CNSC CCSN
1377928

Bruce Power

Duncan Hawthorne
President & Chief Executive Officer

Wednesday, October 25, 2006

Mr. M.A. Leblanc
Commission Secretary
Canadian Nuclear Safety Commission (CNSC)
P.O. Box 1046, Station B
280 Slater Street
Ottawa, Ontario
K1P 5S9

26-1-7-1-0
Leblanc, M

Dear Mr. Leblanc,

Over the past couple of months Bruce Power has conducted an initial round of public consultation following the announcement of Bruce Power's intent to proceed with the initial regulatory steps for the construction of a new nuclear facility on the Bruce Power site, including an Environmental Assessment (EA) required under the Canadian Environmental Assessment Act (CEAA).

In a letter to the CNSC on September 25th, Bruce Power committed to providing a comprehensive report to the CNSC providing a detailed account of our consultation activities by October 27, 2006. The attached report fulfills this commitment. Overall, Bruce Power is very pleased with the level of support within the surrounding communities for our planning activities. As you will see in the report, this support was evident during our initial consultations. Bruce Power is committed to keeping the surrounding communities updated on a regular basis about our plans for the site and future steps in the regulatory process.

Bruce Power has also proceeded with a workshop for key stakeholders on the content of our draft project description previously submitted to the CNSC. This workshop was designed to engage key stakeholders early in the process and to provide them a complete understanding of Bruce Power's proposed approach to the EA process. A detailed report on that workshop will be submitted by November 9th.

Bruce Power has also been in contact with representatives from both local First Nations and I intend to personally meet with each of the Chief's in the near future. Following those meetings, Bruce Power will submit a communications plan outlining how we intend to continue engaging both of these communities.

Bruce Power P. O. Box 3000, B0602 Tiverton ON N0G 2T0
Telephone (519) 361-4403 Facsimile (519) 361-3340
E-mail duncan.hawthorne@brucepower.com
www.brucepower.com

If you have any questions please contact Mr. Frank Saunders Vice-President Safety, Environment and Assessment at 519-361-5525 or by email frank.saunders@brucepower.com.

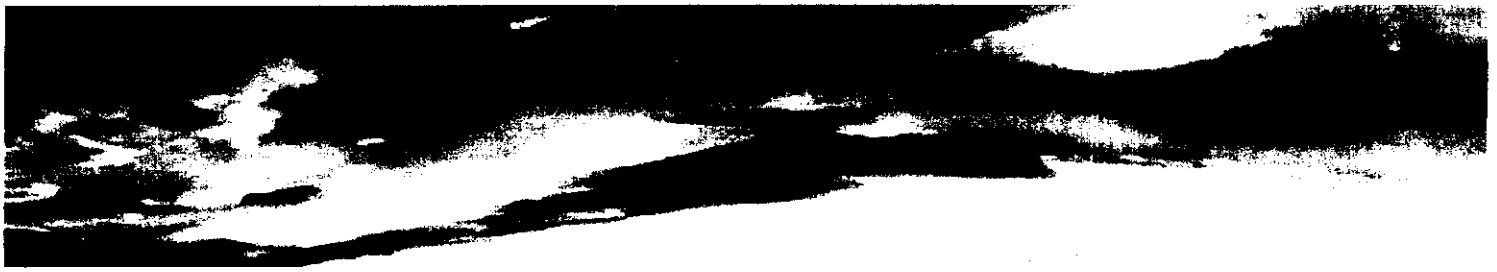
Regards,

Original signed by:

Duncan Hawthorne

CC: Phil Webster, CNSC

Bruce Power



Bruce Power New Build Project
Environmental Assessment

Round One Open House Report

October 2006

next GENERATION
the evolution of nuclear

BRUCE POWER NEW BUILD PROJECT
ENVIRONMENTAL ASSESSMENT

ROUND ONE OPEN HOUSE REPORT

Submission to:
CANADIAN NUCLEAR SAFETY COMMISSION

By:

Bruce Power
PO Box 3000
Tiverton, ON
N0G 2T0

Version 1
October 2006

ROUND ONEOPEN HOUSE REPORT

BRUCE POWER NEW BUILD PROJECT ENVIRONMENTAL ASSESSMENT

Version 1

Prepared by:

Golder Associates Ltd.
2390 Argentia Road
Mississauga, ON, L5N 5Z7

Recommended by: October 20, 2006

Dr. Duncan Moffett — Date
Golder Associates Ltd.

Reviewed by: October 20, 2006

Frank Saunders — Date
Vice-President Safety, Environment and Assessment
Bruce Power

1.0 INTRODUCTION

Bruce Power has announced its intent to the Canadian Nuclear Safety Commission (CNSC) to proceed with an environmental assessment (EA) of building additional nuclear generating capacity at the Bruce Power site. This project is referred to as the Bruce Power New Build Project (also referred to as the "Project"). The EA is part of a multi-year planning process to determine whether to refurbish existing units, build new replacement units or build additional generating capacity.

A public communications and consultation program[1] has been developed as an integral component of the EA process. This report summarizes the first round of Open Houses conducted as part of the public consultation program. The purpose of this round of Open Houses was for Bruce Power to describe its long-term development plans, to elicit initial public input, and to encourage the public to participate in the EA planning process. This report describes how the public was notified of the Open Houses, the content of presentations and display panels, the feedback provided by participants, and the next steps in the communications and consultation program.

2.0 OPEN HOUSE NOTIFICATION

The public was invited to a series of five Open Houses at the locations displayed in Table 2-1 below. The Open Houses were conducted from approximately 6:00 p.m. to 8:00 p.m. on the dates identified.

Table 2-1 Round One Open House Locations and Dates

Open House #	Location	Date
1-A	Bruce Power Visitors' Centre, Tiverton, ON	August 30, 2006
1-B	Lakeshore Racquet Club, Port Elgin, ON	September 14, 2006
1-C	Owen Sound North Grey Union Public Library, Owen Sound, ON	September 18, 2006
1-D	Governor's Inn, Kincardine, ON	September 19, 2006
1-E	The Hartley House, Walkerton, ON	September 26, 2006

[1] A separate First Nations Communications Plan is being prepared for the EA.

TABLE OF CONTENTS

SECTION PAGE

LIST OF TABLES

LIST OF APPENDICES

Stakeholders and the public were notified of the Open House by the following methods:

- Advertisements announcing the Open Houses were placed in the newspapers listed in Table 2-2 on the dates indicated. Samples of the advertisements are included as Appendix A1 to this report;
- 30-second radio announcements were made three times daily on the stations listed in Table 2-3 on the dates indicated. Copies of the announcements are included as Appendix A2 to this report;
- 33,500 invitation cards announcing the project and inviting the public to the Open Houses were mailed on August 24, 2006 to persons and organizations with the postal codes listed in Table 2-4. A copy of the invitation is included as Appendix A3 to this report; and
- Notice of the Open Houses was placed on the Bruce Power website (http://www.brucepower.com/pagecontentNB.aspx?navuid=90). Copies of pertinent web pages are included as Appendix A4 to this report.

Table 2-2: Placement of Newspaper Advertisements

Media	Running Dates
Owen Sound Sun Times	August 25, 26, 28, 29, 30; September 12, 13 and 14, 2006
Shoreline Beacon	August 23, 30, and September 13, 2006
Kincardine News	August 23, 30, and September 13, 2006
Wiarton Echo	August 23, 30, and September 13, 2006
Clinton News	August 23, 30, and September 13, 2006
Goderich Signal Star	August 23, 30, and September 13, 2006
Lucknow Sentinel	August 23, 30, and September 13, 2006
Walkerton Herald Times	August 23, 30, and September 13, 2006
Kincardine Independent	August 23, 30, 2006

Table 2-3: Placement of Radio Advertisements

Media	Running Dates
CFPS 97.9 FM	August 26, 27, 28, 29, 30; September 11, 12, 13, 14, 15, 16, 17, 18, and 19, 2006.
CIXK 106.5 FM	August 26, 27, 28, 29, 30; September 11, 12, 13, 14, 15, 16, 17, 18, and 19, 2006.

