

--	--

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON MONDAY, JANUARY 21, 2013
FROM:	JOHN BRAAM, MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER
SUBJECT:	ONTARIO POWER GENERATION DEEP GEOLOGICAL REPOSITORY

RECOMMENDATION

That, on the recommendation of the Managing Director, Environmental & Engineering Services & City Engineer, this report with regard to the proposed Ontario Power Generation Deep Geological Repository at the Bruce Power site located near Tiverton, Ontario **BE RECEIVED** for information.

BACKGROUND

The Ontario Power Generation (OPG), a corporation owned by the Province of Ontario, is responsible for the ownership and operation of several electrical generation facilities in Ontario. These include the ownership of two nuclear power stations located near Tiverton, Ontario which are leased to Bruce Power LP. OPG, along with the Nuclear Waste Management Organization utilized as technical advisors, has proposed the design and construction of a Deep Geological Repository (DGR) for the long-term storage of low- and intermediate-level waste material at the Bruce Power site. Low level waste is typically comprised of minimally radioactive materials such as mop heads, rags, floor sweepings, and other items which may have become contaminated during routine housekeeping and maintenance at the facilities. Intermediate level waste is typically comprised of such things as resins and filters used to keep the reactor water systems clean.

The proposed DGR would be located approximately 680 meters below ground in low permeability limestone, immediately below a 200 meter thick layer of low permeability shale. This geological layer is considered very stable and not subject to seismic activity where large magnitude earthquakes are unlikely.

If the project is approved following the conclusion of the Environmental Assessment process and public consultation, construction of the DGR would take approximately five to seven years to complete. An operating licence would subsequently be required following the completion of the construction of the DGR, which is not anticipated until 2019.

The proposed Bruce Power DGR is located more than 100 kilometers northeast of the drinking water intake for the Lake Huron Primary Water Supply System, which supplies water to the City of London.

DISCUSSION

Source Water Protection

The Saugeen Grey Sauble Source Protection Region, responsible for the development of the Source Protection Plans in the area of the proposed DGR, previously toured the Bruce Power site in March 2009 as part of the technical assessment process for the development of the Source Protection Plans. At that time, the Source Protection Region was made aware of the proposal for the DGR at that location for the low/intermediate level waste at the site, however there was no concern expressed with regard to the proposal.

--	--

In the development of the Source Protection Plan, the Saugeen Grey Sauble Source Protection Region is currently concerned about low levels of tritium in Lake Huron originating from the Bruce Power site, which is understood to be related to secondary cooling water systems for the nuclear power station.

Lake Huron Water Supply System – Intake Protection Zone (IPZ)

The storage of nuclear waste is not on the prescribed list of threats identified by the Ministry of the Environment as part of the *Clean Water Act* and development of Source Protection Plans, and there has been no discussion by the various Source Protection Committees in the region to request that the Ministry add it to the list.

If such a request was made to the Ministry for consideration in future Source Protection Plans and added to the list of prescribed threats, then the DGR could be assessed as part of future IPZ-3 work undertaken for the Lake Huron Water Supply System. The more critical IPZ-1 and IPZ-2 for the drinking water intake are greater than 100 kilometres away from the proposed DGR site.

Concern about long-term leakage into the groundwater are best referred to the Ministry of the Environment as part of the assessment and approval process for the DGR, and implications to the Clean Water Act prescribed threats assessment process. This issue has been raised with local Ministry of Environment staff, who have indicated that the Ministry's technical advisory group are reviewing this application and would include comments with regard to the long-term impacts to groundwater.

Reference

Additional information on the proposed DGR and the status of the application is available from Ontario Power Generation at www.opg.com/power/nuclear/waste/dgr/

The status of the application for the OPG Deep Geological Repository can also be found at the Canadian Nuclear Safety Commission website at http://nuclearsafety.gc.ca/eng/readingroom/newbuilds/opg_dgr/

Acknowledgements

This report was prepared by Andrew Henry, P.Eng., Division Manager Regional Water Supply

SUBMITTED BY:	RECOMMENDED BY:
JOHN LUCAS, P.ENG. DIRECTOR, WATER AND WASTEWATER	JOHN BRAAM, P.ENG. MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER