



November 22, 2010

Ms. Louise Levert
Secretariat - Canadian Nuclear Safety Commission
280 Slater Street, P.O. Box 1046
Ottawa, Ontario K1P 5S9

Dear Ms. Levert:

Re: Application by Bruce Power for a licence to package and transport under special arrangement, 16 steam generators to Sweden

Supplementary Written Submission

We thank you for providing us with the opportunity to submit supplementary information in the above matter. In an email dated October 27th, we raised several concerns about the extension including the limited issues in the CNSC staff supplementary document, the exclusion of groups who did not make submissions prior to September 13th and the limited number of days to examine the CNSC staff's lengthy supplementary document. We received the email from Mr. Marc Leblanc that reaffirmed the conditions for submitting supplementary information. Despite the limitations, we appreciate the opportunity to provide a supplementary written submission.

We have outlined several concerns about the shipment in our original and amended submissions including: 1. the failure to meet established national and international regulations; 2. the precedent rendering the CNSC powerless to limit future shipments; 3. the option of a safer, approved alternative plan; 4. the risks of recycling radioactive material into scrap metal; 5. the lack of meaningful consultation with First Nation communities; 6. the lack of a meaningful, national dialogue on critical issues raised by this shipment and; 7. the need to uphold the "precautionary principle" recognized in international law.

In this supplementary submission, we request that Commissioners delay their decision in order to incorporate amendments to the Great Lakes Water Quality Act. We request a federal review of the 2006 Environmental Assessment including the proposed project of shipping the radioactive steam generators. Although CNSC staff examines the emergency plans and accident scenarios, we believe there are still gaps in the emergency plans and accident scenarios and request that CNSC staff fills in these gaps.

We believe that the Great Lakes are a public trust and a commons (a shared entity). The Canadian Nuclear Safety Commission's mandate is to protect the health, safety and security of Canadians as well as the environment. We believe that the shipments pose short-term and long-term risks that outweigh the benefits and do not serve the public interest. We urge the

Commissioners of the Canadian Nuclear Safety Commission to reject Bruce Power's application in order to protect the environment and the health and safety of Canadians.

Review of Great Lakes Water Quality Agreement

The Great Lakes Water Quality Agreement (GLWQA) is currently under review. Negotiations formally began January 2010. The review included a public consultation process in June and July 2010. Items under review include radionuclides particularly "updating the limits on radioactivity in drinking water in Annex 1...and management of nuclear wastes." Although the GLWQA is a non-binding agreement, it is a critical agreement that incorporates binational perspectives and expertise, and fosters cooperation between Canada and the US. We urge the CNSC to delay its decision in order to consider revisions and updates to the GLWQA.

Environmental Assessment

We believe Bruce Power's plan to ship 16 steam generators to Sweden is a project that requires an environmental assessment under the Canadian Environmental Assessment Act (CEAA). We request a federal review of this project along with the 2006 Environmental Assessment which appears to be incomplete.

Definition of a Project under the Canadian Environmental Assessment Act

The CNSC staff report (10-H19) states that "the packaging and transport of the steam generators is an activity that is not within the class of activities prescribed pursuant to the regulations made under paragraph 59(b) and does not meet the definition of a project in the Act." CNSC staff reaffirms this conclusion in their supplemental document (10-H19.D) stating that "an environmental assessment under the CEAA is not required because there is no project in relation to a physical work that would trigger such environmental assessment to be conducted under the CEAA."

Under the CEAA, a project is defined as:

- (a) in relation to a physical work, any proposed construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work, or
- (b) any proposed physical activity not relating to a physical work that is prescribed or is within a class of physical activities that is prescribed pursuant to regulations made under paragraph 59(b);

Based on the definition in (a), a project is defined very broadly, particularly the part that states that a project is "any...other undertaking in relation to that physical work." Based on this encompassing definition, the shipment of the radioactive steam generators could be defined as an "undertaking...of that physical work" (i.e. the Refurbishment for Life Extensions and Continued operations of the Bruce A Nuclear Generating Station). However, CNSC staff have concluded that this is not an "undertaking...in relation to that physical work" without providing any reasoning or rationale. We believe it is imperative that CNSC staff elaborate on how they arrived at the conclusion and request that CNSC staff provide in detail their reasoning for this conclusion.