Media	Running Dates
CKNX 101.7 FM	August 26, 27, 28, 29, 30; September 11, 12, 13, 14, 15, 16, 17, 18, and 19, 2006.
CKNX 920 AM	August 26, 27, 28, 29, 30; September 11, 12, 13, 14, 15, 16, 17, 18, and 19, 2006.

Table 2-4: Invitation Card Mailings

Community	Postal Codes	Number mailed
Owen Sound	All N4K	13,655
Kincardine	All N2Z	4,706
Chepstow	N0G 1K0	165
Chesley	N0G 1L0	1,440
Holyrood	N0G 2B0	192
Paisley	N0G 2N0	875
Ripley	N0G 2R0	743
Tiverton	N0G 2T0	1,183
Walkerton	N0G 2V0	3,346
Lucknow	N0G 2W0	400
Port Elgin	N0H 2C0	3,703
Southampton	N0H 2L0	1,916
Tara	N0H 2N0	1,296
Wiarton	N0H 2T0 (R.R.#5)	275
Total		33,895

3.0 OPEN HOUSE PARTICIPATION

The following Table 3-1 displays the number of participants who signed-in to each Open House, including Bruce Power staff and consultants.

Table 3-1 Number of Attendants who Signed-in to Each Open House

Open House #	Date	Signed Attendance
1-A	August 30, 2006	54
1-B	September 14, 2006	13
1-C	September 18, 2006	11
1-D	September 19, 2006	15
1-E	September 26, 2006	8

Visitors to each Open House were greeted by Bruce Power and Golder Associates staff, and invited to sign in and peruse display panels on the Project. A copy of the display panels is included as Appendix B1 to this report. A variety of handout materials were also made available at the Open Houses (copies of the handout materials are included as Appendix B2). Handouts included:

- Copies of the display panels;
- Descriptions of the various reactor models being considered;
- Information on the different types of EAs under the *Canadian Environmental Assessment Act* (CEAA);
- Public comment sheets;
- Bruce Power corporate information; and
- Golder Associates corporate information.

Bruce Power and Golder Associates staff explained the information on the display panels and handouts, and responded to questions. The display panels introduced Bruce Power and the Bruce Power New Build Project, described the EA process, and gave information on how people may be involved. Responses from participants indicated that the Open House displays and presentation met the needs of those who provided feedback (see Section 4.0).

Duncan Hawthorne, President and CEO of Bruce Power[2] gave a Power Point presentation at each Open House. Mr. Hawthorne described the objectives of this round of Open Houses and provided a long-term business case analysis for development options, which included the refurbishment of existing units, building new replacement units or building additional generating capacity with new units.

Over the course of the Open Houses and during the presentations, participants asked a number of questions, to which Bruce Power or Golder Associates staff provided responses. These questions and responses are summarized in Table 3-2.

Table 3-2: Summary of Questions and Responses at Each Open House

Reactor Design / Planning	
Q1	How will you decide on the preferred reactor design? If you have three or four types of reactors to choose from, is the lowest price option the best to suit your needs?
A1	Bruce Power will evaluate the different reactor designs using a number of considerations such as: • Canadian content • Design features – Bruce Power is looking at various Generation III reactors (AECL's ACR-1000, Westinghouse's AP1000, AREVA's EPR, AREVA's SWR-1000 and GE's ESBWR). Generation III reactor designs are typically more simple to build, with less equipment and cost, and simpler to operate. • Economics – Capital costs and how efficiently the designs will operate. • Terms from the Vendor – this will include performance guarantees and other terms that will add value to the long-term operation of the design. • Licensability – Each of the reactor designs considered will have to meet safety requirements that are a fundamental component of licensing. • Training requirements – the workforce demographics at the Bruce Power site are such that there are unlikely to be limitations with regard to training requirements (i.e., by the time that a workforce is required to operate the New Build facility there will have been a significant turn-over in existing staff and there will be a need for training regardless of which reactors are operated). Bruce Power will also evaluate the enhanced CANDU 6 which is a newer model of the CANDU design used at the Bruce Nuclear site and which have been built recently in China. In addition to the above criteria, Bruce Power will engage with the Provincial Government as part of any such decision, given that the province is the owner of the Bruce Power site assets.
Q2	CANDU reactors have a heavy water requirement. Will obtaining heavy water be a problem?
A2	The ACR-1000 has a much reduced heavy water component compared with early CANDU designs since it uses heavy water as a moderator but not for the coolant. The enhanced CANDU 6 continues to use heavy water as both a moderator and a coolant. It is Bruce Power's expectation that the

[2] On September 18 in Owen Sound Robert Nixon, Chief Nuclear Officer of Bruce Power, gave the presentation.

	vendor will evaluate the availability and supply of heavy water for inclusion in the consideration of the ACR-1000 or CANDU 6.
Q3	What is the life of the reactors being considered for New Build?
A3	Westinghouse's AP1000, AREVA's EPR and GE's ESBWR all have a design life of approximately 60 years without major refurbishment. The ACR-1000 also has a design life of 60 years, provided that refurbishment occurs after 30 years. The CANDU 6 also has a design life of 60 years, with refurbishment required at 30 years.
Q4	Are all of the new reactor designs being considered ready to be licensed?
A4	Bruce Power is considering five Generation III reactors (AECL's ACR-1000, Westinghouse's AP1000, AREVA's EPR, AREVA's SWR-1000, and GE's ESBWR). Although the current CANDU reactors are licensed in several countries, the ACR-1000 is currently under-going certification in Canada. The ACR-1000 meets Canadian regulatory requirements and applicable international requirements. The Westinghouse AP1000 has been granted a Final Design Approval (FDA) by the US Nuclear Regulatory Commission on September 13, 2004, which is valid for five years. The EPR is currently undergoing regulatory reviews in Finland and France. The licensing process has been initiated in the U.S. for the EPR, and many of the design elements have previously been licensed in the U.S. The ESBWR is currently in the U.S. design certification process, where a full safety evaluation report (SER) is expected by late 2007, in time for construction and operating license (COL) submissions that would support the commercial operation of new ESBWRs by 2014 or 2015. The SWR 1000 fulfills international nuclear regulatory requirements and has been offered to a nuclear power generation plant in Finland for deployment. It is currently undergoing pre-certification with the US NRC.
Q5	Refurbishment would give you an extra 30 years – will New Build really extend your business plan into the mid 2060s?
A5	New Build will extend our business plan by approximately 60 years.
Q6	If you are successful with the last business plan presented (i.e., refurbish Bruce B and New Build) and get up to the Bruce Power site's full capacity, where will the Bruce Power site stand in the world?
A6	The Bruce Power site is the largest nuclear electricity generating site in North America. The planning process will examine what technology is available, and potential environmental effects. If approval is granted to the refurbishment and New Build, upgrades and other future considerations/ options can be addressed when required. This depends not only on EA and regulatory approval, but also community support, as well as government and business planning analyses. With the refurbishment and New Build the Bruce Power site would represent 35% of Ontario's generation capacity and would continue to be a very big player in the market – likely the biggest in the world.
Q7	Does the option of combining the New Build with the refurbishment of Bruce B provide Bruce Power with a more cautious approach, because the New Build is riskier, due to the fact that Bruce Power has never built a new plant?
A7	Refurbishment is a very complex project especially with the operation of adjacent reactors. Removing internal units might be more difficult than building a new reactor. However, there are

