200 km and 2,000 km with DGR availability beginning in year 2055 at an alternate location with a host geology of crystalline rock.

HSM has reviewed the technical information provided in this Additional Information document and has made no Information Requests (IR) at this time.

HSM continue to support development of the DGR at the Bruce Nuclear site.

## **5.5 Updated Analysis of Cumulative Environmental Effects**

Executive Summary - As requested by the Minister of the Environment and Climate Change, OPG has completed an updated cumulative effects assessment for the DGR Project at the Bruce Nuclear site in light of recent work undertaken by the Nuclear Waste Management Organization (NWMO) with three potential host municipalities for an Adaptive Phased Management Deep Geological Repository (APM DGR). The updated assessment is based on a project description prepared for an APM DGR by NWMO for the purposes of this updated analysis and considers the three municipalities of Huron Kinloss, South Bruce, and Central Huron.

The updated cumulative effects assessment of the APM DGR identified no likely adverse cumulative effects given the location of the potential site for the APM DGR and the limited extent of the environmental effects of the DGR Project at the Bruce Nuclear site and the APM DGR. Moreover, the updated assessment concluded that cumulative effects as a result of malfunctions, accidents and malevolent acts from the DGR Project at the Bruce Nuclear site and the APM DGR are unlikely. Since no adverse cumulative effects were identified, an assessment of significance of cumulative effects is not required. The original conclusions presented in the Environmental Impact Statement (EIS) regarding cumulative effects of the DGR Project at the Bruce Nuclear site and other projects and activities remain valid when the APM DGR is considered.

HSM has reviewed the technical information provided in this Additional information document and has made no Information Requests (IR) at this time.

HSM continue to support development of the DGR at the Bruce Nuclear site.

## **5.6 APM DGR Preliminary Description**

This document presents a preliminary description of an APM Deep Geological Repository for used nuclear fuel (APM DGR). In this description, this facility is assumed to be located within the boundaries of the Township of Huron-Kinloss, the Municipality of South Bruce, or the Municipality of Central Huron, and within Saugeen Ojibway Nation (SON) traditional territory. This description is provided in order to assist Ontario Power Generation (OPG) in preparing its response to the federal Minister of Environment and Climate Change Canada request for an updated analysis of the cumulative environmental effects of the OPG DGR project, assuming an APM DGR were to be built in one of these communities

This document presents a description at a conceptual level for a deep geological repository facility for used nuclear fuel. The description is based on what is known or reasonably expected at the present time, assuming that a suitable site for a used fuel repository has

been identified in one of these three communities involved in the APM siting process. A definitive description would be completed in the future if a site were actually to be selected, and the site, design, community input and environmental assessments had been completed, consistent with NWMO's siting process. NWMO would not proceed without the involvement of the interested community, First Nation and Métis communities, and surrounding communities working to implement the project.

HSM has reviewed the technical information provided in this Additional Information document and has made no Information Requests (IR) at this time.

HSM continue to support development of the DGR at the Bruce Nuclear site.

### **5.7 Mitigation Measures Report**

This report provides an updated list of mitigation and monitoring commitments for each identified adverse effect for the DGR Project at the Bruce Nuclear site. They are presented in ten tables, one for each Environmental Component (e.g., Geology, Aquatic, etc.). Within each table the commitments are presented according to Valued Component and topic (e.g., Soil Quality, Stormwater Management). Each commitment is numbered and the table includes all references to similar or duplicate commitments.

The methodology for consolidating the commitments is described, and completed and updated commitments are presented in a separate table. The full list of unconsolidated commitments including redundancies is also included as an appendix for traceability and cross-referencing. A concordance table between OPG's commitments and the Canadian Environmental Assessment Agency's 2015 potential conditions is also provided.

HSM has reviewed the technical information provided in this Additional Information document and has made no Information Requests (IR) at this time.

Historic Saugeen Metis believe that potential adverse impacts of the project have been adequately addressed by the Joint Review Panel's recommendations. Historic Saugeen Metis believe that potential adverse impacts arising from the Project to asserted Aboriginal rights have been described accurately in the Joint Review Panel Report (May 6, 2015) on the DGR Environmental Assessment Decision Statement and Potential Conditions for the project.

HSM continue to support development of the DGR at the Bruce Nuclear site.

## **6.0 IMPACTS ARISING FROM THE PROJECT ADDRESSED BY PANEL RECOMMENDATIONS**

Historic Saugeen Metis believe that potential adverse impacts of the project have been adequately addressed by the Joint Review Panel's recommendations.

A total of 97 recommendations were made in the Joint Review Panel's report. Of these, 46 recommendations have the potential to directly affect Historic Saugeen Metis with environmental, socio-economic, and/or health consequences and therefore have the requirement for HSM to be involved with follow-up notification, engagement and/or monitoring during many phases of the Project.

Recommendations of the Joint Review Panel and matching follow-up by HSM is summarized in Appendix B.

**Recommendation 3.1:** Before a Licence to Prepare Site and Construct is granted, OPG shall submit to the CNSC an updated list of mitigation commitments for each identified adverse effect. OPG shall remove outdated or redundant commitments from this list.

**HSM Follow-up:** HSM to Receive Up-dated List of Mitigation Commitments and be provided an opportunity to review and comment.

**Proposed New Recommendation:** To the satisfaction of the CNSC, OPG shall prepare an updated document summarizing all environmental monitoring plans (including groundwater) that includes all previously planned or committed monitoring, as well as additional monitoring resulting from the JRP EA report recommendations. The monitoring programs should include timing, locations, frequency and analytical parameters.

**HSM Follow-up:** HSM to receive up-dated list of all monitoring plans and be provided an opportunity to review and comment.

**Recommendation 8.1:** In order to confirm the prediction in the environmental assessment of no significant adverse effects on air quality, and to address specific concerns of individuals living at or near the critical receptor locations used in the EIS models, OPG shall, to the satisfaction of the CNSC, conduct a monitoring program for NOx and particulates, including PM10 and PM2.5, during site preparation and construction.

**HSM Follow-up:** HSM to Receive Results of Monitoring Program for Air Quality -NOx and Particulates

**Recommendation 8.2:** Prior to site preparation, OPG shall finalize and submit a detailed plan to manage air emissions, to the satisfaction of CNSC. The management plan should be reviewed by Environment Canada, Health Canada and the Ontario Ministry of the Environment and Climate Change. The plan should include details of the mitigation measures, including thresholds for corrective management actions; frequency of site inspections; and record keeping.

**HSM Follow-up:** HSM to Receive Plan to Manage Air Emissions

**Recommendation 8.3:** In order to avoid significant adverse effects on near-surface

hydrology, prior to beginning construction of the stormwater management system, OPG shall verify that the overburden stratigraphy at the site is the same as predicted in the EIS. If unexpected, higher permeability, stratigraphy is encountered, OPG must assess the potential effect on water levels in the northeast marsh and evaluate and implement mitigation options.

**HSM Follow-up:** HSM to be Notified and Engaged about Effects on Water levels in Northeast Marsh and Mitigation Options and be provided an opportunity to review and comment on new information and interpretations regarding the overburden stratigraphy and hydrogeology.

**Recommendation 8.4:** In order to verify predictions in the environmental assessment regarding the shallow bedrock aquifer, OPG shall, through additional field investigations and testing completed prior to site preparation, up-date the hydrogeologic properties of the till cover in the water balance and surface water/groundwater interaction numerical models. The models should be up-dated to the satisfaction of the CNSC as more data become available.

**HSM Follow-up:** HSM to receive the revised model and overburden assessment results and be provided with an opportunity to review and comment.