2006 Environmental Assessment

Pursuant to Section 29 (1) of the CEAA, we call upon the Minister of the Environment to refer the 2006 Environmental Assessment to a review panel. The 2006 Environmental Assessment is incomplete because it does not cover the altered plans. As well a follow-up to determine the accuracy of the 2006 environmental assessment is due on December 31, 2010.

In the CNSC staff's supplemental document (10-H19.D), CNSC staff "determined that this proposal does not change the environmental assessment that was conducted of the Bruce A refurbishment project. That project considered the work required to bring the Bruce A Nuclear Generating Station back into operation, and the licensing action required for the return to service has been completed. The current application amounts to a different proposal entirely, related specifically to the steam generators; as such, it does not alter or call into question the completed refurbishment or the assessment that was conducted. The CEAA is a planning tool, and does not function to freeze in time every aspect of a large proposal. This application should be viewed on its own merits, which is how staff have treated it. "

However, Bruce Power themselves have stated that they have altered their refurbishment plans and have decided to recycle the steam generators. (See video "Our Plan" at <http://rightthingtodo.ca/video.php>)

The scope of the environmental assessment has also been altered. The scope of the project for the Refurbishment for Life Extensions and Continued Operations of the Bruce A Nuclear Generating Station is set out in Section 7.0 of Appendix 1 of the 2006 Screening Report. It states that the scope of the Bruce A project includes "transportation of refurbishment and other radioactive wastes on the Bruce Power site to their destination at the Western Waste Management Facility (WWMF) operated by Ontario Power Generation."

In Bruce Power's 2005 Presentation to the Joint Council of the Saugeen Ojibway Nations, Bruce Power stated that:

Bruce Power is committed to reducing, reusing and recycling wastes produced at the Bruce Power site to the extent possible. For example scrap metals which are proven not to be radioactive are recycled. However much of the waste, and particularly low and intermediate level waste containing radioactivity cannot be recycled for safety and environmental reasons. This waste is transferred to OPG's Western Waste Management Facility where it is processed to reduce its volume prior to be placed in storage.

In the 2006 Screening Report, Table 11.3 states that, "The EA for the project considers the production of the wastes and transfer of the wastes to the WWMF until 2043. OPG is currently undertaking a separate EA to expand the WWMF for interim storage of low and intermediate level wastes."

Based on these documents, it is clear that Bruce Power has altered their plans which were included in the environmental assessment. The destination of the radioactive waste is no longer the Western Waste Management Facility. Although 10% of the waste will return to Bruce Power, 90% of the waste will be recycled in Sweden. The destination for 90% of the waste will now be various parts of the world since the recycled scrap metal will be free released into the consumer market.

We believe that since the destination has been altered, an environmental assessment of the shipment and recycling of the steam generators is required. Since transportation of radioactive wastes to their destination was part of the scope of the 2006 Environmental Assessment, the transportation and recycling of the steam generators should also within the scope of the environmental assessment. Section 4(c) of the CEEA states that the purpose of the Act is "to ensure that projects that are to be carried out in Canada or on federal lands do not cause significant adverse environmental effects outside the jurisdictions in which the projects are carried out."

At the 2009 International Conference on Control and Management of Inadvertent Radioactive Material in Scrap Metal, experts stated that "The presence of inadvertent radioactive materials...can pose potentially severe health, environmental, and financial consequences for the industry and the public alike." For these reasons, the 2006 Environmental Assessment needs to be reviewed in order to determine what environmental effects recycling the radioactive steam generators will have on outside jurisdictions.