	risks associated with any new project. Particularly when it uses new design technology. As with the Bruce A Refurbishment Project, Bruce Power believes that by taking the time to plan and understand a project, risks can be better understood and mitigated. For example, as part of Bruce Power's planning process we are conducting an EA to understand what the environmental effects of future options may be and determine how we can best mitigate any effects that may be identified.
Project Financing	
Q8	Do your investors have funds to do the refurbishment of Bruce B? Will there be incentives from the reactor vendors to select their designs?
A8	The restart of Units 3 and 4 was accomplished from cash flow from current operations. The successful completion of that project has established that Bruce Power has the ability to deliver on their commitments. Bruce Power is demonstrating continued performance with the refurbishment of the Bruce 1 and 2 units. Accordingly, Bruce Power enjoys a good reputation with their investors. In testament to this, Bruce Power is in partnership with the Ontario Municipal Employees Retirement System, the Power Worker's Union and the Society of Energy Professionals. These investors have evaluated Bruce Power as an entity worth investment.
Q9	What is shown on the chart will require enormous amounts of capital. Do you have sufficient investment capacity?
A9	The Project would require approximately $18 billion. If we can perform on time and on budget, then there should be no problem maximizing return on capital, even though a large amount of capital is required. Access to capital depends on risk, and because of Bruce Power's proven track record, this should not be a problem. Assurance comes from Bruce Power being on time, on budget and delivering projects such as the Units 3 and 4 restart and the Bruce A refurbishment.
Transmission	
Q10	How will you get power off of the site? Is transmission capacity a bottleneck to get power to the end user?
A10	Bruce Power's current plan is not to exceed the current site output of 6,200 MW, consistent with the Minister's directive in June, 2006. As part of the Bruce A Restart Implementation Agreement, the province, through Hydro One, has committed to ensuring that there is adequate transmission for eight units of operation, or 6,200 MW. Under current conditions the transmission facilities servicing the Bruce Power site do not have the capacity to distribute the full electrical output of all eight existing reactors. Historically, there has not been a period when all eight reactors were operating at the same time, thus transmission constraints have not been an issue. Regardless of any decision on New Build, upgrades to the transmission facility are required. As part of the contract that Bruce Power has with the government for the refurbishment of Units 1 and 2, the government has committed to addressing transmission issues so that all existing eight reactors can operate at full capacity. Bruce Power predicts that even given the upgrades for the operation of eight units there will eventually be transmission limitations. Bruce Power would prefer that future upgrades take into consideration long-term planning needs, and that a single upgrade be sufficient to accommodate future production capacity at the Bruce Power site (for example, the upgrade might consider converting the lines to direct current). Ultimately, the decisions regarding transmission are the responsibility of the government and the Ontario Power Authority.
Q11	Do you have assurance that the government will have increased transmission in place by the critical date?
A11	As part of the contract that Bruce Power has with the government for the refurbishment of Units 1 and 2, the government has committed to addressing transmission issues so that at least the existing

	eight reactors can operate. Upgrades are expected to be undertaken in two stages to occur in approximately 2009 and 2011.
Q12	Would transmission upgrades include new towers or upgrades to existing towers?
A12	Transmission upgrades may include both new and refurbished towers. The existing link to Barrie may be upgraded, for example. Transmission upgrades and related issues could be examined through a separate EA process but will also be considered as part of the New Build Project.
Q13	If an increase in transmission lines is required, will this require a completely new corridor?
A13	There are a number of potential situations for increased transmission, and the answer to this question depends on which option is chosen. It is the responsibility of the Ontario government, and the Ontario Power Authority and Hydro One to evaluate and address transmission needs. Depending on the type of upgrades, an environmental assessment and regulatory approvals may be required. It is likely that using existing corridors would be favoured. Some of the options that could be considered in upgrading the existing corridors to accommodate the output from the eight existing reactors might include improvements to existing lines and towers. Conversion of the lines to direct current (DC) may be able to accommodate output from additional reactors. Hydro One is the owner of all transmission assets and will have to undertake a separate assessment to understand what is required to implement the directive they have been given by the government. As part of that assessment, the need or scope of an EA may be part of Hydro One's considerations.
Q14	What's the relative cost of transmission?
A14	Transmission accounts for a small fraction of the overall cost to provide the output of electricity. Regardless of the scenario, Ontario needs increased transmission to meet increased demand. Existing rights of way will likely be considered where feasible.
Government Planning	
Q15	What is the latest government plan for shutting down coal and how does it impact your options?
A15	The government has indicated that it plans to replace coal-fired generation in Ontario, but will not jeopardize Ontario's reliability of supply. In order to maintain the electricity supply, the government has requested that the Ontario Power Authority identify how to replace the 7500 MW that are currently produced by coal-fired generating stations. Alternative sources of energy are being considered, including renewables and gas-fired facilities. These alternatives have pros and cons that should be carefully evaluated. For example, wind power is considered unreliable in winter and natural gas prices may become unpredictable. Bruce Power believes that nuclear, as a generator of emissions free electricity, will continue to be seen as a good choice to maintain electricity supply and/or offset emissions from coal.
Q16	What if the government makes a decision for new build at Darlington? Will Bruce Power make a bid to operate those new reactors?
A16	Bruce Power is one of two major nuclear power generating station operators in Ontario. The company is willing to consider applying their expertise anywhere, anytime and will not exclude the consideration of any options. Bruce Power is confident that they will be able to make New Build work.

Q17	Are there restrictions that the provincial government can/will place on Bruce Power since it is a private company?
A17	The provincial government has to carefully consider what is in the best interest of the people of Ontario and its investment plans. Constructive dialogue between the government of Ontario and Bruce Power will ensure a mutually beneficial outcome.
Q18	Could Bruce Power be a direct exporter of electricity out of the province?
A18	Yes; however, this would require an export licence and an agreement from the government. The focus at present is on Ontario because the Province of Ontario requires increased electricity supply. Bruce Power must first evaluate the markets before considering exporting electricity.
Environmental Assessment	
Q19	Will the environmental assessment deal with the possible risk of terrorism?
A19	The environmental assessment will look at extreme events that are credible over the life of the facility.
Q20	What aspects of the environment will the EA address?
A20	Under the *Canadian Environmental Assessment Act* (CEAA), Bruce Power must consider those aspects of the biophysical and human environments that may be affected by the Project, including the atmosphere; surface and ground water; radiation and radioactivity; aquatic biology; terrestrial biology; geology, hydrogeology and seismicity; land resources; socio-economics; and culture, heritage, and Aboriginal interests. The detailed requirements for the EA will be set by the Canadian Nuclear Safety Commission and/or other government agencies with responsibilities for the EA
Conservation and Renewable Energy	
Q21	What about hydrogen production? What will it take to make it a cost-effective option?
A21	Bruce Power hopes to make an announcement in the not-too-distant future regarding potential hydrogen fuel production. The synergy between nuclear power and hydrogen fuel is strong and both energy sources are emission free. As well, nuclear reactors generate electricity at a relatively flat rate, but demand has daily and seasonal peaks and troughs. At off-peak times, such as at night, a portion of the output that is not consumed could be stored, using it to produce and store hydrogen as fuel for use in transportation applications. Bruce Power hopes to demonstrate this technology by first using hydrogen fuel in vehicles on the Bruce Power site. In addition, new reactors could be built to produce and store hydrogen directly. Bruce Power wants to be an innovator of technologies that will lessen our dependence on coal and gas. We are taking the first steps required to make hydrogen technology a reality.
Q21	Can hydrogen be used to store electricity to solve the transmission bottleneck issue?
A21	There is a range of options for hydrogen, but there is not necessarily a link between hydrogen and the transmission issue. There is an obvious synergy between hydrogen and nuclear, because both are emission free, and hydrogen can be produced by nuclear power at times when demand is off-peak. However, hydrogen is essentially a means of storing energy and may be best suited for use in transportation applications.
Q21	What is your opinion on the role of supply from renewable energy sources in the context of future