**Recommendation 8.5:** In order to verify predictions in the environmental assessment regarding leachate quality, prior to construction OPG shall improve the characterization of the leachate that will be generated by the waste rock piles, by performing kinetic leach tests on existing core samples. During shaft excavation OPG shall conduct field cell studies on the material being deposited in the dolostone, shale, and limestone waste rock piles to verify leachate compositions and the acid generation potential under prevailing conditions. Based on the results of the waste rock leachate characterization, OPG shall assess and verify the suitability of using the waste rock material for construction of any of the facility infrastructure outside of the lined waste rock disposal piles.

**HSM Follow-up:** HSM to receive results of waste rock characterization and be provided an opportunity to review and comment.

**Recommendation 8.6:** In order to verify predictions in the environmental assessment regarding leachate quality, prior to construction OPG shall submit to the CNSC a waste rock characterization program for contaminants of concern other than those linked to acid generating potential (including, but not limited to metals and metalloids released under alkaline conditions, total dissolved solids and hydrocarbons). The OPG waste rock characterization program shall be based on sampling full-strength leachates and be valid for the duration of construction.

**HSM Follow-up:** HSM to Receive Results of Waste Rock Characterization Sampling Program and be provided an opportunity to review and comment.

**Recommendation 8.7:** In order to verify the predictions in the environmental assessment

that there will be no significant adverse effects to aquatic life from the waste rock pile runoff, OPG shall, to the satisfaction of the CNSC, develop a waste rock follow-up program. The follow-up program shall occur through all pre-closure phases of the project and shall address the quantity and quality of leachate and surface runoff directed to the stormwater management system, and shall include sampling of full strength leachates.

**HSM Follow-up:** HSM to be Notified and Engaged about Effects on Aquatic Life from Waste Rock Pile Runoff and be provided an opportunity to review and comment on the leachate and water quality monitoring results.

**Recommendation 8.8:** In order to avoid significant adverse effects to near-surface groundwater, OPG shall place a liner, acceptable to CNSC, under the waste rock management areas to direct leachate to a treatment facility or the stormwater management pond. The liner shall be placed during site preparation and construction, and be developed in consultation with Environment Canada.

**HSM Follow-up:** HSM to be Notified and Engaged about Placement of Liner Under Waste Rock Management Areas and be provided an opportunity to review and comment on the liner design.

**Recommendation 8.9:** In order to avoid significant adverse environmental effects to near-surface groundwater, OPG shall not dispose of waste rock outside the boundaries of the stormwater management pond collection system, during any phase of the project, without the permission of the CNSC.

**HSM Follow-up:** HSM to be Notified If and When Waste Rock is Disposed Outside of Boundaries of Stormwater Management Pond Collection System

**Recommendation 8.10:** In order to verify the predictions in the environmental assessment regarding the effectiveness of the design of the stormwater management system, OPG shall calibrate and verify hydrological and water quality models over the life of the project with new information as it becomes available, including but not limited to, leachate geochemistry and flow rates. The models should be calibrated and verified prior to site preparation, at the end of construction, and periodically during operations, to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to receive the revised model results and be provided with an opportunity to review and comment.

**Recommendation 8.11:** In order to avoid significant adverse effects to surficial and shallow bedrock groundwater, OPG shall place a liner under the stormwater management pond and will also line the stormwater ditches that will convey runoff to the stormwater pond. The liner shall be placed during site preparation and construction. The specifications of the liner should be developed in consultation with Environment Canada.



**HSM Follow-up:** HSM to be Notified and Engaged about Placement of Liner Under Stormwater Management Pond and lining of the ditches. A liner should also be placed for drainage features carrying stormwater to the Stormwater Management Pond. HSM to be provided an opportunity to review and comment on the liner design.

**Recommendation 8.12:** In order to avoid significant adverse effects to surface water quality, OPG shall, prior to construction, submit to the CNSC a plan for treatment of all water destined for discharge from the stormwater management pond. OPG shall treat stormwater management pond releases, to the satisfaction of the CNSC, such that they comply with section 36 of the Fisheries Act throughout construction, operations and decommissioning.

**HSM Follow-up:** HSM to Receive and Review Plan for Treatment of All Water Destined for Discharge from Stormwater Management Pond and be provided an opportunity to review and comment.

**Recommendation 8.13:** In order to prevent significant adverse environmental effects due to over-topping of the stormwater management system, OPG shall review and, if necessary, revise the design of the stormwater management system, to the satisfaction of the CNSC, based upon an assessment of the likelihood of significant changes in the return period and magnitude of major storm events.

**HSM Follow-up:** HSM to receive results of the review of the Storm Water Management System and be engaged in design revisions if required and be provided with an opportunity to review and comment.

**Recommendation 8.14:** In order to prevent significant adverse effects to surface water, OPG shall, to the satisfaction of the CNSC, prepare a contingency plan to mitigate effects of severe storm-related uncontrolled overland flow to Stream C, Baie de Doré, and MacPherson Bay during the period of site preparation before the stormwater management system is fully functional.

**HSM Follow-up:** HSM to Receive Contingency Plan to Mitigate Effects of Storm-related Overland Flow to Stream C, Baie de Dore, and MacPherson Bay and be provided with an opportunity to review and comment on the plan.

**Recommendation 8.15:** In order to confirm the predictions in the environmental assessment and ensure compliance with the Fisheries Act, OPG shall, to the satisfaction of the CNSC and in consultation with Environment Canada, monitor concentrations of relevant contaminants of concern and conduct acute and chronic toxicity tests on the contents of the stormwater management pond prior to discharge.

**HSM Follow-up:** HSM to Receive Results of Toxicity Tests on Contents of Stormwater Management Pond and be provided with an opportunity to review and comment on the results.

**Recommendation 8.16:** In order to confirm the predictions in the environmental assessment, and to ensure compliance with the Fisheries Act, OPG shall implement a follow-up program, to the satisfaction of the CNSC, to monitor a broad spectrum of parameters (e.g., other metals, phosphate, total petroleum hydrocarbons) at the point of discharge of the storm water management pond quarterly, during site preparation and construction, and later during operations.

**HSM Follow-up:** HSM to Receive Water Quality Objectives and Results of Monitoring Parameters at Point of Discharge of Stormwater Management Pond and be provided with an opportunity to review and comment on the objectives and results of monitoring.

**Recommendation 8.17:** In order to verify predictions in the environmental assessment and the effectiveness of the mitigation of water quality by the stormwater management system, and as support for the design of the follow-up monitoring program in MacPherson Bay, OPG shall, in consultation with Environment Canada and to the satisfaction of the CNSC, conduct an effluent dispersion study in MacPherson Bay after commissioning of the stormwater management pond.

**HSM Follow-up:** HSM to be Engaged in the Design of and Receive Results of Effluent Dispersion Study in Macpherson Bay and be provided with an opportunity to review and comment.

**Recommendation 8.18:** In order to verify predictions in the environmental assessment and the effectiveness of the mitigation of water quality by the stormwater management system, OPG shall, in consultation with Environment Canada and to the satisfaction of the CNSC, conduct follow-up monitoring in MacPherson Bay during site preparation and construction, and later during operations. The follow-up monitoring program shall include water quality, sediment quality, benthic invertebrate community indicators, and caged bivalve studies at sampling locations and frequencies determined in consultation with Environment Canada and to the satisfaction of the CNSC. OPG shall ensure that there are adequate baseline data for all follow-up monitoring indicators prior to site preparation.

**HSM Follow-up:** HSM to be Notified and Engaged about Study Design and Follow-up Monitoring for Water Quality in MacPherson Bay integrated with results from Sediment Quality and Invertebrate Community Indicators, and be provided with an opportunity to review and comment.

**Recommendation 8.19:** In order to verify predictions in the environmental assessment, OPG shall develop, to the satisfaction of the CNSC, a follow-up program for flow reduction rates in the North Railway Ditch and Stream C, during site preparation and construction. If monitoring results indicate differences from predictions, OPG shall, to the satisfaction of the CNSC, determine whether mitigation measures are required to ensure there are no significant adverse effects on surface water quantity.