We do not believe that the CNSC should make a decision on this current application because the 2006 Environmental Assessment appears to be incomplete. The Canadian Environmental Assessment Agency website states:

A follow-up program to verify the accuracy of the environmental assessment and/or determine the effectiveness of any measures taken to mitigate the adverse environmental effects is considered appropriate for this project. The estimated start and end dates of the follow-up program are October 2, 2006 and December 31, 2010, respectively.

Although the 2006 environmental assessment is listed under completed assessments on the CNSC website, there is no completion date. We urge the CNSC to delay its decision until the follow-up program can "verify the accuracy of the environmental assessment." We believe that since Bruce Power has altered its plans of transporting radioactive wastes to the destination of the Western Waste Management Facility, the 2006 environmental assessment is no longer accurate.

Accident Scenarios and Radiation Levels of the Great Lakes

In Bruce Power's application (10-H19), Appendix E outlines the emergency response plans of 10 scenarios including fire, serious accidents, release of Irradiated Nuclear Fuel material, system/equipment failure, collision and structural failure, grounding/stranding, weather damage (including flooding) and sabotage/terrorism.

However, the scenarios do not include a response plan for the ship sinking. The CNSC staff also provides some accident scenarios. CNSC staff has noted that an accident would only result in a partial release of 0.132% of the total activity. However, they only calculated the release for one steam generator and failed to calculate the total releasable inventory for all 16 steam generators. These and other gaps were highlighted by interveners. Although CNSC staff addressed some of these gaps, they failed to address other gaps in their supplementary document (10-H19.D). We request that CNSC staff and Bruce Power provide release estimations for the 16 steam generators and an emergency response plans for a sinking ship.

Bruce Power and CNSC staff argue that the total possible release is negligible. However if an accident were to occur, low level radiation can still significantly impact the environment and human health.

The International Institute of Concern for Public Health (IICPH) noted the presence of radionuclides such as tritium and carbon-14 in the Great Lakes. The IICPH also warns that low doses of radiation in Great Lakes water systems pose a serious health hazard. The Great Lakes Information Network has noted that "long term low level exposure to ionizing radiation has been associated with the development of leukemia and other cancers." They also highlighted that "radiation weakens the immune system, and that exposure even at low levels may lower one's resistance to infectious diseases, as there is a depression in the white blood cell count at high levels of radiation exposure."

Based on Bruce Power's estimates of the isotopes and the mass of the isotopes, the steam generators are approximately 90% plutonium. In particular, the steam generators are nearly two-thirds (approximately 64%) plutonium-239. According to the US Environmental Protection Agency, plutonium-239 has a half-life of 24, 100 years. They have noted that plutonium "internal exposure to plutonium is an extremely serious health hazard. It generally stays in the body for decades, exposing organs and tissues to radiation, and increasing the risk of cancer. Plutonium is also a toxic metal, and may cause damage to the kidneys."

As noted in previous submissions, we are also concerned that this decision will set a precedent that could encourage the shipment of radioactive waste through the Great Lakes on a regular basis. An accident seriously threatens the drinking water of the 40 million people in the Great Lakes region as well as the drinking water of future generations.

Although compensation is part of the recovery actions, we ask CNSC staff to explain how Bruce Power will be held responsible for any cumulative and long-term effects of radiation resulting from an accident.

It is evident that there are significant gaps in this project. We ask that the CNSC incorporate revisions to the Great Lakes Water Quality Agreement. We request a federal review of the project along with the incomplete 2006 Environmental Assessment. We also request that CNSC staff provide missing information outlined in this supplementary submission as well as in the submissions of other interveners. We hope that CNSC staff will incorporate the potential long-term effects of an accident in this information.

We call for broader, more meaningful dialogue with First Nation communities, Great Lakes' municipalities and the rest of the Canadian public on radioactive shipments and recycling radioactive material.

Ultimately, we urge Commissioners to deny approval to Bruce Power's application in order to fulfill the CNSC's mandate of protecting Canadians and the Great Lakes.

Thank you for your attention in this matter.

Sincerely,

Emma Lui
National Water Campaigner
Council of Canadians