	demand?
A21	Currently, coal comprises 25% of the energy mix. The provincial government's opinion is that the supply should be made up of 40% nuclear and 10% renewable, and so on. The government wants to eliminate coal from the supply mix. The Ontario Power Authority is expected to announce its plan for replacement. Obtaining 10% of the province's energy from renewable sources is very aggressive, and conserving 6000 MW through conservation strategies is also very aggressive. Nuclear may be required to take on a larger role than at present. Canada consumes more energy per capita than anywhere else in the world, so there ought to be room for conservation.
Q22	What is Bruce Power's role in conservation and renewable energy sources?
A22	Bruce Power currently operates a wind farm and is exploring the possible production and use of hydrogen for transportation applications. Bruce Power wants to be a leader in the hydrogen economy, helping break society's dependence on oil and gas. The synergy between nuclear and hydrogen is strong because they are both emissions free, and hydrogen fuel may be a way of harnessing that portion of the electricity produced at times when demand is off-peak and some energy is typically lost (i.e., at night when there is less demand). New reactor designs may be more compatible with hydrogen fuel production.
Waste Management	
Q23	What is the solution to the long-term management of spent fuel and other radioactive wastes?
A23	The Nuclear Waste Management Organization (NWMO) is responsible for the long-term management of Canada's nuclear waste, including spent fuel from nuclear power generation. The NWMO was established by an act of parliament and is fully funded by the waste owners. This will be done in a way that is socially acceptable, technically sound, environmentally responsible and economically feasible. Spent nuclear fuel must be managed for tens of thousands of years. Fuel is tracked from the time it is produced to the time that it is installed and then removed from the reactor, and ultimately where it is stored as used fuel. Because spent fuel may still be a useful resource for the future, it may be desirable to store it so it could be recoverable later. The NWMO has been established to find a solution to managing Canada's used nuclear fuel and funding has been established to support the NWMO and manage the financing of the long term management of the used fuel. Currently, used fuel is stored in the irradiated fuel bays at the power stations for a period of at least 10 years before it is packaged for dry storage and transferred to OPG's WWMF on the Bruce Power site. Once established, used fuel will be relocated and managed at the NWMO facility.
Q24	Is there less fuel with the new reactor designs?
A24	The enriched uranium fuel to be used in the new reactor designs is more efficient than natural uranium, therefore more power can be derived from less fuel. In addition, the different shape and orientation of the fuel contributes to higher efficiency in the new reactor designs.
Workforce and Training	
Q25	As part of doing the ramp-up to 9600 MW production did you consider workforce projections?
A25	Yes. Staffing requirements will be investigated - a new workforce will be required. Significant training will be required to accommodate new technologies. The demographics of the current workforce means many people will be retiring between now and when a new plant is approved and constructed. It will be necessary to invest in training new workers regardless what reactor design is selected. The EA process will carefully evaluate the overall effect that a New Build would have on worker resources.

Q26	Does the maximum workforce required for the refurbishment of Units A and B overlap with the New Build Project?
A26	Staffing requirements will likely be different for construction versus operations, and construction will have ended when operations begin. Nonetheless, staffing will be a challenge.
Q29	There has been some real success with the Training Centre at the Bruce Power site; however its capacity has almost been reached. Will there be investment in Port Elgin and other surrounding communities for training?
A29	Bruce Power will continue to be proactive in its approach to training opportunities, but doesn't want to over-commit prior to making a decision. Plans are being devised and announcements are forthcoming to address training challenges.
Miscellaneous	
Q30	Does Bruce Power still sell steam?
A30	Yes; however, this steam is presently generated by a dedicated oil fired steam plant, not from the nuclear reactors. Waste or spare steam is no longer generated by the reactors.

Additional media coverage related to round one of public Open Houses included the articles attached as Appendix B3 to this report.

4.0 PUBLIC FEEDBACK

Open House participants were asked to complete a comment sheet and either deposit it in a box prior to leaving the Open House, or subsequently mail or fax it to Bruce Power. A total of nine participants completed comment sheets were received. Comments received are listed in Table 4-1. Some respondents provided more or less than one answer per question, so the number of responses are not equal among categories. These comments have been included in the EA comment tracking database and will be considered in the EA studies.

Table 4-1: Summary of Comment Sheet Responses

Question 1. How did you learn about the Open House?	**Number of Responses**
Newspaper	4
Radio	3
Mailing	2
Other	2
Question 2. Did you get the information you required?	**Number of Responses**
Yes	9
No	0
Question 3. Were the Bruce Power staff and consultants helpful?	**Number of Responses**

Yes	9
No	0
Question 4. Do you have any additional comments about Bruce Power's proposed new build?	**Number of Responses**
No	3
Is good for the community. I look forward to assisting in educating people with regard to this project. Please let me know how I can assist in engaging the community to proactively be involved.	1
Good Luck – Needed!	1
Will need this power in the future	1
Although low turnout - very helpful communication	1
Question 5. Would you like to be added to our mailing list and receive project updates?	
Yes (provided contact information and preferred method)	6

5.0 NEXT STEPS

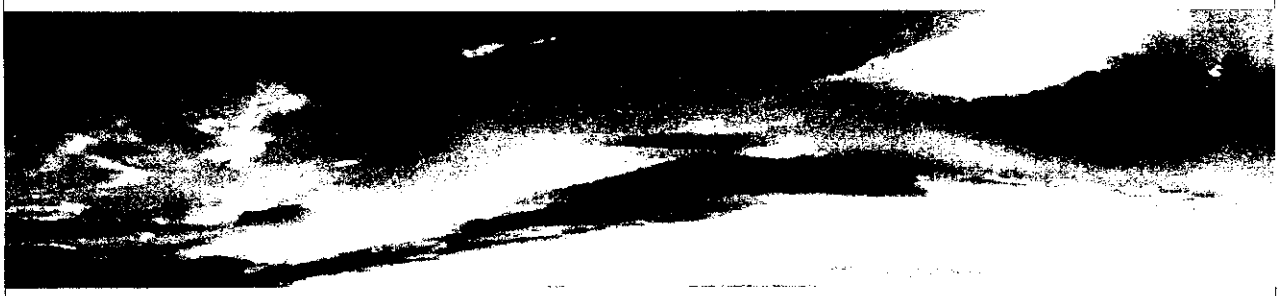
- This Round One Open House Report will be made available to the public at the library repositories, on the project website (www.brucepower.com) and upon request;
- The comments received are being carefully considered by the EA study team and used to inform the EA planning process;
- Future Open Houses, Workshops and other activities will be advertised in newspapers, radio, mailings, media releases, and on the Bruce Power website.
- For more information or to provide comments please contact us at:

Bruce Power New Build Project
Bruce Power, B32
P.O. Box 1540, Tiverton, ON N0G 2T0Telephone: 1-877-748-4787
Web site: www.brucepower.com
Email: info@brucepower.com

APPENDIX A
OPEN HOUSE INVITATIONS AND NOTIFICATIONS

APPENDIX A1
NEWSPAPER ADVERTISEMENTS

Bruce Power™



Bridging the generation gap

At Bruce Power, we want to bridge the generation gap.

We want to shrink the ever-growing divide between how much electricity Ontario needs and how much power it can generate.

That is why we recently launched a comprehensive study to consider building new reactors at our Bruce County site, which already powers every fifth school, home and hospital in Ontario.

We want to know what you think of our plans. We take great pride in our community and the support we receive from our neighbours, but we don't take it for granted.

That's why I am inviting you to a **Community Open House** at our Visitors' Centre on Concession 4, north of Tiverton on Wednesday, Aug. 30 at 7 p.m. At that time, we will explain what our announcement means and answer any questions you might have. I hope to see you there.

Duncan Hawthorne
President and CEO, Bruce Power

next GENERATION

the **evolution** of **nuclear**

Your voice counts

Community Open House
Wednesday, Aug. 30 at 7 p.m.
Bruce Power Visitors' Centre
Concession 4, north of Tiverton

In September, we will be holding Open Houses in surrounding communities. Please watch and listen for details in local newspapers and radio stations.

If you would like more information, please go to www.brucepower.com and click on the Next Generation icon.

If you have questions or comments, please call 519-361-7777
toll free 1-866-748-4787

or email us at
info@brucepower.com.

Bruce Power™

Bruce Power is looking to help shrink the ever-growing divide between how much electricity Ontario needs and how much power it can generate. That is why we recently launched a comprehensive study to consider whether to refurbish some of our existing units or build new reactors at our Bruce County site. We want to share our plans with you and get your feedback at one of our upcoming Open Houses:

Sept. 14 in **Saugeen Shores** at Lakeshore Recreation, Port Elgin

Sept. 18 in **Owen Sound** at the Owen Sound North Grey Union Public Library

Sept. 19 in **Kincardine** at the Governor's Inn

Sept. 26 in **Brockton** at The Hartley House, Walkerton

All Open Houses run from 6-8 p.m. and will include a presentation by President and CEO, Duncan Hawthorne at 7 p.m.

We hope to see you there.

next GENERATION
the **evolution** of **nuclear**

If you would like more information, visit www.brucepower.com and click on the Next Generation icon.
If you have questions or comments, please call 519-361-7777 toll free 1-866-748-4787
or email us at info@brucepower.com.

