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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

Hugh Morrison

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

Submitted by: Hugh Morrison

Content

1.0Project Justification.

The existing Western Waste Management Facility was justified, built, and operated, as an Interim waste site for the storage of Low and Intermediate Waste. At a later date the facility was extended to store Dry Storage Containers for Used Fuel. The facility has an excellent environmental and Safety record for containing these wastes, this has been achieved through careful facility design and strong operational performance.

On a regular basis the WWMF has had it's licenses renewed and at licence renewal hearings OPG has been required to provide a long term plan for the management of these wastes. There has always been a clear understanding that a permanent disposal facility was going to be required at some date.

The design of the site is not intended for the very long term management of these wastes for example (1)Low level Waste is stored in industrial steel boxes which have very finite life expectation, in Low Level Storage Buildings that require regular maintenance such as roof repairs ,door maintenance, fire systems checks and the like (2)Intermediate Waste is stored in a number of different types of containers which are placed into the ground. These containers over a long time frame are likely to deteriorate .A program of waste repackaging has already been required for Intermediate waste containers at site (3)Decommissioned Heat Exchangers are processed to reduce corrosion and are placed in the ground(4) Pickering Pressure Tubes were placed in concrete containers and are stored above the ground close to lake Ontario.

Over the years Ontario Power Generation(OPG) planned for a waste disposal site for low level waste and for intermediate waste .Funds were set up and money collected so that at an appropriate time disposal facilities could be built.

When the far sighted Municipality of Kincardine approached OPG to work TOGETHER to resolve the issue of what to do with these wastes in the long term a very logical solution was developed by the parties involved.

*Kincardine council got a strong voice in determining the future facilities. They selected a DGR.

*The facility could be built on available industrial land on the Bruce Power nuclear site

*The facility could be placed in a seismically stable area with homogeneous rock formations

*Most of the waste would require no further transportation since it has already been shipped to the WWMF

*There is a body of experienced nuclear workers in the area

*Community councils supported the initiative

2.0 Public participation and Aboriginal engagement

There has always been strong community links between local councils and the organization managing nuclear waste within OPG. Regular meetings have been held between local council representatives and OPG management to discus site performance, site expansion and licensing issues. The local councils have participated in numerous CNSC hearing to support nuclear waste initiatives.

First Nation councils at both Nawash and Saugeen received regular briefings about the proposed long term plan and the existing operations. Representatives from both reserves visited the existing site to improve their understanding of waste site activities. At the same time they underscored the need for true consultation and a need for OPG to understand their special position as the original people of this area.

Representatives from Kincardine, along with OPG staff visited sites in the USA ,France, Switzerland ,and Sweden to evaluate different options and to talk to politicians from different communities hosting waste management facilities. As a result the Municipaliy of Kincardine elected to support a Deep Geologic Repository somewhat similar to the WIPP facility in the USA. This facility to be located at the Bruce site assuming the site geology was satisfactory.

There have been many different communication processes to ensure the local communities are aware of this initiative. Some examples are

*A household poll to assess support in Kincardine

*Open houses at regular intervals in local communities including Saugeen Shores, Kincardine , Walkerton ,and Owen Sound

*Open houses with the Chippewa of Saugeen First Nation, and the Chippewa of Nawash Unceeded First Nation

*Regular discussions with councils located close to the site as the project moved forward

*Regular discussions with the councils of Saugeen and Nawash

* Project fact sheets have provided regular updates

*Qualified staff with a mobile exhibit at local events in local communities like Kincardine, Saugeen Shores, Chesley, Walkerton etc. to update people on project progress

*Qualified staff with mobile exhibit at First Nation events like Pow Wows to update people on project progress

*Presentations to local NGO's and service clubs

*Some community members have had an opportunity to visit the site to look at the geological cores resulting from site characterization activities

This project has maintained a very strong communication component since it started. It is hard to imagine that any person resident for any time in this county could be unaware of the proposal or it's ramifications in the community.

3.0Long Term Safety Case

In the 1980's research scientists who worked on the long term management of radioactive waste theorised that the Michigan Basin was, an ideal location for a low and intermediate waste site. This was a very macro opinion with no detailed location or any programmed geological investigation. Since the 2000's it seems that geologists have studied the more specific location on the OPG held lands on the Bruce site and have determined that the geology is excellent for this purpose.
Page 115 of the Preliminary Safety Report states that "The sedimentary rocks beneath the Bruce Site are predictable, include multiple natural barriers to contamination transport and are located in a seismically quiet environment". Radioactivity when released will travel very slowly and will not affect the surface/drinking water in the area. At 680meters depth the facility will be 450 m below the lake bottom and even though some of the radionuclides have long half- lives the probability of there being any impact on humans or the environment will be well below the CNSC release limit.

It is my belief that

*The Physical, Chemical, and Radiological characteristics of the wastes are well known since the current WWMF has a mature Waste Acceptance Criteria. There are well developed predictive models that indicate the facility will meet the CNSC safety standard.

