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June 21, 2005

Ms. Sarah Miller
The Canadian Environmental Law Association
130 Spadina Ave.
Suite 301
Toronto, Ontario M5V 2L4

RE: Environmental Assessment for the Bruce A Restart Project

Dear Ms. Miller:

In 2004, Bruce Power launched a study into the potential restart of Bruce A Units 1 and 2. While a final decision to proceed with the project has not yet been made, we have initiated an Environmental Assessment (EA) of Bruce A, including the life extension and continued operations of the facility. We have collected a significant amount of data and are ready to begin discussions with the public about our findings to date.

An important aspect of the environmental assessment process is consultation with the community. To facilitate this consultation, we have provided information on the Bruce A project and the EA on our website at www.brucepower.com. In addition, we are planning a second series of public open houses starting July 6 as detailed in the enclosed EA newsletter.

Bruce Power and Golder Associates Ltd, a consulting company assisting with the EA, will be present at the Open Houses to present our findings, answer your questions and hear your input.

We look forward to your feedback as the environmental assessment progresses. If you have any comments or questions please contact us by Email at bruceea@brucepower.com or by phone at 1-877-51-BRUCE.

Thanks for your interest in Bruce Power.

Regards,

A handwritten signature in black ink, appearing to read "Jim Hilbig". The signature is stylized with a large, sweeping "J" and "H".

Jim Hilbig
Nuclear Safety and Licensing Manager, Bruce A Restart
Bruce Power

Bruce A Refurbishment for Life Extension and Continued Operations Project

Issue 2 Spring 2005

BRUCE A RESTART

ENVIRONMENTAL ASSESSMENT

the Project

What's inside

The Project	1
Refurbishment activities	2
Replacement of the steam generators	
Assessing potential effects	2
Thermal discharges	
Environmental assessment	3
report	
Preparation and approval process	
Waste management	3
Community open houses	4
An update	
Contact us	4

In 2004, Bruce Power launched a study into the restart of Bruce A Units 1 and 2. While a final decision has not yet been made to expand our operating reactor fleet, an environmental assessment of Bruce A is underway, including life extension and continued operation of the facility. The project, known as the Bruce A Refurbishment for Life Extension and Continued Operations Project, includes refurbishments and enhancements to many of the nuclear and non-nuclear systems at Bruce A, refuelling and restarting Units 1 and 2, and potentially using new fuel in the Bruce A units. Bruce Power is planning to submit the required environmental assessment study report to the Canadian Nuclear Safety Commission in October 2005.

In March, Bruce Power reached a tentative agreement with a provincial negotiator for the restart of Units 1 and 2. The details of the tentative agreement, which have been approved in principle by the boards of directors of the major partners of Bruce Power, are now being considered by the Ontario government. Completing these negotiations is an important step in the overall approval process for the project.

This edition of the newsletter focuses on one aspect of the refurbishment activities, namely the replacement of the steam generators, and one aspect of the environmental effects assessment, namely studies being completed to determine the thermal effects on Lake Huron.

Please be sure to contact us or attend one of the upcoming Open Houses (see page 4) if you have any questions or comments about the project. Your input into the environmental assessment is important to us and to your community.

refurbishment activities

replacement of the steam generators

Prior to refuelling, restarting and operating Units 1 and 2 Bruce Power will undertake several refurbishment activities of the nuclear systems. One of the main refurbishment activities is replacing the steam generators, which are nearing the end of their safe and reliable service life. The new steam generators will operate safely and reliably for up to 30 years of additional life.

Eight steam generators are installed at each reactor unit at the Bruce A station, located in two banks of four on either side of each reactor. The steam generators transfer heat from the hot pressurized heavy water coming from the reactor (known as the primary side), to raise the temperature and boil natural or light water in the secondary side. Boiling light water in the secondary side produces the steam that supplies the turbine generator with the energy to generate electricity.

The following steps/activities have been identified as the most important for completing the removal and replacement of these units:

- Confirm worker and environmental safety procedures;
- Position a heavy lift crane outside of the Powerhouse on the north side;

- Cut access holes in the reactor building roof;
- Remove insulation and non-steam generator equipment from both reactor vault and boiler room;
- Clear interferences in area, disconnect and remove steam drums;
- Disconnect steam generators and immediately cap open ends and all other openings;
- Remove steam generators by lifting them through the roof and placing them in a temporary lay-down area;
- Prepare removed steam generators for transportation (cleaning, perforation sealing/pressure testing, vacuum);
- Transport to waste management facility, and
- Install new steam generators following Bruce A established safety procedures.

Previous industry experiences with the replacement of dozens of steam generators, including approximately 20 in North America, have shown the job can be done safely and effectively. Furthermore, levels of exposure to radiation and other hazards to workers and the public have been found comparable with, and even below, those associated with normal operations.

assessing potential effects

thermal discharges

All nuclear power stations generate electricity by using steam to turn power turbines. The heat required to generate steam is derived from the nuclear reactor core. Although the systems in nuclear generating stations are as efficient as possible, the production of waste heat is an unavoidable by-product of generating electricity. In CANDU reactors, once-through cooling water is used to remove waste heat. Lake Huron is the source of this cooling water for Bruce A. One effect of the discharge of waste heat to Lake Huron is a moderate increase in local water temperature.