Sun Times 6 columns x 140 lines (6.875" x 10")

APPENDIX A2
RADIO ANNOUNCEMENTS

560CFOS Country 93 Mix 106 98 the Beach

CLIENT:		*CO-OP:*		*DATE:*
Bruce Power – Open House 2006				08/24/06
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Prod:
Music: Business-like Bed

BRUCE POWER recently launched a study that will examine its long-term options. This will help the company decide whether it makes economic sense to refurbish existing units when required, replace them with new reactors or augment their output by building a third generating station. Residents are invited to an Open House at the Visitors' Centre, August 30th at 7 p.m. where Duncan Hawthorne, President and CEO, will discuss the company's plans further. A series of Open Houses will also be held in local communities throughout September. For more information, visit BRUCE POWER dot com.

560CFOS Country 93 TODAY'S BEST COUNTRY Mix106 Today's Hits Yesterday's Classics 98 the Beach serving the lighthouse coast

CLIENT:		CO-OP:		DATE:
BRUCE POWER				09/11/06
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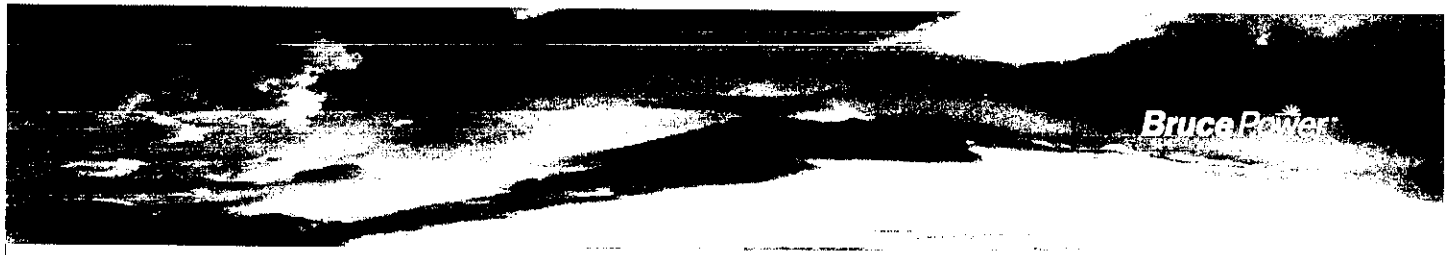
FILE MUSIC

BRUCE POWER RECENTLY LAUNCHED A COMPREHENSIVE STUDY TO CONSIDER WHETHER TO REFURBISH SOME OF ITS EXISTING UNITS OR BUILD NEW REACTORS.
DUNCAN HAWTHORNE, PRESIDENT AND CEO OF BRUCE POWER, WILL DISCUSS THE COMPANY'S PLANS AND SEEK FEEDBACK AT COMMUNITY OPEN HOUSES FROM SEPTEMBER 14TH TO THE 26TH IN SAUGEEN SHORES, OWEN SOUND, KINCARDINE AND BROCKTON. PLEASE CHECK YOUR LOCAL PAPERS FOR MORE INFORMATION ABOUT OPEN HOUSES IN YOUR AREA OR GO ONLINE TO BRUCEPOWER.COM AND CLICK ON THE NEXT GENERATION ICON.

APPENDIX A3
INVITATION CARD MAILINGS



Bridging the generation gap

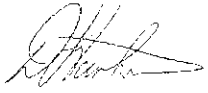
At Bruce Power, we want to bridge the generation gap.

We want to shrink the ever-growing divide between how much electricity Ontario needs and how much power it can generate.

That is why we recently launched a comprehensive study to consider building new reactors at our Bruce County site, which already powers every fifth school, home and hospital in Ontario.

We want to know what you think of our plans. We take great pride in our community and the support we receive from our neighbours, but we don't take it for granted.

That's why I am inviting you to a **Community Open House** at our Visitors' Centre on Concession 4, north of Tiverton on Thursday, Aug. 17 at 7 p.m. At that time, we will explain what our announcement means and answer any questions you might have. I hope to see you there.



Duncan Hawthorne
President and CEO, Bruce Power

new **BUILD**
bridging the generation gap

Bruce Power

Your voice counts

New Build Community Open House
Thursday, Aug. 17 at 7 p.m.
Bruce Power Visitors' Centre
Concession 4, north of Tiverton

Please watch for annoucements about the following planned open houses:

Port Elgin ..... September 14
Kincardine ..... September 19
Walkerton ..... September 20
Owen Sound ..... September 21

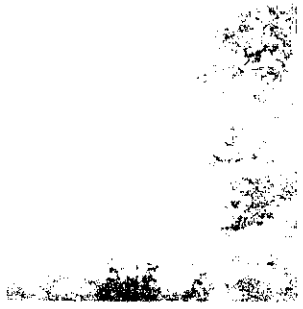
If you would like more information, please go to www.brucepower.com and click on the New Build icon.

If you have questions or comments, please call 519-361-7777
toll free 1-866-748-4787

or email us at info@brucepower.com.

new BUILD
bridging the generation gap

APPENDIX A4
BRUCE POWER WEBPAGES



next GENERATION
the evolution of nuclear

Environmental Assessment

As part of a long-term planning process that began in January of 2004, we have filed an application with the Canadian Nuclear Safety Commission (CNSC) to prepare a site for the potential construction of new reactors at our Bruce County facility.

Our plan considers refurbishing our four Bruce B reactors when needed and potentially building new ones. We have done a lot of analysis work over the last two years, but to better define our options we now have to embark upon a more formal evaluation process.

One of our next steps will be to submit a detailed project description to the CNSC this fall, formally launching an Environmental Assessment that will take approximately three years to complete.

So what's involved?

Earlier this year, the Canadian Nuclear Safety Commission (CNSC) released a document entitled Licensing Process for New Nuclear Power Plants in Canada.

Within its pages, you will learn about the different licences required for the many phases in the life-cycle of a nuclear power plant, the Environmental Assessment process, timeframe considerations and opportunities for the public's involvement in the licensing process.

We're no strangers to the Environmental Assessment process. Already, we have completed successful studies to support our Bruce A restarts and new fuel project.

Once again, we want to know what you think of our plans. We take great pride in our community and the support we receive from our neighbours, but we don't take it for granted.

That's why we held a Community Open House at our Visitors' Centre on Aug. 30 to discuss our plans and hear your ideas.

Throughout September, we will host more public Open Houses in the following locations:

- Sept. 14 in Saugeen Shores at Lakeshore Recreation from 6-8 p.m.
- Sept. 18 in Owen Sound at the Owen Sound North Grey Union Public Library from 6-8 p.m.
- Sept. 19 in Kincardine at the Governor's Inn from 6-8 p.m.
- Sept. 26 in Brockton at The Hartley House 6-8 p.m.

We hope to see you there.

Contact us

Please call:

(519) 361-7777

Toll free:

1-866-748-4787

Click here to email us

Your Voice Counts

If you have questions or comments, please see the contact information at left.

You may also send us your comments using this online form. Note that required fields are marked with an asterisk (*).

Your name:

*

Phone Number:

Email Address:

*

Comment:

*

Please contact me:

via Email

via Telephone

Send

APPENDIX B
OPEN HOUSE INFORMATION MATERIALS

APPENDIX B1
OPEN HOUSE DISPLAY PANELS

Thank you for coming to our Community Open House!