**HSM Follow-up:** HSM to be Notified and Engaged about Follow-up Monitoring Flow Reduction in North Railway Ditch and Stream C and be provided with an opportunity to review and comment.

**Recommendation 8.20:** In order to avoid significant adverse effects to nearshore habitat in MacPherson Bay, OPG shall submit, prior to construction and to the satisfaction of the CNSC, a management plan that provides a detailed description of the options available to increase the capacity of the drainage ditch at Interconnecting Road in the event the flow exceeds the capacity of the ditch. The plan shall identify the relative potential effects of each of the options on the ecology of MacPherson Bay, and consider the relative effects when selecting and implementing the preferred option.

**HSM Follow-up:** HSM to be Notified and Engaged about Options to Increase Ditch Drainage Capacity and be provided with an opportunity to review and comment.

**Recommendation 8.21:** In order to confirm predictions in the environmental assessment regarding effects on wetland water levels, OPG shall conduct monthly monitoring of water levels in the northeast marsh, beginning prior to site preparation and construction in order to establish a baseline. A follow-up program shall then be established, in consultation with Environment Canada and to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to Receive Results of Monthly Monitoring of Water Levels in Northeast Marsh integrated with the results of surface water and groundwater quality and quantity monitoring and receive associated reports for review and comment.

**Recommendation 8.22:** In order to confirm the predictions in the environmental assessment, OPG shall conduct a sediment quality follow-up program in MacPherson Bay during construction and operations. Prior to construction, OPG shall collect additional baseline sediment quality data at the ditch at Interconnecting Road and MacPherson Bay. All sampling shall be conducted to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to Receive Sediment Quality Objectives and Results of Sediment Quality Sampling in MacPherson Bay integrated with results from Water Quality and Benthic Invertebrate Community Monitoring and receive associated reports for review and comment.

**Recommendation 8.23:** Prior to site preparation and construction, OPG shall use information from existing and planned groundwater monitoring wells for verification of the environmental assessment predictions regarding the zone of influence from dewatering during excavation and construction. The verified predictions regarding the zone of influence shall be used for the final design of shaft excavation procedures and infrastructure, including mitigation of groundwater inflow from surficial and shallow bedrock groundwater zones.

**HSM Follow-up:** HSM to Receive Information from Groundwater Monitoring Wells and Analysis about Zone of Influence from Dewatering and be provided with an opportunity to review and comment.

**Recommendation 8.24:** During construction, in order to confirm predictions in the environmental assessment, OPG shall implement a follow-up program for groundwater quality and groundwater inflow rates into the shafts and repository, as well as effects on surrounding groundwater levels in the overburden and shallow bedrock, to the satisfaction of the CNSC. If groundwater inflows exceed predicted values or if the zone of influence is larger than expected, OPG shall implement mitigation measures to either reduce groundwater inflow or the zone of influence. If groundwater loadings and/or concentrations of contaminants of concern exceed environmental assessment predictions, OPG shall implement mitigation measures to avoid adverse effects to surface water quality, to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to be Notified and Engaged about Mitigation Measures if Groundwater Zone of Influence Exceeds Predictions in Environmental Assessment Report and/or Contaminants of Concern Exceed Predictions and be provided with an opportunity to review and comment.

**Recommendation 8.25:** In order to verify the predictions in the environmental assessment, OPG shall, prior to shaft sinking, enhance its capability to detect and monitor the movement of the tritium plume originating from the WWMF by adding an adequate number of monitoring wells up-gradient of the DGR shafts, to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to Receive Information about Location of Monitoring Wells for Tritium Plume and be provided with an opportunity to review and comment.

**Recommendation 8.26:** In order to verify the predictions in the environmental assessment, prior to shaft sinking, OPG shall conduct a comprehensive assessment of the migration of the tritium plume originating from the WWMF site, to the satisfaction of the CNSC. The assessment shall include updated modeling of the tritium plume migration. If groundwater modeling or monitoring indicates that the tritium plume may reach the shaft before the shaft collars are installed, OPG shall prepare a contingency plan, to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to Receive Information about Tritium Plume Migration, and if Necessary, any Contingency Plan and be provide with an opportunity to review and comment.

**Recommendation 8.27:** In order to confirm the absence of significant adverse effects on plants and plant communities, OPG shall monitor the presence of cattails and other aquatic plants important as habitat within the stormwater drainage system, including the stormwater management pond. Baseline conditions should be established prior to habitat

disturbance, and follow-up monitoring should take place after the disturbance of habitat during site preparation, construction and operations phases. This monitoring program should be conducted to the satisfaction of the CNSC and be included in the OPG environmental management system for the project. OPG shall address any significant adverse change in these plant communities, including a shift from native species to species tolerant of saline conditions (halophytes) that may also be non-native (e.g. Common Reed Grass, *Phragmites australis*) that, in turn, would have the potential to affect significant species, such as amphibians and reptiles, in accordance with the Species at Risk Act. The outcome of the monitoring program should be linked to an adaptive environmental management plan consistent with the OPG Biodiversity Policy.

**HSM Follow-up:** HSM to be Notified and Engaged in the development of the Monitoring Program for Cattails and Aquatic Plants within Stormwater Drainage System and receive associated reports for review and comment.

**Recommendation 8.28:** In order to confirm the absence of significant adverse effects on plants and plant communities as predicted in the environmental assessment, OPG shall implement a follow-up program to monitor the naturalization of disturbed areas, during construction and operations, to the satisfaction of the CNSC. If monitoring indicates the presence of invasive plant species and noxious weeds, OPG shall implement appropriate mitigation measures.

**HSM Follow-up:** HSM to be Notified and Engaged in the development of the Monitoring program for Naturalization of Disturbed Areas for Plants and Plant Communities based on restoration of native habitats, and including an Invasive Plant Management Plan, and receive associated reports for review and comment.

**Recommendation 8.29:** In order to verify the prediction in the environmental assessment that there will be no significant adverse effects on plants due to changes in air quality, OPG shall monitor indicators of effects of changes in air quality on plants, both on the Project Area and in the Site Study Area. This monitoring shall occur during site preparation and construction and be conducted to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to Receive Information about Adverse Effects on Plants Due to Changes in Air Quality

**Recommendation 8.30:** In order to enhance the potential of the Project Area as future habitat, OPG shall, prior to decommissioning, submit a detailed re-vegetation plan for the waste rock pile to the CNSC. OPG should consult with Environment Canada when developing the plan.

**HSM Follow-up:** HSM to be Notified and Engaged about Revegetation Plan for Waste Rock Pile, and receive associated reports for review and comment. The naturalization of the waste rock pile should be included in the Monitoring Program for Naturalization of Disturbed Areas for Plants and Plant Communities.

**Recommendation 8.31:** In order to confirm predictions in the environmental assessment regarding effects on aquatic and semi-aquatic species, prior to construction OPG shall submit a follow-up program to the satisfaction of the CNSC. The program shall contain mitigation measures to be taken, should concentrations of total dissolved solids in the storm water management system be observed at levels with the potential to affect sensitive plant or animal species. The plan shall include provisions for the establishment of a self-sustaining plant community that will provide habitat for amphibians, birds, invertebrates and small-bodied fish.

**HSM Follow-up:** HSM to be Notified and Engaged in Follow-up Program and Plan Regarding Effects on Aquatic and Semi-aquatic Species, Plants and Animals, and receive associated reports for review and comment. The naturalization of the storm water management system should be included in the Monitoring program for Naturalization of Disturbed Areas for Plants and Plant Communities.

**Recommendation 8.32:** In order to confirm the predictions in the environmental assessment regarding effects to migratory birds and migratory bird habitat, OPG shall develop and implement a follow-up program, prior to site preparation and to the satisfaction of the CNSC. The program shall include management measures to effectively avoid or minimize the risk of detrimental effects to migratory birds, their nests and eggs, if adverse effects are observed. The plan shall include the provision that if nests are found in open areas, these nests be flagged, marked and buffers placed around them so that no work within the buffer areas occurs until the nesting cycle is complete.

