

*Bruce A Refurbishment for Life Extension  
and Continued Operations Project*

**Presentation to the Joint Council  
of the Saugeen Ojibway Nations**



**April 2005**

**Bruce Power**  


The logo for Bruce Power, featuring the word "Bruce" in blue and "Power" in orange, with a stylized sunburst above the "P" and wavy lines below the text.

**PRESENTATION TO THE JOINT COUNCIL  
OF THE SAUGEEN OJIBWAY NATIONS**

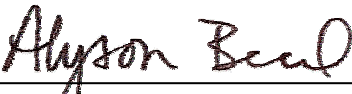
**Bruce A Refurbishment for Life Extension  
and Continued Operations Project**

Revision 0

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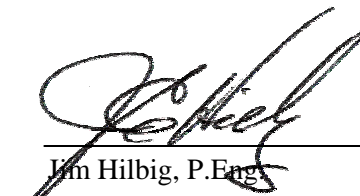
  
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## **1.0 INTRODUCTION**

In October 2004, Bruce Power initiated an environmental assessment (EA) of the Bruce A Refurbishment for Life Extension and Continued Operations Project. The project is proposing to return Bruce A Units 1&2 to service from their temporary lay-up. This will require implementing a series of refurbishments, upgrades and enhancements at Bruce A, improving safety while increasing electricity generation capacity and reliability for the extended life of these units. An important and integral component of the EA is the implementation of the Community and Stakeholder Consultation Plan. Two objectives of the plan are to:

- Keep identified stakeholders in the EA process informed about the progress of the EA, the nature and scope of the EA process, key events and activities and the results of the EA studies; and
- Provide opportunities for stakeholders and members of the public to provide data and information as input to the EA studies and to identify and discuss any concerns they may have.

A presentation was made to the Joint Council of the Saugeen Ojibway Nations on March 4, 2005 at the Chippewas of Nawash Unceded First Nation Council Chambers in Cape Croker, Ontario. This report documents the events of that meeting.

## **2.0 MEETING PARTICIPANTS**

The presentation on the Bruce A Refurbishment Project was made to the Joint Council of the Saugeen Ojibway Nations. The Joint Council of the Saugeen Ojibway Nations comprises representatives from the Chippewas of Saugeen First Nation and the Chippewas of Nawash Unceded First Nation. Both Chief Ralph Akiwenzie and Chief Vern Roote of Chippewas of Nawash and Saugeen Ojibway, respectively, were in attendance at the meeting in addition to representatives from both Councils.

Mr. Frank Saunders, Vice President, Safety and Environment, and Mr. Ross Lamont, Corporate Communications, represented Bruce Power at the meeting. Dr. Duncan Moffett, Golder Associates Ltd., made the presentation to the Joint Council.

## **3.0 PURPOSE AND AGENDA**

The goals of the presentation were to present the methods being used by the EA study team to identify and assess likely effects of the project and to provide the Joint Council an opportunity to ask questions and provide comments on the proposed approach. The presentation follows four general sections, as summarized as follows. A copy of the presentation is included in Appendix A. The presentation was made by Mr. Frank Saunders and Dr. Duncan Moffett.

### **3.1 About Bruce Power**

A brief presentation about Bruce Power, which included the following key points:

- Provided an overview of the Bruce Power site;
- Described Bruce Power's ownership and their lease agreement with Ontario Power Generation (OPG); and
- The history of the Bruce A station, including when the units were brought into and out of service.

### **3.2 Project Description**

The presentation on the Bruce A Refurbishment Project Description included the following key points:

- Provided an overview of the major components at the Bruce A station;
- Described the purpose and scope of the Bruce A Refurbishment Project, including the replacements of the steam generators and fuel channels and upgrades of various equipment at Bruce A;
- Provided a description of the activities required to replace the fuel channels and remove and replace the steam generators; and
- Described how the wastes generated by the project will be managed at the Western Waste Management Facility.

### **3.3 Environmental Assessment (EA)**

The presentation on the EA required for the Bruce A Refurbishment Project included a description of the following items:

- The EA process, requirements under the *Canadian Environmental Assessment Act* (CEAA);
- The development of the draft EA Guidelines by the CNSC, the opportunities for public comment and what they include;
- The steps in the EA process, including the assessment studies, the opportunities for the public to be involved and the CNSC review and decision steps;
- The proposed methodology to identify likely environmental effects, assess these effects, consider mitigation measures and determine the significance of any residual effects due to the Bruce A Refurbishment Project;
- Described how the potential effects are assessed in the context of Local, Site and Regional Study Areas and Valued Ecosystem Components (VECs); and

- Noted that information on methodology and VECs was discussed at the Workshop on February 1, 2005. Workshop attendees included Ms. Tania Morais of the Chippewas of Saugeen First Nation.