*About 80% of the wastes are Low Level Wastes. Much of this waste requires little shielding and is handled using conventional practices. The proposed DGR is vastly superior to many of the sites in operation for Low Level Waste in other countries

*The site geology has no value (no oil, precious metals etc.) so the probability of a future accidental intrusion is very low

* There is a cadre of international experts who have studied the OPG proposal and the vast majority believe the rock has low permeability values, and is homogeneous without significant cracks and fissures that would cause radioactivity to enter the lake or our drinking water

*The project has considered the possibility of gas generation in the post closure phase. Analysis indicates that significant fracture development will not occur.

I have no geological expertise however the very extensive Geologic investigation outlined in the Preliminary safety case along with the expert reviews that have taken place lead me to believe that this proposal is VASTLY more suitable for the long term management of radioactive waste than is the existing site.

4.0Exsisting Environment

The present Western Waste Management has operated for approximately 40 years using sound management practices. Almost All the Low and Intermediate level waste generated in Pickering, Darligton , and Bruce A&B has been shipped to the WWMF for interim storage. The transportation of the waste to the site has been achieved with few accidents and no releases to the environment. The packages used to carry the waste have been subjected to testing and regular maintenance.

The proposed location for the DGR is adjacent to the WWMF. This location was used as a lay down area for pipe spools during the construction of BHWP and BGSA. Since the proposed DGR site is so close to the WWMF it is important to review environmental monitoring activities that have taken place

*Radioactive emissions in surface water from the WWMF have always been substantially lower than the CNSC limits. Surface and sub- surface drainage are both captured and monitored. This provides useful baseline information for the DGR project

*Ground water is monitored by a set of wells located round the site. Levels of radioactivity in these wells has been acceptable for the life of the site. This provides useful baseline information for the DGR

*Air emissions from ventilation stacks and incinerator stacks are acceptable to the CNSC and MOE

*Numerous Environmental assessments have occurred as new facilities were constructed adjacent to the proposed DGR site .They have concluded that there are no significant adverse environmental reasons why Radioactive Waste management facilities should not be constructed in this general area

*The Environmental Impact Statement submitted by OPG for this project concluded that

The DGR is expected to contain the L&ILW and isolate them from human and non-human biota, including during the abandonment and long –term performance phase

No residual adverse effects were identified during the assessment of the effects of the environment on the DGR project and of the project on climate change

With the identified mitigation measures the implementation of the DGR project is not likely to result in any significant adverse impacts on the environment

*The proposed DGR site is part of the Bruce site and is therefore captured within the Bruce Nuclear Site radiological monitoring program which has concluded that dose to critical groups of the public over the years is less than 1% of the allowable dose. The DGR will have less impact on these results than would the ongoing operation of the WWMF.

*The proposed DGR will be located on industrial land owned by OPG on a nuclear site with no other commercial value.

5.0Malfunctions, accidents, and malevolent Acts.

A significant benefit for the DGR location is the proximity to the WWMF. A great deal of the waste has already been shipped to the DGR location and this certainly reduces the probability of transportation accidents from Pickering or Darlington .Moving the waste material across the site from the Bruce stations or from the WWMF is relatively straightforward with little risk.

*WWMF has been shipping waste to the WWMF for 40 years with approximately 5 accidents with no loss of radioactivity

*WWMF has been handling waste for almost 40 years with no significant issues. The Safety record of this facility is excellent. New skills will be required to work in a mining/underground environment but the basic principles of good risk management will be transferred from the WWMF to the DGR

*The DGR will be on the Bruce Power site so the full Bruce Power security organization is available to deal with any security issue .This is a very substantial well trained organization that would be very difficult to replicate on a small scale on a green field location.

*The DGR will be located on the Bruce Power site and traditionally Bruce Power have supplied emergency response for the WWMF. It is expected that this would be the future arrangement and that the DGR would take advantage of this service.

*At present the waste is on the surface in LLSB's, or in above ground quadricells, or in in-ground structures like IC 18's or tile holes. These facilities are much more vulnerable to malevolent acts than will be a facility 600m deep in the Michigan basin. Past threat assessments regarding the storage of radioactive waste on Bruce Site have resulted in the conclusion that there is low risk compared with other facilities and the major risk occurs when transporting the waste.

6.0 Summary

I am a strong supporter of the DGR project. OPG collected provision funds over many years so that a disposal facility could be built. At many hearings they indicated that the existing site was for interim storage. That resulted in facility designs with relatively short design lives .Already waste repackaging has taken place.

In general there are qualified people available to operate the site although new mining skills and underground operations safeguards will require to be developed

OPG management over the years have shown a real concern for the safety of the environment. Local communities, the MOE, and the CNSC have demonstrated capable regulation & oversight of the existing operation.

I have lived in Southampton since 1975. My children and grand-children live in Bruce and Grey Counties where they have experienced a fine quality of life. We should all work to ensure that this fine quality of life continues into the future by supporting high quality projects.

This area has viable hospitals, beautiful parks, excellent art and music programs, sport programs all supported by the presence of nuclear facilities. The operation of these facilities have not polluted our beaches but has permitted Ontario to close down polluting coal fired stations so that others can have a cleaner environment. The small price we pay for these operations is the resulting wastes. These should be managed in the best possible way……a DGR on the Bruce Power Site