**HSM Follow-up:** HSM to be Notified and Engaged in the development of the Follow-up Program and Plan Regarding Effects on Migratory Birds and Habitat and receive associated reports for review and comment.

**Recommendation 8.33:** In order to avoid significant adverse effects to fish and fish habitat, OPG shall, during site preparation and construction, implement measures to mitigate the effects of culvert installation at the North and South Railway Ditches. Measures shall include: embedding culverts below the bed of the ditch, isolating and dewatering the culvert site during construction, re-vegetating the banks upon completion of construction, and deploying sediment and erosion control measures during construction. In-water works shall not occur between July 1 and September 30.

**HSM Follow-up:** HSM to be Notified and Engaged about Mitigation Measures for Culvert Installation at North and South Railway Ditches

**Recommendation 8.34:** In order to confirm the predictions in the environmental assessment regarding effects to fish and fish habitat, OPG shall develop and implement, prior to site preparation and to the satisfaction of the CNSC, a follow-up program for aquatic life in the stormwater management system and the ditch at Interconnecting Road. The program shall include the collection of supporting water quality and sediment quality data to be used to conduct a risk assessment for fish, fish habitat and aquatic birds.

**HSM Follow-up:** HSM to be Notified and Engaged in Follow-up Program Regarding Effects on Aquatic Life in Stormwater Management System and Ditch at Interconnecting Road and be provided with an opportunity to review and comment.

**Recommendation 8.35:** In order to confirm the prediction in the environmental assessment that there would be no loss of significant plant species, OPG shall confirm the absence of significant plant species in the Project Area prior to site preparation. If significant species are located, OPG shall, in conjunction with appropriate federal and provincial agencies and the CNSC, take action to avoid or mitigate the potential loss.

**HSM Follow-up:** HSM to Receive Information about Significant Plant Species in Project Area and receive associated reports for review and comment.

**Recommendation 8.36:** In order to avoid significant adverse effects to snapping turtle habitat, OPG shall maintain appropriate water levels in the northeast marsh, during and after the rerouting of the drainage ditch, to the satisfaction of CNSC and in consultation with Environment Canada.

**HSM Follow-up:** HSM to Receive Results of Monthly Monitoring of Water Levels in Northeast Marsh, and Analysis of Effects on Snapping Turtles and receive associated reports for review and comment.

**Recommendation 8.37:** In order to avoid significant adverse effects to turtle species at risk, OPG should delay the infilling of “Wetland 3” until the latter years of the site preparation and construction phase.

**HSM Follow-up:** HSM to be Notified of Infilling of Wetland 3 prior to March in the year that it will occur and to be engaged in the salvage of wildlife from the wetland.

**Recommendation 8.38:** In order to confirm the predictions in the environmental assessment regarding snapping turtles, OPG shall conduct turtle surveys of Wetland 3 throughout the years prior to its infilling. A qualified biologist experienced in turtle surveys should conduct a minimum of three surveys per year on sunny days, beginning as soon as the ice cover has melted. The third survey should occur no later than mid-June. OPG shall relocate any and all turtles of any species to the northeast marsh.

**HSM Follow-up:** HSM to be Notified and Engaged in Snapping Turtle Surveys in Wetland 3 and receive associated reports for review and comment.

**Recommendation 8.39:** In order to avoid significant adverse effects on snapping turtles, OPG shall, to the satisfaction of CNSC, implement a management plan to relocate snapping turtles from “Wetland 3” to the northeast marsh prior to the infilling of “Wetland 3”. The plan should be reviewed by Environment Canada and the Ontario Ministry of Natural Resources.

**HSM Follow-up:** HSM to be Notified and Engaged in Snapping Turtle Re-location from Wetland 3 to Northeast Marsh

**Recommendation 8.40:** In order to avoid significant adverse effects on eastern ribbonsnake, eastern milksnake and their habitats, OPG shall develop and implement a management plan, to the satisfaction of the CNSC, to ensure site preparation and construction activities to not disrupt individuals of these species, snake eggs, gestation sites, or hibernacula. OPG should seek input and advice from Environment Canada and the Ontario Ministry of Natural Resources in developing the plan.

**HSM Follow-up:** HSM to be Notified and Receive Information about Eastern Ribbonsnake, Eastern Milksnake and their Habitats Management Plan and receive associated reports for review and comment.

**Recommendation 8.41:** In order to avoid significant adverse effects on turtles and snakes, OPG shall, to the satisfaction of CNSC, ensure that mitigation measures are in place to prevent turtles and snakes from entering the DGR Site, and “Wetland 3” in particular, prior to and during the site preparation and construction phase. Measures should include the installation of exclusion fencing along the southern and eastern edges of the DGR site. Environment Canada should be consulted regarding the specifications of the fence.

**HSM Follow-up:** HSM to be Notified and Receive Information about Mitigation Measures to Prevent Turtles and Snakes from Entering the DGR Site

**Recommendation 8.42:** In order to confirm the predictions in the environmental assessment regarding radiation effects on terrestrial and aquatic species, OPG shall conduct a follow-up program, to the satisfaction of the CNSC, of radiation levels in air, water, soil, sediment, terrestrial and aquatic biota in the Project Area and Local Study Area.

**HSM Follow-up:** HSM to Receive Information from Follow-up Program about Radiation Effects on Terrestrial and Aquatic Species for review and comment.

**Recommendation 8.43:** In order to avoid significant adverse effects on the project due to climate change, OPG shall develop and regularly update a climate change strategy, to the satisfaction of the CNSC. The strategy should incorporate up-to-date climate change models and adaptive management, and be included in the environmental management system for the DGR.

**HSM Follow-up:** HSM to Receive Information about Climate Change Strategy

**Recommendation 9.4:** In order to confirm the environmental assessment prediction of no significant adverse effects to human health from acrolein exposure, OPG shall conduct a follow-up program for acrolein during site preparation, construction and operations, to the satisfaction of the CNSC.



**HSM Follow-up:** HSM to Receive Information from Follow-up Program about Acrolein Exposure and Effects on Human Health

**Recommendation 9.5:** In order to confirm EIS predictions and the effectiveness of mitigation, the noise and vibration monitoring committed to by OPG shall be conducted to the satisfaction of the CNSC and shall be included in the environmental management system for the project. Monitoring shall take place throughout the pre-closure phases of the project. OPG should identify additional monitoring locations in consultation with Health Canada, the Ontario Ministry of the Environment and Climate Change, Aboriginal communities and residents in the Local Study Area. OPG shall develop explicit action levels for noise mitigation, acceptable to the CNSC, taking into consideration input from Aboriginal communities, and permanent and seasonal residents in the Local Study Area.

**HSM Follow-up:** HSM to be Notified and Engaged in Monitoring of Noise and Vibration Mitigation

**Recommendation 9.6:** In order to confirm the environmental assessment prediction of no significant adverse effects from exposure to radiation for members of the public, including members of Aboriginal groups, OPG shall add the collection of soil samples within the Site Study and Local Study Area to the Radiological Environmental Monitoring Program for the DGR during the Construction Phase.

**HSM Follow-up:** HSM to Receive Information and Analysis of Soil Sampling for Effects from Exposure to Radiation

**Recommendation 10.2:** In order to avoid significant adverse environmental effects, including effects to fish or fish habitat, due to malfunctions, accidents or malevolent acts, OPG shall develop and implement a detailed spill response plan for all phases of the project. The spill plan must be acceptable to the CNSC and include an assessment of containment methods, locations and strategies to demonstrate that spill mitigation will be deployed in time to prevent downstream effects.