Bruce A Units 3 and 4 and all four units at Bruce B are currently operating and discharging waste heat to Lake Huron. The Bruce A Refurbishment Project will increase the amount of cooling water discharged to the Lake and increase temperatures locally. This is expected to occur as a result of returning Units 1 and 2 to service and as a result of using new fuel in all four reactors.

As part of the environmental assessment, studies are underway to assess the behaviour and effects of the discharge of cooling water to the lake. A computer modelling study is being used to assess the mixing characteristics, flow path and temperature profiles of the thermal plume in Lake Huron. The sophisticated model uses a number of physical measurements such as water temperature, climate, water depth, currents, meteorological data and discharge flow data. The model will be calibrated using observed data and used to calculate the mean weekly average temperatures. This information will then be used to assess the effects of the thermal discharge on the aquatic environment.

Last winter, several temperature probes were installed in the vicinity of the Bruce A thermal discharge. These monitoring probes, which were removed during May, recorded the water temperature at the lake bottom at several locations at regular intervals. This information is being used to confirm the model calibration and to assist in the assessment of the extent, magnitude and effects of the thermal plume from Bruce A.

preparation

and approval process

Step 1	Announce project and environmental assessment studies
Step 2	Describe the project and identify interactions with the environment to focus analysis on relevant aspects
Step 3	Collect data, describe the existing environment and identify potential environmental effects
Step 4	Assess environmental and cumulative effects on the natural, social and economic environments; identify and consider mitigation measures and describe residual effects
Step 5	Determine significance of residual effects and effects on human health; develop monitoring program
Step 6	Prepare and submit draft environmental assessment study report to Canadian Nuclear Safety Commission staff
Step 7	Canadian Nuclear Safety Commission and Federal and Provincial staff review draft environmental assessment study report and direct revisions as required
Step 8	Canadian Nuclear Safety Commission staff prepares draft environmental assessment screening report and seeks public comment
Step 9	Canadian Nuclear Safety Commission Staff considers comments, revises screening report and refers final screening report for consideration and decision
Step 10	Canadian Nuclear Safety Commission determines acceptability of environmental assessment screening report

We are here

PUBLIC INPUT

- Newsletters
- Open Houses
- Stakeholder Meetings
- Website
- Workshops
- Toll-free Information Line 1-877-51-BRUCE
- Public Comment Period

bruceea@brucepower.com

waste management

moving forward

The management of wastes produced by the Bruce A Refurbishment Project must be considered in the environmental assessment. The project will produce both low and intermediate level wastes, which will be managed at Ontario Power Generation's (OPG's) Western Waste Management Facility (WWMF). Steam generators are a type of low level waste generated by the project. The environmental assessment for the Bruce A Refurbishment Project will consider the production of the wastes and their transportation to the WWMF.

The assessment of the receipt and long-term management of the refurbishment wastes at the WWMF is being considered in a separate environmental assessment currently underway by OPG for their Refurbishment Waste Storage Project. This project is considering an increase in the storage capacity for low and intermediate level wastes at the WWMF in support of the continued operation of the nuclear power stations in Ontario. Their environmental assessment is scheduled for submission to the Canadian Nuclear Safety Commission in September 2005. For further information on this project, refer to their website at <http://www.opg.com/ops/RWS1.asp>.

community open houses

an update

The first in a series of public Open Houses for the Bruce A Refurbishment Project environmental assessment were successful with more than 100 visitors in attendance. A total of seven Open Houses were held in January and February 2005 in each of the surrounding municipalities in Bruce County and in the City of Owen Sound. The purpose of the Open Houses was to:

- Introduce the project and environmental assessment to identified stakeholders and general public;
- Provide information about the project and environmental assessment study process; and
- Identify any initial public concerns or issues that should be addressed in preparing the environmental assessment.

The results of the Open Houses, and responses to all questions, were documented and are available at the library repositories (see box below).

The next series of Open Houses will be in July 2005 and will focus on the characterization of the existing environment and the findings of the environmental assessment to date. The dates and locations of the Open Houses are as follows:

- Saugeen Shores – July 6 (Lakeshore Recreation in Port Elgin);
- Huron-Kinloss – July 7 (Lucknow Legion);
- Kincardine – July 13 (Best Western Governor's Inn);
- Arran-Elderslie – July 14 (Chesley Legion);
- Owen Sound – July 20 (Owen Sound North Grey Public Library); and
- Brockton – July 21 (The Hartley House in Walkerton).

If you are unable to attend any of the Open Houses or have a question about the project or environmental assessment, please do not hesitate to contact us. Also, Bruce Power would be happy to facilitate a telephone appointment with members of our team to answer any questions you may have.

Library repositories

Information on this environmental assessment is being placed in the following libraries as it becomes available. Ask the librarian to see the

Bruce A Refurbishment Project file.

- Kincardine Library, 727 Queen Street
- Port Elgin Library, 708 Goderich Street
- Tiverton Library, 56 King Street
- Southampton Library, 215 High Street
- Walkerton Library, 253 Durham Street East
- Paisley Library, 274 Queen's Street North
- Hanover Library, 451 10th Avenue
- Owen Sound Library, 824 First Avenue West

Contact us

Bruce A Refurbishment for Life Extension and Continued Operations Project

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Come and see: The Bruce Power Visitors' Centre is open Monday to Friday, 9 a.m. to 4 p.m., but closed statutory holidays.