We have invited you here to

- Share our long-term development plans with you
- Give you an opportunity to provide us with your initial input
- Invite you to participate in the environmental assessment process being commenced

new BUILD
bridging the generation gap

Long-Term Plans

- All four Bruce B reactors and one Bruce A reactor (Unit 4) require refurbishment or replacement by ~2017

- Bruce Power is undertaking a multi-year planning process to determine whether to
  - Refurbish existing units
  - Build new units (New Build)
    - Replace existing units with new reactors
    - Augment output by building a third generating station

- We are doing the environmental assessment (EA) and business case analysis for New Build early in our planning process

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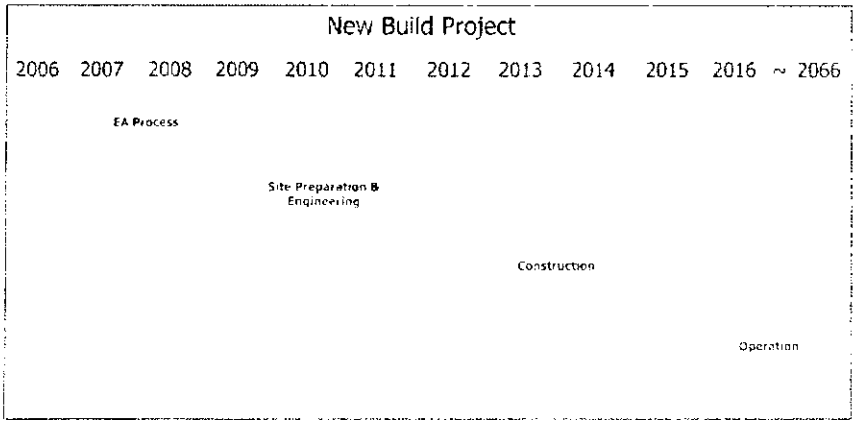
Timeline

Bruce Power

- The Canadian Nuclear Safety Commission (CNSC) will decide on the EA process required to make licencing decisions on the New Build project
- Bruce Power expects to submit a Project Description to the CNSC in Fall 2006
- The EA will to take ~3 years to complete
- Bruce Power proposes to have power to the grid by 2016
- The new reactors would operate for ~60 years



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- Under the *Canadian Environmental Assessment Act* a Comprehensive Study is required

- However, the EA may be 'bumped up' to a panel review if
  - Significant adverse effects are anticipated, or
  - There is significant public concern

- The EA will contribute to key decision making for the New Build project

- Criteria will be developed to assess the alternative means of carrying out the project, including
  - Technical and economic feasibility
  - Environmental and social effects

- For example, the EA will consider and assess
  - Reactor design options
  - Water or air cooling systems
  - Siting options

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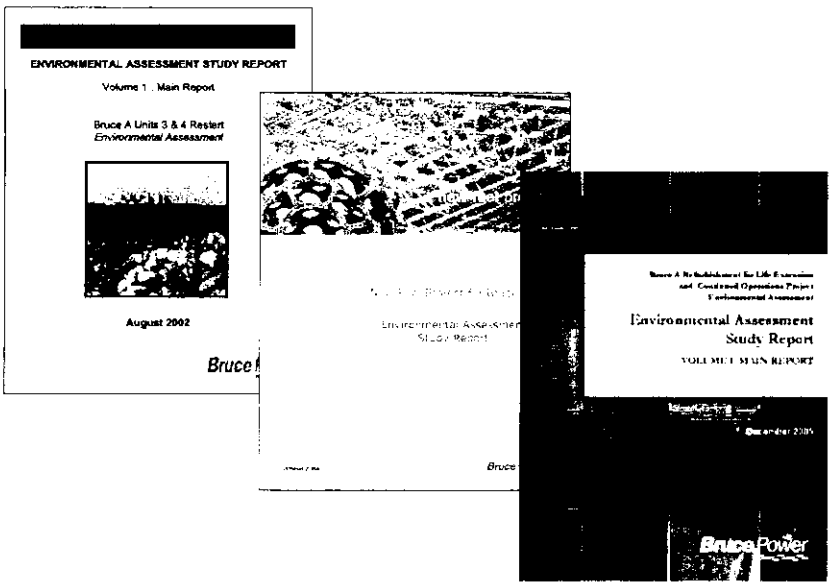
Environmental Assessment Experience

Bruce Power

- The EA for New Build will draw on over 30 years of environmental data that exists for the Bruce site

- The EA will build on recent successful EAs for other Bruce Power projects
  - Bruce A Units 3 and 4 Restart Project (2002)
  - New Fuel Project for Bruce B (2004)
  - Bruce A Refurbishment for Life Extension and Continued Operations Project (2005)



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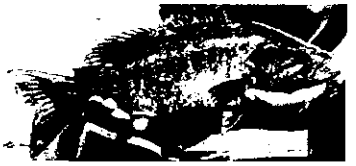
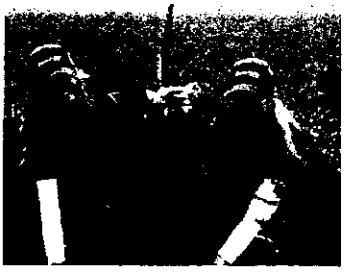
Factors Considered in Environmental Assessment

Bruce Power

- The EA will consider four project phases
  - Site preparation
  - Construction
  - Operation and maintenance
  - Decommissioning

- The EA will consider a number of factors
  - Environmental effects, including
    - Malfunctions or accidents
    - Cumulative effects
  - Significance of identified effects
  - Input from public
  - Technically and economically feasible measures to mitigate effects
  - Purpose of the project
  - Alternative means of carrying out the project
  - Need for follow-up
  - Capacity of project-affected renewable resources to meet the needs of present and future





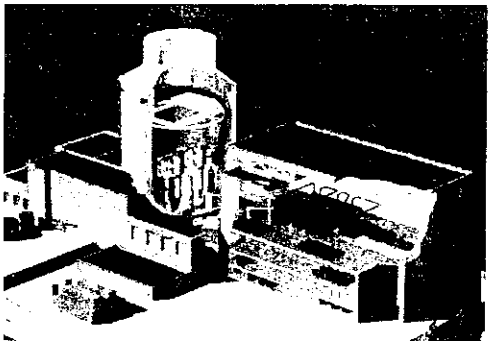
Reactor Design Options

Bruce Power

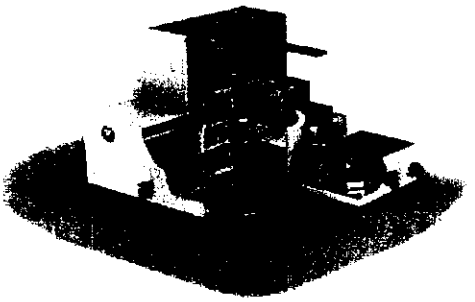
- Four next generation reactor designs, known as Generation III, are being considered
  - Atomic Energy of Canada Limited's Advanced CANDU Reactor (ACR-1000)
  - Westinghouse's AP1000
  - Areva's European Pressurized Reactor (EPR)
  - General Electric's Economic Simplified Boiling Water Reactor (ESBWR)

ACR-1000

EPR



AP1000



ESBWR

- The EA will also examine Atomic Energy of Canada Limited's existing CANDU 6 Reactor

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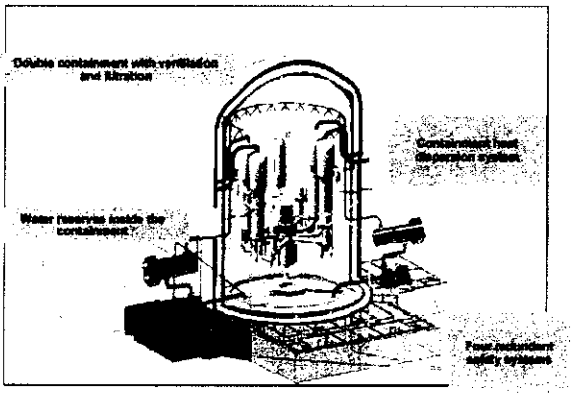
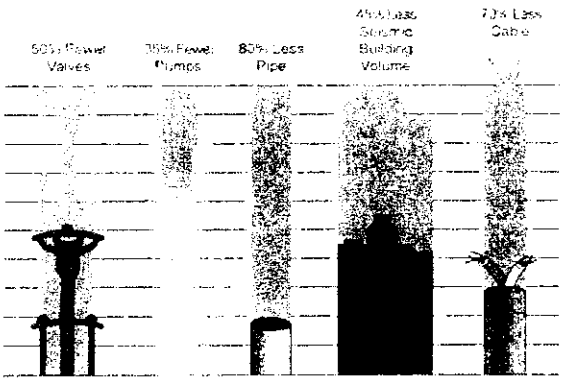
Generation III Reactors