**HSM Follow-up:** HSM to Receive Information about Spill Response Plan for All Phases of the Project

**Recommendation 11.1:** In order to confirm the environmental assessment prediction of no significant adverse socio economic effects to valued social and economic components due to dust and noise, OPG shall develop a follow-up program, acceptable to the CNSC, prior to site preparation and construction.

**HSM Follow-up:** HSM to be Notified and Engaged in Follow-up Monitoring of Dust and Noise Mitigation

**Recommendation 13.A:** The CNSC, in consultation with other government agencies including Natural Resources Canada and the Ontario Ministry of Natural Resources,

should evaluate institutional control options to restrict access to the surface and sub-surface of the DGR site. The evaluation should be completed in time to support the decommissioning licensing phase.

**HSM Follow-up:** HSM to be Notified and Engaged about Control Options to Restrict Access to Surface and Sub-surface of DGR Site

**Recommendation 14.1:** In order to confirm environmental assessment predictions regarding effects on lake whitefish, OPG shall develop a follow-up program which includes provisions to incorporate input from interested stakeholders, including the Saugeen Ojibway Nation fisheries specialists. The follow-up program should reflect the increasing understanding of the role of MacPherson Bay in the ecology of the area, and should include mitigation measures that may be implemented to protect lake whitefish and lake whitefish nursery areas, to the satisfaction of the CNSC.

**HSM Follow-up:** HSM to be Notified and Engaged in Follow-up Program Regarding Effects on Lake Whitefish and receive associated reports for review and comment.

## **7.0 DECISION STATEMENT AND POTENTIAL CONDITIONS**

If the Project is allowed to proceed, an environmental assessment decision statement under the *Canadian Environmental Assessment Act, 2012* would include conditions that would require the proponent to implement measures that mitigate likely significant adverse environmental effects that were taken into account by the Minister in making a decision on the significance of adverse environmental effects. The decision statement would also set out the requirements of a follow-up program that would include monitoring to determine the effectiveness of mitigation measures.

We would be pleased to provide comments when potential conditions are received from CEAA.

## **8.0 REMAINING ISSUES OR CONCERNS**

Historic Saugeen Metis believe that there are no outstanding issues or concerns remaining about the Project following the Joint Review Panel's report.

Historic Saugeen Metis request that the mitigation strategies and plans identified by the approved conditions be integrated across disciplines where possible. Schedules for consultation, plan development and implementation should be developed and communicated to stakeholders. The sites for habitat, groundwater and surface water monitoring, erection of protective fencing, and locations for habitat creation should be matched at a suitable scale.

## **9.0 CONCLUSIONS AND RECOMMENDATIONS**

Historic Saugeen Metis believe that potential adverse impacts arising from the Project to asserted Aboriginal rights have been described accurately.

Historic Saugeen Metis believe that potential adverse impacts of the project have been adequately addressed by the Joint Review Panel's recommendations.

Historic Saugeen Metis believe that there are no outstanding issues or concerns remaining about the Project following the Joint Review Panel's report.

## **APPENDIX A**

### **ENGAGEMENT PLAN & LOG**

**Historic Saugeen Metis  
Written Submission to  
Canadian Environmental Assessment Agency**

**Additional information  
Deep Geologic Repository  
For Low and Intermediate Level Radioactive Waste**

**Ontario Power Generation**

**Bruce Nuclear Site  
Tiverton, Ontario**

## **APPENDIX B**

### **JOINT REVIEW PANEL RECOMMENDATIONS**

**Historic Saugeen Metis  
Written Submission to  
Canadian Environmental Assessment Agency**

**Additional information  
Deep Geologic Repository  
For Low and Intermediate Level Radioactive Waste**

**Ontario Power Generation**

**Bruce Nuclear Site  
Tiverton, Ontario**

CEAA - OPG - DGR - JRP Report Recommendations  
Sept. 1, 2015

	A	B	C	D	E
1	Recommendation	Topic	Text	HSM Follow-up	
2	3.1	Update List Mitigation Commitments	Before a Licence to Prepare Site and Construct is granted, OPG shall submit to the CNSC an updated list of mitigation commitments for each identified adverse effect. OPG shall remove outdated or redundant commitments from this list. Before a Licence to Prepare Site and Construct is granted, OPG shall submit to the CNSC an updated list of mitigation commitments for each identified adverse effect. OPG shall remove outdated or redundant commitments from this list.	HSM to Receive Up-dated List of Mitigation Commitments	
3	New Recommendation	Updated Summary Document All Environmental Monitoring Plans	To the satisfaction of the CNSC, OPG shall prepare an updated document summarizing all environmental monitoring plans (including groundwater) that includes all previously planned or committed monitoring, as well as additional monitoring resulting from the JRP EA report recommendations. The monitoring programs should include timing, locations, frequency and analytical parameters.	HSM to receive up-dated list of all monitoring plans and be provided an opportunity to review and comment.	
4	8.1	Monitoring Program for NOx and Particulates	In order to confirm the prediction in the environmental assessment of no significant adverse effects on air quality, and to address specific concerns of individuals living at or near the critical receptor locations used in the EIS models, OPG shall, to the satisfaction of the CNSC, conduct a monitoring program for NOx and particulates, including PM10 and PM2.5, during site preparation and construction.	HSM to Receive Results of Monitoring Program for Air Quality -NOx and Particulates	
5	8.2	Plan to Manage Air Emissions	Prior to site preparation, OPG shall finalize and submit a detailed plan to manage air emissions, to the satisfaction of CNSC. The management plan should be reviewed by Environment Canada, Health Canada and the Ontario Ministry of the Environment and Climate Change. The plan should include details of the mitigation measures, including thresholds for corrective management actions; frequency of site inspections; and record keeping.	HSM to Receive Plan to Manage Air Emissions	
6	8.3	Effects on Near-surface Hydrology	In order to avoid significant adverse effects on near-surface hydrology, prior to beginning construction of the stormwater management system, OPG shall verify that the overburden stratigraphy at the site is the same as predicted in the EIS. If unexpected, higher permeability, stratigraphy is encountered, OPG must assess the potential effect on water levels in the northeast marsh and evaluate and implement mitigation options.	HSM to be Notified and Engaged about Effects on Water levels in Northeast Marsh and Mitigation Options	
7	8.4	Groundwater-Surface Water Interaction	In order to verify predictions in the environmental assessment regarding the shallow bedrock aquifer, OPG shall, through additional field investigations and testing completed prior to site preparation, up-date the hydrogeologic properties of the till cover in the water balance and surface water/groundwater interaction numerical models. The models should be up-dated to the satisfaction of the CNSC as more data become available.	HSM to receive the revised model and overburden assessment results and be provided with an opportunity to review and comment. HSM to be Notified and Engaged about water balance and groundwater-surface water interaction numerical models.	
8	8.5	Characterization of Leachate and Kinetic Leach Tests	In order to verify predictions in the environmental assessment regarding leachate quality, prior to construction OPG shall improve the characterization of the leachate that will be generated by the waste rock piles, by performing kinetic leach tests on existing core samples. During shaft excavation OPG shall conduct field cell studies on the material being deposited in the dolostone, shale, and limestone waste rock piles to verify leachate compositions and the acid generation potential under prevailing conditions. Based on the results of the waste rock leachate characterization, OPG shall assess and verify the suitability of using the waste rock material for construction of any of the facility infrastructure outside of the lined waste rock disposal piles.	HSM to receive results of waste rock characterization and be provided an opportunity to review and comment. HSM to receive results of Leachate Characterization and Kinetic Leach tests.	
9	8.6	Waste Rock Characterization Program	In order to verify predictions in the environmental assessment regarding leachate quality, prior to construction OPG shall submit to the CNSC a waste rock characterization program for contaminants of concern other than those linked to acid generating potential (including, but not limited to metals and metalloids released under alkaline conditions, total dissolved solids and hydrocarbons). The OPG waste rock characterization program shall be based on sampling full-strength leachates and be valid for the duration of construction.	HSM to Receive Results of Waste Rock Characterization Sampling Program	
10	8.7	Effects on Aquatic Life from Waste Rock Pile	In order to verify the predictions in the environmental assessment that there will be no significant adverse effects to aquatic life from the waste rock pile runoff, OPG shall, to the satisfaction of the CNSC, develop a waste rock follow-up program. The follow-up program shall occur through all pre-closure phases of the project and shall address the quantity and quality of leachate and surface runoff directed to the stormwater management system, and shall include sampling of full strength leachates.	HSM to be Notified and Engaged about Effects on Aquatic Life from Waste Rock Pile Runoff	
11	8.8	Place Liner Under Waste Rock Management Areas	In order to avoid significant adverse effects to near-surface groundwater, OPG shall place a liner, acceptable to CNSC, under the waste rock management areas to direct leachate to a treatment facility or the stormwater management pond. The liner shall be placed during site preparation and construction, and be developed in consultation with Environment Canada.	HSM to be Notified and Engaged about Placement of Liner Under Waste Rock Management Areas	
12	8.9	Shall Not Dispose of Waste Rock Outside Boundaries of Stormwater Management Pond Collection System	In order to avoid significant adverse environmental effects to near-surface groundwater, OPG shall not dispose of waste rock outside the boundaries of the stormwater management pond collection system, during any phase of the project, without the permission of the CNSC.	HSM to be Notified If and When Waste Rock is Disposed Outside of Boundaries of Stormwater Management Pond Collection System	