### 3.4 Opportunities for Input

The presentation concluded with a discussion on opportunities to provide input into the Bruce A Refurbishment Project EA. The key opportunities for input are:

- How traditional knowledge can be incorporated into the EA;
- Whether the proposed VECs are appropriate; and
- Whether there are any other issues specific to First Nations.

Contact information to provide comments on the EA was also provided.

Following these presentations, the Joint Council members were provided with opportunity to ask questions on the project and the EA. These discussions are reported in Section 4.

## 4.0 DISCUSSION

Table 4-1 documents the comments made and questions raised following the presentation. A response to the question or comment is also provided in the table. These questions and responses will also be posed onto the project website.

**Table 4-1: March 4, 2005 Saugeen Ojibway Joint Council Discussion Summary**

QUESTION OR COMMENT	RESPONSE
<ul style="list-style-type: none"> <li>• How would future Lake Huron water levels affect operation of the power station?</li> <li>• What would be the effects of climate change on the power station?</li> </ul>	<ul style="list-style-type: none"> <li>• The Bruce Power stations use lake water for cooling. However, because the lake water intake is through a tunnel extending out into deeper water, changes in Lake Huron water levels would have very little effect, if any, on the continued use of lake water for cooling. After use, the cooling water is returned to Lake Huron. However, effects of lower lake levels might be seen in the effects that discharges from the power stations could have on the near-shore environment, including fish and water fowl. The environmental assessment studies will include consideration of any effects of lower lake water levels on the near-shore environment.</li> <li>• Few if any effects are expected on the operation of the power stations as a result of climate change. More significantly, the generation of electricity by Bruce Power occurs without the production of the greenhouse gases responsible for climate change. Bruce Power believes that the continued operations of its nuclear stations provide a major environmental benefit by avoiding the large quantities of greenhouse gasses produced by many other large-scale ways of generating electricity.</li> </ul>

QUESTION OR COMMENT	RESPONSE
<ul style="list-style-type: none"> <li>• Will high level waste (also known as “used fuel”) be transported from other nuclear power stations to the Bruce site?</li> <li>• What is Bruce Power’s relationship with Ontario Power Generation (OPG)</li> <li>• How many units of Bruce A is Bruce Power planning to restart?</li> <li>• Why were Units 1&amp;2 shutdown in the first place?</li> <li>• Will the wastes produced by the restarted units be recycled?</li> </ul>	<ul style="list-style-type: none"> <li>• No. Used fuel from other power stations is not transferred to the Bruce Power site. Used fuel from the Bruce stations is initially stored in water filled pools at each power station for at least 10 years before being transferred in dry storage containers to OPG’s Western Waste Management Facility for management.</li> <li>• Bruce Power is a partnership among Cameco Corporation (31.6%), TransCanada Corporation (31.6%), BPC Generation Infrastructure Trust, a trust established by the Ontario Municipal Employees Retirement System (31.6%), the Power Workers’ Union (4%) and The Society of Energy Professionals (1.2%). Bruce Power operates the Bruce nuclear power stations and most of the facilities on the Bruce Power site under a leasing arrangement with OPG. The lease extends to 2018, with an opportunity to extend it through 2043. OPG retains the ownership of the stations.  In addition, OPG continues to own and operate the Western Waste Management Facility (WWMF) on the Bruce Power site. The WWMF receives and manages low and intermediate level wastes from all Ontario power stations, include the Bruce stations. In addition, OPG manages the used fuel from the Bruce stations. Bruce Power pays OPG for these waste management services.</li> <li>• The company plans to restart the two remaining shutdown units at the Bruce Power site, namely Bruce A Units 1&amp;2. There are currently six operating units at the site, two at Bruce A (Units 3&amp;4) and four at Bruce B (Units 5-8). Once Units 1&amp;2 are restarted there will be eight operating units at the site, similar to the early 1990s</li> <li>• In the late 1990s, Ontario Hydro (now known as Ontario Power Generation) carried out an extensive review of the operation of all its power stations, including those at Bruce. That review concluded that Ontario Hydro’s resources were stretched too thinly to allow the operation of all power stations and recommended that eight of the 20 operating units be temporarily shut down, so that Ontario Hydro could focus on improving the performance of the other 12 units. The shut down included four units at Bruce and four units at Pickering. It was always intended to restart the shutdown units once the company’s resources were brought back to full strength. Bruce Power took over operation of the Bruce Power site in 2001, and restarted two of the shutdown units in late 2003 and early 2004. Bruce Power now intends to restart the last two shutdown units at the site.</li> <li>• 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 place into storage.  Used fuel from the power stations cannot be reused or recycled once it is removed from the reactors.</li> </ul>