- Generation III reactors are safer, more efficient and easier to build
  - "Passive" safety features substitute natural forces (e.g., gravity to deliver cooling water to the reactor)
  - Operate with a capacity of 90% over a lifetime of 60 years
  - Employ standardized modular components, simpler construction methods and lessons learned from international projects



Safety Features of the EPR



AP1000's Reduction of Components Due to Passive Safety Systems

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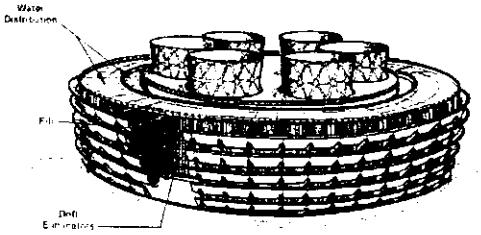
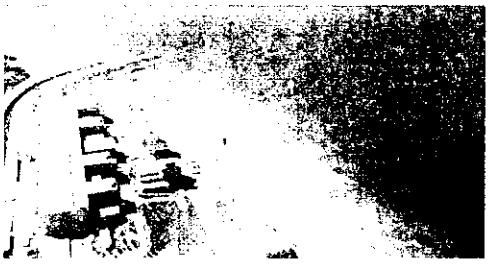
Cooling Options

Bruce Power

- Two cooling system technologies are being considered
  - Mechanical draft cooling towers
  - Once-through cooling water system
- Mechanical draft cooling towers
  - Use large fans to force air through circulated water
  - Water falls downward over fill surfaces to increase contact time between water and air to maximize heat transfer



- Once-through cooling water system
  - Open loop system draws lake water through an intake tunnel, returning it via a discharge tunnel and diffuser to dissipate heat and velocity
  - Bruce A and Bruce B use once-through cooling water systems



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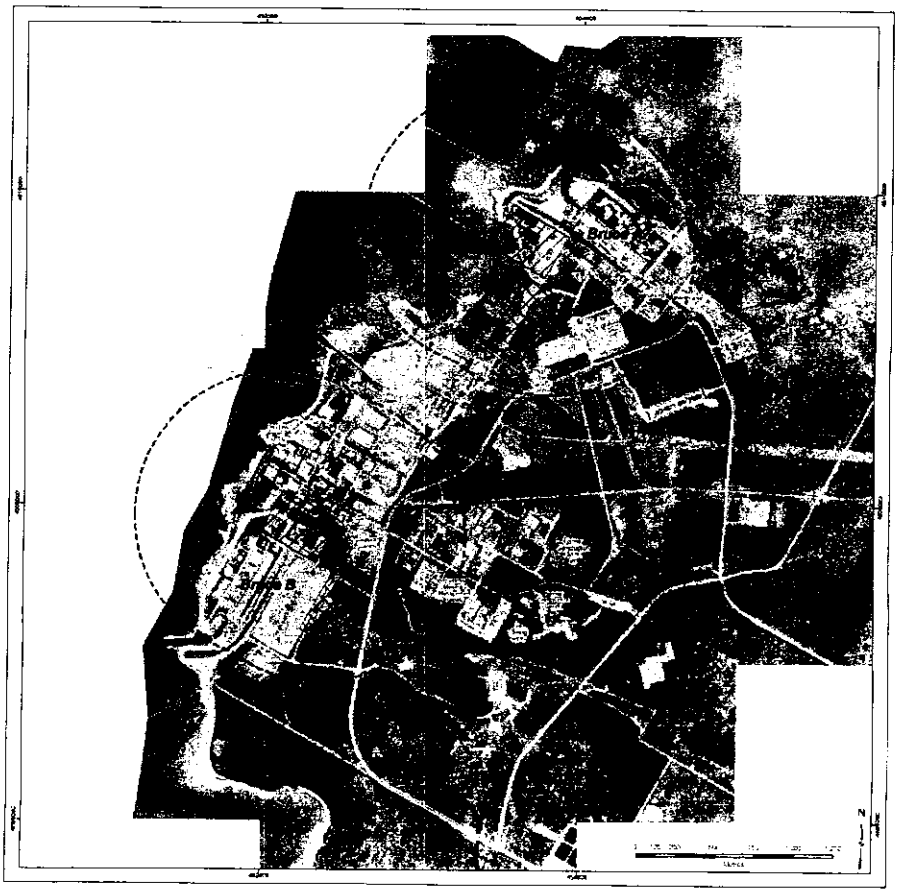
Siting Options

Bruce Power

- The New Build proposal is consistent with the province's stated preference that new reactors be built on existing sites
- Siting constraints on Bruce site will be evaluated
- Potential locations on Bruce site will be identified
  - Two sites are currently identified
  - The EA may also identify other sites



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Consultation

- The following activities will be facilitated by Bruce Power to provide you with information and hear your input
  - Open Houses
  - Workshops
  - Newsletters
  - Briefings
  - Website
  - Library repositories

- Please watch for dates and locations in
  - Community mailings; and
  - Newspaper advertisements

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If you would like to receive additional information about Bruce Power's proposed New Build project, please fill out a comment form with your name and address

or

Contact us at

Bruce New Build Project
Bruce Power, B32
P.O. Box 1540, Tiverton, ON
N0G 2T0

Telephone: 1-877-748-4787
Web site: www.brucepower.com
Email: info@brucepower.com

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APPENDIX B2
OPEN HOUSE HANDOUTS

Types of Environmental Assessment

The Act describes different types of environmental assessment that may be required: screenings (including class screenings), comprehensive studies, mediations and review panels.

Screening

What is a screening?

A screening is a systematic approach to documenting the environmental effects of a proposed project and determining the need to eliminate or minimize (mitigate) the adverse effects, to modify the project plan or to recommend further assessment through mediation or an assessment by a review panel. The responsible authority must ensure that the screening of the project is carried out.

Screenings will vary in time, length and depth of analysis, depending on the circumstances of the proposed project, the existing environment, and the likely environmental effects. Some screenings may require only a brief analysis of the available information and a brief report; others may need new background studies and will be more thorough and rigorous.

The responsible authority must prepare or ensure the preparation of a report which summarizes the findings of the screening.

What happens after a screening?

A responsible authority must determine the significance of the environmental effects of the project. This in turn governs whether the responsible authority can take action that will enable the project to proceed (i.e., whether to proceed with the project itself when it is the proponent, or otherwise to provide the funding, land, permit or other authorization).

If the screening has identified the need for further review, the responsible authority must ask the Minister of the Environment to refer the project to a mediator or a review panel.

Further review is necessary when:

- it is uncertain whether the project is likely to cause significant adverse environmental effects
- the project is likely to cause significant adverse environmental effects and it is uncertain whether these effects are justified in the circumstances
- public concerns warrant it

However, the responsible authority cannot take any **action that enables the project to proceed**, if the project is likely to cause significant adverse environmental effects (taking into account any appropriate mitigation measures) that cannot be justified in the circumstances.

How can I get involved in a screening?

If you are interested in a project in your area, consult the Canadian Environmental Assessment Registry to determine if an environmental assessment is underway.

Public involvement in a screening is at the discretion of the responsible authority and depends on factors such as the nature of the project, its environmental setting and public concerns.

If the responsible authority decides to solicit public input as part of the environmental assessment, this input will be taken into consideration when the responsible authority decides the next step in the environmental assessment process. Where the responsible authority has determined that public participation is appropriate, it must provide an opportunity for the public to examine and comment on the screening report.

Class Screening

What is a class screening?

The class screening is a special type of screening that can help streamline the environmental assessment of certain types of projects.

The Agency has determined that these types of projects are not likely to cause significant adverse environmental effects, providing that the design standards and mitigation measures described in the class screening report are applied.

There are two types of class screenings:

- A **model class screening** provides a two-step environmental assessment of all projects within a class. The responsible authority uses information contained in a model class screening report and prepares individual screening reports for projects within the class to account for location-specific or project-specific information and to record a conclusion on the significance of the environmental effects of that project. A statement of projects to which model class screenings have been applied is maintained on the registry. The Agency declares model class screening reports.
- A **replacement class screening** provides a complete environmental assessment of all projects within a class. It also provides a conclusion on the significance of the environmental effects for all projects within the class. No location-specific or project-specific information is needed, so the responsible authority does not need to prepare project-specific screening reports for projects covered by the replacement class. A statement of projects to which replacement class screenings have been applied is maintained on the registry. The Agency declares replacement class screening reports.