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	A	B	C	D	E
13	8.1o	Verify Hydrological and Water Quality Models over Life of the Project	In order to verify the predictions in the environmental assessment regarding the effectiveness of the design of the stormwater management system, OPG shall calibrate and verify hydrological and water quality models over the life of the project with new information as it becomes available, including but not limited to, leachate geochemistry and flow rates. The models should be calibrated and verified prior to site preparation, at the end of construction, and periodically during operations, to the satisfaction of the CNSC.	HSM to receive the revised model results and be provided with an opportunity to review and comment.	
14	8.11	Place Liner Under Stormwater Management Pond	In order to avoid significant adverse effects to surficial and shallow bedrock groundwater, OPG shall place a liner under the stormwater management pond. The liner shall be placed during site preparation and construction. The specifications of the liner should be developed in consultation with Environment Canada.	HSM to be Notified and Engaged about Placement of Liner Under Stormwater Management Pond	
15	8.12	Treatment of Stormwater Management Pond Releases	In order to avoid significant adverse effects to surface water quality, OPG shall, prior to construction, submit to the CNSC a plan for treatment of all water destined for discharge from the stormwater management pond. OPG shall treat stormwater management pond releases, to the satisfaction of the CNSC, such that they comply with section 36 of the Fisheries Act throughout construction, operations and decommissioning.	HSM to Receive Plan for Treatment of All Water Destined for Discharge from Stormwater Management Pond	
16	8.13	Size of Storm Water Management System	In order to prevent significant adverse environmental effects due to over-topping of the stormwater management system, OPG shall review and, if necessary, revise the design of the stormwater management system, to the satisfaction of the CNSC, based upon an assessment of the likelihood of significant changes in the return period and magnitude of major storm events.	HSM to receive results of the review of the Storm Water Management System and be engaged in design revisions if required and be provided with an opportunity to review and comment.	
17	8.14	Contingency Plan for Uncontrolled Overflow before Stormwater Management System is Functional	In order to prevent significant adverse effects to surface water, OPG shall, to the satisfaction of the CNSC, prepare a contingency plan to mitigate effects of severe storm-related uncontrolled overland flow to Stream C, Baie de Doré, and MacPherson Bay during the period of site preparation before the stormwater management system is fully functional.	HSM to Receive Contingency Plan to Mitigate Effects of Storm-related Overland Flow to Stream C, Baie de Dore, and MacPherson Bay	
18	8.15	Toxicity Tests on Contents of Stormwater Management Pond	In order to confirm the predictions in the environmental assessment and ensure compliance with the Fisheries Act, OPG shall, to the satisfaction of the CNSC and in consultation with Environment Canada, monitor concentrations of relevant contaminants of concern and conduct acute and chronic toxicity tests on the contents of the stormwater management pond prior to discharge.	HSM to Receive Results of Toxicity Tests on Contents of Stormwater Management Pond	
19	8.16	Monitor Parameters in Stormwater Management Pond Point of Discharge Quarterly	In order to confirm the predictions in the environmental assessment, and to ensure compliance with the Fisheries Act, OPG shall implement a follow-up program, to the satisfaction of the CNSC, to monitor a broad spectrum of parameters (e.g., other metals, phosphate, total petroleum hydrocarbons) at the point of discharge of the storm water management pond quarterly, during site preparation and construction, and later during operations.	HSM to Receive Results of Monitoring Parameters at Point of Discharge of Stormwater Management Pond	
20	8.17	Effluent Dispersion Study in MacPherson Bay	In order to verify predictions in the environmental assessment and the effectiveness of the mitigation of water quality by the stormwater management system, and as support for the design of the follow-up monitoring program in MacPherson Bay, OPG shall, in consultation with Environment Canada and to the satisfaction of the CNSC, conduct an effluent dispersion study in MacPherson Bay after commissioning of the stormwater management pond.	HSM to Receive Results of Effluent Dispersion Study in Macpherson Bay	
21	8.18	Monitoring in MacPherson Bay for Water Quality	In order to verify predictions in the environmental assessment and the effectiveness of the mitigation of water quality by the stormwater management system, OPG shall, in consultation with Environment Canada and to the satisfaction of the CNSC, conduct follow-up monitoring in MacPherson Bay during site preparation and construction, and later during operations. The follow-up monitoring program shall include water quality, sediment quality, benthic invertebrate community indicators, and caged bivalve studies at sampling locations and frequencies determined in consultation with Environment Canada and to the satisfaction of the CNSC. OPG shall ensure that there are adequate baseline data for all follow-up monitoring indicators prior to site preparation.	HSM to be Notified and Engaged about Follow-up Monitoring for Water Quality in MacPherson Bay	
22	8.19	Monitoring Flow Reduction in North Railway Ditch and Stream C	In order to verify predictions in the environmental assessment, OPG shall develop, to the satisfaction of the CNSC, a follow-up program for flow reduction rates in the North Railway Ditch and Stream C, during site preparation and construction. If monitoring results indicate differences from predictions, OPG shall, to the satisfaction of the CNSC, determine whether mitigation measures are required to ensure there are no significant adverse effects on surface water quantity.	HSM to be Notified and Engaged about Follow-up Monitoring Flow Reduction in North Railway Ditch and Stream C	
23	8.2o	Plans to Increase Ditch Drainage Capacity	In order to avoid significant adverse effects to nearshore habitat in MacPherson Bay, OPG shall submit, prior to construction and to the satisfaction of the CNSC, a management plan that provides a detailed description of the options available to increase the capacity of the drainage ditch at Interconnecting Road in the event the flow exceeds the capacity of the ditch. The plan shall identify the relative potential effects of each of the options on the ecology of MacPherson Bay, and consider the relative effects when selecting and implementing the preferred option.	HSM to be Notified and Engaged about Options to Increase Ditch Drainage Capacity and be provided with an opportunity to review and comment.	
24	8.21	Monthly Monitoring of Water Levels in Northeast Marsh	In order to confirm predictions in the environmental assessment regarding effects on wetland water levels, OPG shall conduct monthly monitoring of water levels in the northeast marsh, beginning prior to site preparation and construction in order to establish a baseline. A follow-up program shall then be established, in consultation with Environment Canada and to the satisfaction of the CNSC.	HSM to Receive Results of Monthly Monitoring of Water Levels in Northeast Marsh	