QUESTION OR COMMENT	RESPONSE
<ul style="list-style-type: none"> <li>• How many additional workers will be required to refurbish the units?</li>   <li>• When will you know if the project is going ahead and the units will be restarted?</li>   <li>• Are your consultants, Golder Associates Ltd., in a conflict of interest in carrying out the environmental studies since Bruce Power is paying their bill? How can we expect the environmental studies to be objective and fair?</li>   <li>• Do Bruce Power's plans involve managing waste from Bruce A or do they also include waste coming from other sites?</li>   <li>• Will the environment assessment consider any effects on the food chain and on all parts of the environment?</li>   <li>• How is the security of the power station being protected against acts of terrorism?</li> </ul>	<ul style="list-style-type: none"> <li>• Initial estimates are that there will be between 500 and 1000 construction workers involved with refurbishing and restarting the units. These temporary construction workers are in addition to the approximately 3500 people required to operate all eight units and other Bruce Power facilities on-site.</li>   <li>• Bruce Power is currently negotiating with the Government of Ontario regarding the conditions under which the units would be restarted. It is expected that these negotiations will have progressed sufficiently by early Spring to allow Bruce Power to make a decision on the restart.</li>   <li>• Bruce Power has hired Golder Associates Ltd. to carry out the studies required for the environmental assessment. Golder is an international environmental and ground engineering company with extensive experience in carrying out environmental assessments in Ontario, Canada and around the world. Golder has a reputation for integrity and thoroughness in carrying out its work. Bruce Power has hired Golder because of this reputation and because Golder has carried out similar studies at Bruce, Pickering and Darlington.  The nature of the studies required for the EA are provided in the EA Guidelines issued by the Canadian Nuclear Safety Commission, and Golder's studies must meet all these requirements. In addition, the results of Golder's studies will be extensively reviewed by government specialists and the public.</li>   <li>• Bruce Power has no responsibility for wastes from other power stations and does not receive any wastes from outside the site. However, all wastes produced from the Bruce stations are transferred to Ontario Power Generation for management at the Western Waste Management Facility on the Bruce Power site. OPG owns and operates the Western Waste Management Facility which receives and manages low and intermediate level wastes from all Ontario power stations, include the Bruce stations.</li>   <li>• The studies being carried out as part of the environmental assessment are broad and thorough and cover all aspects of the environment. Specifically they consider how releases from the power station to air, water and land may affect plants, animals and people, through a variety of pathways including growing and eating food, including fish and country foods.</li>   <li>• Bruce Power maintains a high degree of security at the site, including restricted access to the site and power stations, screening of all personnel working at the site, and a highly trained security force. For reasons of security and confidentiality, consideration of external threats such as acts of terrorism and sabotage in the assessment is not included in the environmental assessment but is addressed by the Canadian Nuclear Safety Commission's regulatory and licensing processes.</li> </ul>

QUESTION OR COMMENT	RESPONSE
<ul style="list-style-type: none"> <li>• Do the emergency response plans include the First nations or are they limited to the immediate vicinity of the power station?</li> <li>• What process will Bruce Power follow to decide if new reactors are to be built at the Bruce site?</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency response planning for the unlikely event of an accident that could affect people outside the Bruce site is the responsibility of a government agency, Emergency Management Ontario. Bruce Power works with Emergency Management Ontario and other local emergency responders to assist in the development and testing of emergency response plans. The current emergency response plans are available in local libraries.</li> <li>• Any decision to build new reactors at the Bruce Power site would involve business decisions, feasibility analysis, environmental assessment approvals and licensing decisions. Once the need for the electricity is determined and a satisfactory analysis of the business case is made, Bruce Power would be required to carry out an environmental assessment before any approval to begin construction of new power station(s) could be given by the Canadian Nuclear Safety Commission. Because of the time required to complete the feasibility analysis, any decision with respect to construction of new reactors is some years away.</li> </ul>

