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Written Submission from

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In the Matter of

Ontario Power Generation Inc.

Proposed Environmental Impact Statement for OPG's Deep Geological Repository (DGR) Project for Low and Intermediate Level Waste

Joint Review Panel

September 16 to October 12, 2013

Mémoire de

Jacqueline Wakefield

À l'égard de

Ontario Power Generation Inc.

Étude proposée pour l'énoncé des incidences environnementales pour l'Installation de stockage de déchets radioactifs à faible et moyenne activité dans des couches géologiques profondes

Commission d'examen conjoint

16 septembre au 12 octobre 2013

Canada

DGR Joint Review Panel Hearing Written-only Submission

Summary

The subject(s) I wish to address are:

- Project justification
- Long-term safety of the DGR and Follow-up program
- Capacity of renewable resources
- Other: Opportunity costs

As many others have written or presented on many of these issues during this review process, I shall keep my written comments as concise as possible. I wish only to offer some perspectives and to express some relevant concerns.

Project justification

It is clear that burying radioactive waste produced by nuclear power facilities has become accepted by experts in many countries around the world as the safest current option. A relatively small number of large underground sites have been functioning for some decades (as early as 1980s), gathering data to guide planning and decision-making. Although Canada generates a significant amount of radioactive waste, it does not have such a facility.

My first comment relates to the role and mandate of such a facility. Given the continuing technological issues and questions surrounding numerous aspects of long-term safety, the creation of ***any*** repository that is seen primarily/only as a disposal site, and not a facility with a requirement for intensive long-term monitoring and research, seems premature and short-sighted. Problems with repositories such as Asse II and Morsleben in Germany and critiques of the newer technologies in Scandinavia (Finland and Sweden) offer examples about why we need to know more. With regard to the proposed DGR below the Bruce Nuclear site, there are no precedents anywhere in the world for permanent burial of radioactive waste in limestone. For these reasons, justification for such a project would seem to necessitate a corresponding and significant data collection research component -- now and for many decades into the future.

The second comment relates to the proposed siting of such a repository. Many experts and groups have expressed concerns about the fact that this DGR would be less than a mile inland from the shore of Lake Huron and about 450 yards below the lake level (1.2 km per the diagram on the OPG website). Given that the Great Lakes are an irreplaceable resource vital to human and environmental health, as well as to the economic and agricultural well-being of the region in both Canada and the USA, the risk of potential damage from any leak of radioactivity would seem to outweigh many of the benefits of burying this waste.
In addition, this location violates the Michigan Public Act 204 of ***1987***, the Low-level Radioactive Waste Authority Act, which excludes any nuclear waste site "located within 10 miles of Lake Michigan, Lake Superior, *Lake Huron*, Lake Erie, St. Mary's River, Detroit River, St. Clair River or Lake St. Clair." As this is an important precedent-setting proposal, with international implications (site is about 100 miles from

main drinking water intakes for southeast Michigan, the fact that a law excluding such a site was in place well in advance of this proposal should be acknowledged and respected.
I strongly agree with others that the ecology of Lake Huron (and the waters "downstream" from it) should not be put at risk by storing radioactive waste this close to the lake bed and shoreline.

Long-term safety of the DGR and Follow-up program

These two subjects are being discussed together, as I see considerable overlap between them.

I have reviewed the DGR-EA-Follow-up-Monitoring-Program available at
http://www.nwmo.ca/uploads/DGR%20PDF/EIS/DGR-EA-Follow-up-Monitoring-Program.pdf
With special attention to Table 3b: EA Follow-up Monitoring Program – Operations Phase, Table 4b. Environmental Management Plan Monitoring Program – Operations, and Table 5b. Radiological Regulatory Requirements Monitoring Program – Operations. The program focusses primarily on issues that are related to the site preparation, construction, and operations phases of the project. "A program evaluation of the core components of the EA follow-up monitoring program will be conducted once every five years, or once during each project phase, as a minimum to ensure that the program remains effective and relevant." Many of the monitoring activities rely on visual inspection, modelling or undefined monitoring – with frequencies (quarterly or annually) for unspecified duration or 1-2 years (very short-term). I did not see any activity identified to monitor the waters of Lake Huron in the area – only groundwater and stormwater. Is this not a significant oversight? Or is this addressed somewhere else that I did not see?

This brings me to raise questions about reversibility, as I see no mention of this in the proposal.
In principle, I feel strongly that a project of such importance and magnitude should include the ability to *reverse* decisions taken – throughout the progressive implementation of the repository project. It should be possible to build in points at which a previous decision can be changed and a corrective or more prudent action taken. Development projects in other areas use this approach to increase adaptability as new technologies arise.<OECD 2013. NEA No. 6988> Although the long-term safety for a repository must NOT rely on post-operational oversight by an agency or institution, specific provisions for monitoring and "mid-course" correction should make it possible to fix or improve something without unnecessary delays or engineering hurdles.

Capacity of renewable resources
The growth of wind power and other renewable sources (biogas and now solar) in Ontario has been dramatic and documented in a variety of publications, including IESO statistics. What is the capacity? There are divergent opinions and projections. However, it appears that we are far short of what is possible. As an Ontario resident attempting to reduce personal electricity consumption with conservation efforts and small scale personal wind-solar system, there is the potential to do much more. New technologies (eg LED lighting) and combined heat-electricity systems, plus conservation approaches signal the potential for major shifts in electricity usage and generation, despite the failure of government to promote and support these initiatives.

Other: Opportunity costs

The cost of building and maintaining the proposed DGR will have implications beyond the facility itself. The money spent in this project already is considerable, and if the project proceeds to construction, it will of necessity reduce both funding and energy/enthusiasm for finding other solutions. If the DGR is approved, what incentives will exist to encourage the government or the nuclear industry to support research and the development of technologies to reduce or handle these wastes in more sustainable and safe ways? As a citizen on a local waste diversion advisory committee for our area, we have been promoting a “Zero Waste” philosophy and supporting the concept of extended producer responsibility. Why do these same principles and essentials not apply as well to the nuclear industry? While it will not eliminate the need for a repository, nuclear “reprocessing” has the potential to reduce the volume and the long term radiation hazards. Surely this would be a much preferred and more sustainable solution!