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25	8.22	Sediment Quality Follow-up Program MacPherson Bay	In order to confirm the predictions in the environmental assessment, OPG shall conduct a sediment quality follow-up program in MacPherson Bay during construction and operations. Prior to construction, OPG shall collect additional baseline sediment quality data at the ditch at Interconnecting Road and MacPherson Bay. All sampling shall be conducted to the satisfaction of the CNSC.	HSM to Receive Results of Sediment Quality Sampling in MacPherson Bay	
26	8.23	Zone of Influence from Dewatering During Excavation and Construction	Prior to site preparation and construction, OPG shall use information from existing and planned groundwater monitoring wells for verification of the environmental assessment predictions regarding the zone of influence from dewatering during excavation and construction. The verified predictions regarding the zone of influence shall be used for the final design of shaft excavation procedures and infrastructure, including mitigation of groundwater inflow from surficial and shallow bedrock groundwater zones.	HSM to Receive Information from Groundwater Monitoring Wells and Analysis about Zone of Influence from Dewatering	
27	8.24	Groundwater Quality and Inflow Rates into the Shafts and Repository	During construction, in order to confirm predictions in the environmental assessment, OPG shall implement a follow-up program for groundwater quality and groundwater inflow rates into the shafts and repository, to the satisfaction of the CNSC. If groundwater inflows exceed predicted values or if the zone of influence is larger than expected, OPG shall implement mitigation measures to either reduce groundwater inflow or the zone of influence. If groundwater loadings and/or concentrations of contaminants of concern exceed environmental assessment predictions, OPG shall implement mitigation measures to avoid adverse effects to surface water quality, to the satisfaction of the CNSC.	HSM to be Notified and Engaged about Mitigation Measures if Groundwater Zone of Influence Exceeds Predictions in Environmental Assessment Report and/or Contaminants of Concern Exceed Predictions	
28	8.25	Detect and Monitor the Tritium Plume	In order to verify the predictions in the environmental assessment, OPG shall, prior to shaft sinking, enhance its capability to detect and monitor the movement of the tritium plume originating from the WWMF by adding an adequate number of monitoring wells up-gradient of the DGR shafts, to the satisfaction of the CNSC.	HSM to Receive Information about Location of Monitoring Wells for Tritium Plume	
29	8.26	Updated Modelling of the Tritium Plume Migration	In order to verify the predictions in the environmental assessment, prior to shaft sinking, OPG shall conduct a comprehensive assessment of the migration of the tritium plume originating from the WWMF site, to the satisfaction of the CNSC. The assessment shall include updated modeling of the tritium plume migration. If groundwater modeling or monitoring indicates that the tritium plume may reach the shaft before the shaft collars are installed, OPG shall prepare a contingency plan, to the satisfaction of the CNSC.	HSM to Receive Information about Tritium Plume Migration, and if Necessary, any Contingency Plan	
30	8.27	Monitor the Presence of Cattails and other Aquatic Plants Within the Stormwater Drainage System	In order to confirm the absence of significant adverse effects on plants and plant communities, OPG shall monitor the presence of cattails and other aquatic plants important as habitat within the stormwater drainage system, including the stormwater management pond. Baseline conditions should be established prior to habitat disturbance, and follow-up monitoring should take place after the disturbance of habitat during site preparation, construction and operations phases. This monitoring program should be conducted to the satisfaction of the CNSC and be included in the OPG environmental management system for the project. OPG shall address any significant adverse change in these plant communities that, in turn, would have the potential to affect significant species, such as amphibians and reptiles, in accordance with the Species at Risk Act.	HSM to be Notified and Engaged about Monitoring Program for Cattails and Aquatic Plants within Stormwater Drainage System	
31	8.28	Monitor the Naturalization of Disturbed Areas for Adverse Effects on Plants and Plant Communities	In order to confirm the absence of significant adverse effects on plants and plant communities as predicted in the environmental assessment, OPG shall implement a follow-up program to monitor the naturalization of disturbed areas, during construction and operations, to the satisfaction of the CNSC. If monitoring indicates the presence of invasive plant species and noxious weeds, OPG shall implement appropriate mitigation measures.	HSM to be Notified and Engaged about Naturalization of Disturbed Areas for Plants and Plant Communities	
32	8.29	Monitor Changes in Air Quality for Effects on Plants	In order to verify the prediction in the environmental assessment that there will be no significant adverse effects on plants due to changes in air quality, OPG shall monitor indicators of effects of changes in air quality on plants, both on the Project Area and in the Site Study Area. This monitoring shall occur during site preparation and construction and be conducted to the satisfaction of the CNSC.	HSM to Receive Information about Adverse Effects on Plants Due to Changes in Air Quality	
33	8.30	Revegetation Plan for Waste Rock Pile	In order to enhance the potential of the Project Area as future habitat, OPG shall, prior to decommissioning, submit a detailed revegetation plan for the waste rock pile to the CNSC. OPG should consult with Environment Canada when developing the plan.	HSM to be Notified and Engaged about Revegetation Plan for Waste Rock Pile, and receive associated reports for review and comment. The naturalization of the waste rock pile should be included in the Monitoring Program for Naturalization of Disturbed Areas for Plants and Plant Communities.	
34	8.31	Follow-up Program to Confirm Effects on Aquatic and Semi-aquatic Species - Plants and Animals	In order to confirm predictions in the environmental assessment regarding effects on aquatic and semi-aquatic species, prior to construction OPG shall submit a follow-up program to the satisfaction of the CNSC. The program shall contain mitigation measures to be taken, should concentrations of total dissolved solids in the storm water management system be observed at levels with the potential to affect sensitive plant or animal species. The plan shall include provisions for the establishment of a self-sustaining plant community that will provide habitat for amphibians, birds, invertebrates and small-bodied fish.	HSM to be Notified and Engaged in Follow-up Program and Plan Regarding Effects on Aquatic and Semi-aquatic Species, Plants and Animals	