## 5.0 NEXT STEPS

The next steps in the EA were summarized as follows:

- A report of the Joint Council meeting proceedings will be prepared, sent to all participants and made available at the library repositories, on the project website ([www.brucepower.com](http://www.brucepower.com)) and upon request;
- All comments received will be carefully considered by the EA study team and, where appropriate, will be addressed in the EA Study Report;
- The draft EA Study Report should be available for public review sometime in late summer. The findings in the draft report will be posted on the project web site as soon as available and presented to the public in a newsletter and round of open houses in July 2005;
- The CNSC will prepare a Screening Report, which will also be available for public review;
- This EA is registered with the CEA Registry (#04-01-8081) on the Federal Environmental Assessment Index, and can be found on their web site at [www.ceaa.gc.ca](http://www.ceaa.gc.ca); and
- A dedicated web site ([www.brucepower.com](http://www.brucepower.com), follow the Bruce A EA link) and a dedicated email ([bruceea@brucepower.com](mailto:bruceea@brucepower.com)) have been created. This site contains information on the project, including the Project Description and the draft EA Guidelines.

**APPENDIX A  
JOINT COUNCIL PRESENTATION**

# Bruce A Refurbishment for Life Extension and Continued Operations Project

Presentation to Joint Council  
Saugeen Ojibway First Nations  
March 4, 2005

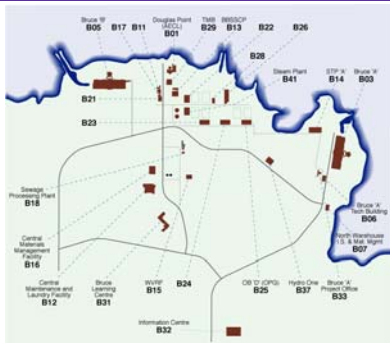


## Thank You For This Opportunity to Present an Overview of Bruce A Environmental Assessment



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## Site Overview



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## Bruce Power

- Ontario's largest independent producer of electricity.
  - Supply approximately 20 per cent of Ontario's power need.
- Bruce Power partners:
  - Cameco Corporation - 31.6 %
  - TransCanada Corporation - 31.6%
  - Ontario Municipal Employees Retirement Board (OMERS) - 31.6%
  - Power Workers Union - 4%
  - Society of Energy Professionals - 1.2%

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## Restarting Units 1&2?

- In 2004 Bruce Power launched a study into the potential restart of Bruce A Units 1&2
- Technical evaluations are now complete
- Scope of the potential project is known
- A final decision has not yet been made to expand the Bruce Power reactor fleet
- As part of the planning process, Bruce Power has begun an environmental assessment (EA) of Bruce A
- We're here to discuss the EA

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## History of Bruce A

- **1977-1979:** Four Bruce A units enter service
- **Late 1990s:** Bruce A units temporarily taken out of service by Ontario Hydro
- **2002-2003:** Bruce Power completes environmental assessment of Units 3&4
- **2002-2004:** Bruce Power invests \$720 million and returns Units 3&4 to service
- **2011-2013:** Units 3&4 continue to generate pollution-free electricity
- **1996-present:** Units 1&2 have remained in defuelled guaranteed shut-down state since they were taken out of service

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## Bruce A



Unit 1  
Unit 2  
Unit 3  
Unit 4

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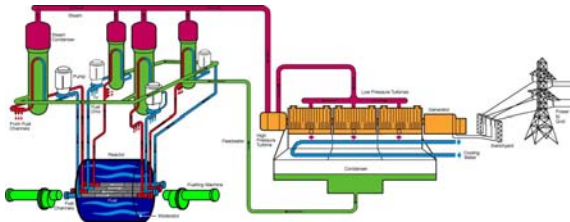
## Bruce A Refurbishment Project

- Replace steam generators and fuel channels
- Refurbish other nuclear and non-nuclear systems
- Refuel, restart and operate Units 1&2 for up to 30 years
- Potential refurbishment of Units 3&4
- Potentially use new fuel design to enhance safety



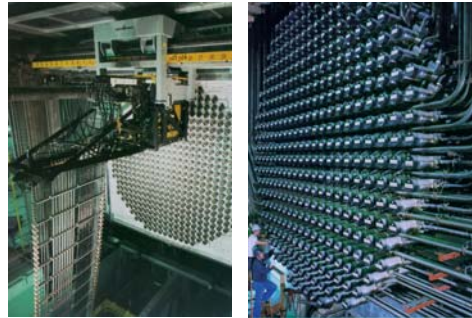
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## Major Components of Bruce A



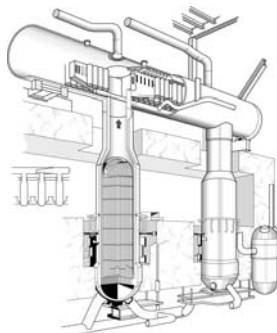
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## Replace Pressure Tubes



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## Replace Steam Generators



Steam Generator - Bruce A

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## Upgrade Turbine Generators



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## How Will Wastes Be Managed?

- Low and intermediate level wastes and used fuel will continue to be safely managed by OPG at the Western Waste Management Facility (WWMF) located on the Bruce site.
- The EA will examine effects of waste generation from Bruce A and its transportation to the WWMF.



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## Electricity for Ontario Until 2043

- Refurbished station would provide 12% of Ontario's electricity needs.



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## Why is an EA Required?

- Some of the Bruce A Refurbishment Project activities require that the Bruce A licence be amended
- Before the regulatory agency – the Canadian Nuclear Safety Commission “CNSC” – can make its decision to grant any licence amendment, an EA must be completed
- The *Canadian Environmental Assessment Act* (CEAA) main purposes of EA are to:
  - Minimize or avoid adverse environmental effects before they occur
  - Incorporate environmental factors into decision making

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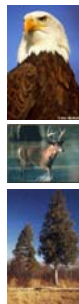
## What are the EA Guidelines?

- The *Canadian Environmental Assessment Act* requires the CNSC to ensure that an EA is completed and a Screening Report prepared before granting any approval for the project
- The terms of reference for the EA – known as the “EA Guidelines” – are determined by the CNSC following public consultation
- Copies of the draft EA guidelines were provided by CNSC as part of their review process
- CNSC will finalize guidelines at Public Meeting in Ottawa May 19<sup>th</sup>

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## What Will the EA Include?

- Draft guidelines issued by the CNSC require that the EA includes a consideration of:
  - Direct environmental effects of the project
  - Effects of malfunctions and accidents
  - Cumulative effects in combination with other projects or activities
  - Significance of the effects
  - Economically feasible measures that would mitigate any significant adverse environmental effects of the project
- The time frame for the assessment would extend from 2004 to 2043 and will address important components of the natural and human environments



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## How is an EA Carried Out?

- The purpose of the EA is to predict effects of the operation of Bruce A in future and determine if any significant environmental effects are likely
- Valued Ecosystem Components (VECs) are used to determine likely effects.
- Likely effects are considered within Site, Local and Regional Study Areas
- This EA will draw on information from two previously completed EAs:
  - Bruce A Units 3&4 Restart (2002)
  - Bruce B New Fuel (2004)



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## Identifying VECs

- Valued Ecosystem Components “VECs” are features of the environment selected to be a focus of the EA because of their ecological, social, and/or economic value, and their potential vulnerability to the effects of the project
- VECs include:
  - Human Health
  - Aboriginal persons
  - Aquatic and Terrestrial biota (fish, animals, birds)
  - Important aspects of the physical environment
  - Important social and community resources
- Comments being sought on VECs



## Where Will the Effects Be Assessed?



■ Regional Study Area

■ Site Study Area

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## Steps in the EA Process



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## Other Projects Not Related to Bruce A

- OPG intends to increase its storage capacity at the WWMF to accommodate future wastes from nuclear facilities in Ontario and is conducting a separate EA
- Kincardine and OPG are also considering the development of a long-term Deep Geologic Repository (the DGR proposal) at the Western Waste Management Facility on the Bruce Power site for low and intermediate level radioactive waste
- The Nuclear Waste Management Organization (NWMO) is conducting a study of future long-term management of Canada’s used nuclear fuel

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## We Need Your Help

- How best to continue to provide information on the EA?
- Opportunity for First Nations to provide input to the EA:
  - How can Traditional Knowledge be incorporated into the EA?
  - Are the VECs appropriate?
  - Are there specific First Nations issues?

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## Contact Us

- **You can reach us at:**
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  - Web site: [www.brucepower.com](http://www.brucepower.com)
  - Email: [bruceea@brucepower.com](mailto:bruceea@brucepower.com)

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