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35	8.32	Follow-up program to Confirm Effects on Migratory Birds and Habitat	In order to confirm the predictions in the environmental assessment regarding effects to migratory birds and migratory bird habitat, OPG shall develop and implement a follow-up program, prior to site preparation and to the satisfaction of the CNSC. The program shall include management measures to effectively avoid or minimize the risk of detrimental effects to migratory birds, their nests and eggs, if adverse effects are observed. The plan shall include the provision that if nests are found in open areas, these nests be flagged, marked and buffers placed around them so that no work within the buffer areas occurs until the nesting cycle is complete.	HSM to be Notified and Engaged in Follow-up Program and Plan Regarding Effects on Migratory Birds and Habitat	
36	8.33	Measures to Mitigate Effects of Culvert Installation at North and South Railway Ditches	In order to avoid significant adverse effects to fish and fish habitat, OPG shall, during site preparation and construction, implement measures to mitigate the effects of culvert installation at the North and South Railway Ditches. Measures shall include: embedding culverts below the bed of the ditch, isolating and dewatering the culvert site during construction, revegetating the banks upon completion of construction, and deploying sediment and erosion control measures during construction. In-water works shall not occur between July 1 and September 30.	HSM to be Notified and Engaged about Mitigation Measures for Culvert Installation at North and South Railway Ditches	
37	8.34	Follow-up Program to Confirm Effects on Aquatic Life in Stormwater Management System and Ditch at Interconnecting Road	In order to confirm the predictions in the environmental assessment regarding effects to fish and fish habitat, OPG shall develop and implement, prior to site preparation and to the satisfaction of the CNSC, a follow-up program for aquatic life in the stormwater management system and the ditch at Interconnecting Road. The program shall include the collection of supporting water quality and sediment quality data to be used to conduct a risk assessment for fish, fish habitat and aquatic birds.	HSM to be Notified and Engaged in Follow-up Program Regarding Effects on Aquatic Life in Stormwater Management System and Ditch at Interconnecting Road	
38	8.35	Confirm the Absence of Significant Plant Species in the Project Area	In order to confirm the prediction in the environmental assessment that there would be no loss of significant plant species, OPG shall confirm the absence of significant plant species in the Project Area prior to site preparation. If significant species are located, OPG shall, in conjunction with appropriate federal and provincial agencies and the CNSC, take action to avoid or mitigate the potential loss.	HSM to Receive Information about Significant Plant Species in Project Area	
39	8.36	Maintain Appropriate Water Levels in Northeast Marsh to Avoid Adverse Effects on Snapping Turtle Habitat	In order to avoid significant adverse effects to snapping turtle habitat, OPG shall maintain appropriate water levels in the northeast marsh, during and after the rerouting of the drainage ditch, to the satisfaction of CNSC and in consultation with Environment Canada.	HSM to Receive Results of Monthly Monitoring of Water Levels in Northeast Marsh, and Analysis of Effects on Snapping Turtles	
40	8.37	Delay Infilling of "Wetland 3" Until Latter Years of Site Preparation and Construction	In order to avoid significant adverse effects to turtle species at risk, OPG should delay the infilling of "Wetland 3" until the latter years of the site preparation and construction phase.	HSM to be Notified of Infilling of Wetland 3	
41	8.38	Snapping Turtle Surveys in Wetland 3	In order to confirm the predictions in the environmental assessment regarding snapping turtles, OPG shall conduct turtle surveys of Wetland 3 throughout the years prior to its infilling. A qualified biologist experienced in turtle surveys should conduct a minimum of three surveys per year on sunny days, beginning as soon as the ice cover has melted. The third survey should occur no later than mid-June. OPG shall relocate turtles to the northeast marsh.	HSM to be Notified and Engaged in Snapping Turtle Surveys in Wetland 3	
42	8.39	Re-locate Snapping Turtles from Wetland 3	In order to avoid significant adverse effects on snapping turtles, OPG shall, to the satisfaction of CNSC, implement a management plan to relocate snapping turtles from "Wetland 3" to the northeast marsh prior to the infilling of "Wetland 3". The plan should be reviewed by Environment Canada and the Ontario Ministry of Natural Resources.	HSM to be Notified and Engaged in Snapping Turtle Re-location from Wetland 3 to Northeast Marsh	
43	8.40	Management Plan for Eastern Ribbonsnake, Milksnake Habitat	In order to avoid significant adverse effects on eastern ribbonsnake, eastern milksnake and their habitats, OPG shall develop and implement a management plan, to the satisfaction of the CNSC, to ensure site preparation and construction activities to not disrupt individuals of these species, snake eggs, gestation sites, or hibernacula. OPG should seek input and advice from Environment Canada and the Ontario Ministry of Natural Resources in developing the plan.	HSM to be Notified and Receive Information about Eastern Ribbonsnake, Eastern Milksnake and their Habitats Management Plan, and receive associated reports for review and comment.	
44	8.41	Prevent Turtles and Snakes from Entering DGR Site and Wetland 3	In order to avoid significant adverse effects on turtles and snakes, OPG shall, to the satisfaction of CNSC, ensure that mitigation measures are in place to prevent turtles and snakes from entering the DGR Site, and "Wetland 3" in particular, prior to and during the site preparation and construction phase. Measures should include the installation of exclusion fencing along the southern and eastern edges of the DGR site. Environment Canada should be consulted regarding the specifications of the fence.	HSM to be Notified and Receive Information about Mitigation Measures to Prevent Turtles and Snakes from Entering the DGR Site	
45	8.42	Follow-up Program Regarding Radiation Effects on Terrestrial and Aquatic Species in the Project Area and Local Study Area	In order to confirm the predictions in the environmental assessment regarding radiation effects on terrestrial and aquatic species, OPG shall conduct a follow-up program, to the satisfaction of the CNSC, of radiation levels in air, water, soil, sediment, terrestrial and aquatic biota in the Project Area and Local Study Area.	HSM to Receive Information from Follow-up Program about Radiation Effects on Terrestrial and Aquatic Species	
46	8.43	Develop and Up-date Climate Change Strategy	In order to avoid significant adverse effects on the project due to climate change, OPG shall develop and regularly update a climate change strategy, to the satisfaction of the CNSC. The strategy should incorporate up-to-date climate change models and adaptive management, and be included in the environmental management system for the DGR.	HSM to Receive Information about Climate Change Strategy	

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47	9.4	Follow-up Program for Effects of Acrolein Exposure to Human Health	In order to confirm the environmental assessment prediction of no significant adverse effects to human health from acrolein exposure, OPG shall conduct a follow-up program for acrolein during site preparation, construction and operations, to the satisfaction of the CNSC.	HSM to Receive Information from Follow-up Program about Acrolein Exposure and Effects on Human Health	
48	9.5	Noise and Vibration Monitoring	In order to confirm EIS predictions and the effectiveness of mitigation, the noise and vibration monitoring committed to by OPG shall be conducted to the satisfaction of the CNSC and shall be included in the environmental management system for the project. Monitoring shall take place throughout the pre-closure phases of the project. OPG should identify additional monitoring locations in consultation with Health Canada, the Ontario Ministry of the Environment and Climate Change, Aboriginal communities and residents in the Local Study Area. OPG shall develop explicit action levels for noise mitigation, acceptable to the CNSC, taking into consideration input from Aboriginal communities, and permanent and seasonal residents in the Local Study Area.	HSM to be Notified and Engaged in Monitoring of Noise and Vibration Mitigation	
49	9.6	Collection of Soil Samples Within the Site Study and Local Study Areas	In order to confirm the environmental assessment prediction of no significant adverse effects from exposure to radiation for members of the public, including members of Aboriginal groups, OPG shall add the collection of soil samples within the Site Study and Local Study Area to the Radiological Environmental Monitoring Program for the DGR during the Construction Phase.	HSM to Receive Information and Analysis of Soil Sampling for Effects from Exposure to Radiation	
50	10.2	Spill Response Plan	In order to avoid significant adverse environmental effects, including effects to fish or fish habitat, due to malfunctions, accidents or malevolent acts, OPG shall develop and implement a detailed spill response plan for all phases of the project. The spill plan must be acceptable to the CNSC and include an assessment of containment methods, locations and strategies to demonstrate that spill mitigation will be deployed in time to prevent downstream effects.	HSM to Receive Information about Spill Response Plan for All Phases of the Project	
51	11.1	Follow-up Program for Dust and Noise	In order to confirm the environmental assessment prediction of no significant adverse socio economic effects to valued social and economic components due to dust and noise, OPG shall develop a follow-up program, acceptable to the CNSC, prior to site preparation and construction.	HSM to be Notified and Engaged in Follow-up Monitoring of Dust and Noise Mitigation	
52	13.A	Restrict Access to Surface and Sub-surface of DGR Site	The CNSC, in consultation with other government agencies including Natural Resources Canada and the Ontario Ministry of Natural Resources, should evaluate institutional control options to restrict access to the surface and sub-surface of the DGR site. The evaluation should be completed in time to support the decommissioning licensing phase.	HSM to be Notified and Engaged about Control Options to Restrict Access to Surface and Sub-surface of DGR Site	
53	14.1	Follow-up Program for Effects on Lake Whitefish	In order to confirm environmental assessment predictions regarding effects on lake whitefish, OPG shall develop a follow-up program which includes provisions to incorporate input from interested stakeholders, including the Saugeen Ojibway Nation fisheries specialists. The follow-up program should reflect the increasing understanding of the role of MacPherson Bay in the ecology of the area, and should include mitigation measures that may be implemented to protect lake whitefish and lake whitefish nursery areas, to the satisfaction of the CNSC.	HSM to be Notified and Engaged in Follow-up Program Regarding Effects on Lake Whitefish	
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