How can I get involved in class screening?

Before a report is declared to be a class screening report by the Canadian Environmental Assessment Agency, the public must be notified and given an opportunity to comment on the class screening report. The Agency must then take the public comments into account in making a decision on the designation.

For information about proposed class screenings, consult the Canadian Environmental Assessment Registry or see proposed Class Screenings.

Comprehensive Study

What is a comprehensive study?

The majority of federal projects are assessed through a screening; however, some projects require a comprehensive study. These projects are described in the *Comprehensive Study List Regulations*. These tend to be large projects having the potential for significant adverse environmental effects. They may also generate public concerns.

Examples of such projects include large-scale oil and natural gas developments, nuclear power developments, electrical-generation projects, industrial plants and certain projects in national parks and others.

Early on in the comprehensive study, the Minister of the Environment has to decide whether the project should continue to be assessed as a comprehensive study, or whether it should be referred to a mediator or review panel. If the Minister decides the project should continue as a comprehensive study, the project can no longer be referred to a mediator or review panel.

What happens after a comprehensive study?

The Minister of the Environment issues an environmental assessment decision statement, which includes the Minister's opinion about the significance of the environmental effects of the project and sets out any mitigation measures or follow-up program the Minister considers appropriate.

The Minister of the Environment also has the power to request additional information or require that public concerns be addressed before issuing the environmental assessment decision statement. Once the environmental assessment decision statement is issued, the Minister refers the project back to the responsible authority for action.

How can I get involved in a comprehensive study?

If you are interested in a project in your area, consult the Canadian Environmental Assessment Registry to determine if an environmental assessment is underway. If so, you may then contact the responsible authority. Explore more information regarding Comprehensive Studies.

The responsible authority must provide opportunities for public participation throughout the comprehensive study. The public has an opportunity to participate in the comprehensive study before the Minister of the Environment makes a decision on whether the project should proceed as a comprehensive study or be referred to a mediator or review panel. This public input must be taken into account by the Minister of the Environment when issuing his/her environmental assessment decision statement.

The public also has an opportunity to review the comprehensive study report before any decisions are made on the project. Funding is available to assist the public to participate in a comprehensive study.

Mediation

What is a mediation?

Mediation is a voluntary process of negotiation in which an independent and impartial mediator helps interested parties resolve their issues. The mediator is appointed by the Minister of the Environment after consulting with the responsible authority and the interested parties.

Mediation can be used to address all issues that arise in a project's environmental assessment or it can be used in combination with an assessment by a review panel. For example, it may support a panel by bringing the parties together to resolve specific questions, such as the determination of the most effective mitigation measures.

Mediation can produce many benefits. It can be sensitive to local concerns and be less costly and time consuming than an assessment by a review panel. Participants may also gain a sense of having contributed to the resolution of a problem.

Mediation is an appropriate option when the interested parties are willing to participate and a consensus seems possible. It is particularly effective where there are only a few interested parties and the issues are limited in scope and number.

What happens after a mediation?

Regardless of whether the mediation successfully resolves the issues under negotiation, the mediator must prepare a report to the responsible authority and the Minister of the Environment, who then makes it public. Once the report has been submitted, the work of the mediator is complete.

The responsible authority must take the mediator's report into consideration before determining the significance of the environmental effects of the project.

How can I get involved in a mediation?

Individuals and organizations having a direct interest in or directly affected by a proposed project would be involved in the mediation. A public information program, in which the general public is kept informed of the progress of talks, would form part of the mediation process.

If mediation does not successfully resolve the issues under negotiation, the Minister can order its conclusion. The mediator will provide the Minister of the Environment and the responsible authority with a report of the results of the mediation. Funding is available to assist the public in participating in an assessment by a mediator.

Review Panel

What is a review panel?

A review panel is a group of experts selected on the basis of their knowledge and expertise and appointed by the Minister of the Environment. The Minister also appoints one of the panel members as chairperson.

A review panel is appointed to review and assess, in an impartial and objective manner, a project with likely adverse environmental effects. A review panel may also be appointed in cases where public concerns warrant it. Such projects may be referred by the responsible authority to the Minister of the Environment for assessment by a review panel. Only the Minister of the Environment may order an assessment by a review panel.

A review panel submits its recommendations to the Minister of the Environment and to the responsible authority.

Review panels have the unique capacity to encourage an open discussion and exchange of views. They also inform and involve large numbers of interested groups and members of the public by allowing individuals to present evidence, concerns and recommendations at public hearings. A panel allows the proponent to present the project to the public and explain the projected environmental effects, and provides opportunities for the public to hear the views of government experts about the project.

What is a joint review panel?

When a project requires a decision from the federal government and another level of government, they may choose to conduct the assessment through a joint review panel to save time and money.

The government has developed harmonization agreements with some provinces to facilitate such reviews.

What happens to a project after an assessment by a review panel?

Once a review panel has completed the public hearings and its analysis, it must prepare an environmental assessment report which summarizes its rationale, conclusions and recommendations, and includes a summary of comments received from the public. This report is submitted to the responsible authority and the Minister of the Environment who then makes it public.

The responsible authority must take the review panel's report into consideration before making any decision with regard to the project. It must also respond to the report, with the approval of Cabinet.

How can I get involved in a review panel?

In assessments by review panels, members of the public may participate in scoping meetings to identify issues that need to be addressed. There are also opportunities later in the process to appear before the review panel in public hearings to present evidence, concerns and recommendations. Find out more about funding to assist the public in participating in an assessment by a review panel. Consult the Canadian Environmental Assessment Registry or read more at Review Panels..

If the Minister of the Environment receives a petition from individuals or interested parties requesting a project to be referred to a mediator or review panel and the Minister considers the project has the potential to cause significant adverse environmental effects across boundaries between non-federal and federal lands, or across provincial or international boundaries, then the Minister has the authority to require an assessment of the transboundary effects in some circumstances.

General Electric – ESBWR

In 1992, GE began to design a natural circulation, boiling water reactor (BWR) featuring passive safety systems. This effort produced a 670 MWe reactor known as the Simplified BWR (SBWR). The development program was later re-directed to design a larger reactor that used economies of scale, proven technology, and components from the Advanced BWR (ABWR) to create a new reactor at reduced capital cost. The new advanced reactor is known as the Economic Simplified BWR (ESBWR).

Electric Output: 1,560 MWe

Reactor Power: 4,500 MWt

Fuel Type: GE14 (10x10 fuel assembly)

Design Life: 60 years

Design Certification: Pre-application review is on-going. Application is anticipated in mid-2005. Certification is anticipated 43 months thereafter.

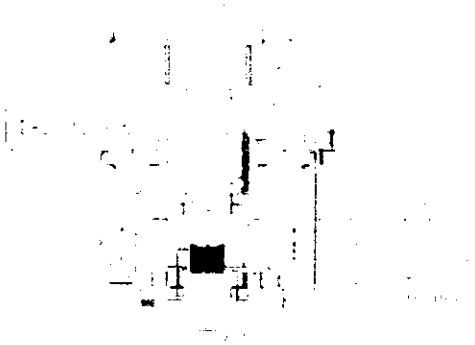
Overnight Cost Cost: $1,160-1,250 kWe (vendor estimate for the power block)

Description: The ESBWR plant design relies on the use of natural circulation and passive safety features to enhance the plant performance and simplify the design. The use of natural circulation allows the elimination of several systems. The ESBWR utilizes the isolation condenser system for high pressure inventory control and decay heat removal. After initiation of the automatic depressurization system, low pressure inventory control is provided by the gravity driven cooling system. Containment cooling is provided by the Passive Containment Cooling System (PCCS). The primary intent of the ESBWR is to significantly reduce both capital and O&M costs of the earlier SBWR and ABWR plants.

Construction Methods/Schedule: The ESBWR will rely on ABWR construction techniques, primarily the use of open top modular construction. A construction schedule of 45 months from first concrete to commercial operation is anticipated for the first-of-a-kind unit (vendor estimate).

Challenges to Building
Degree of Technical Maturity: There is high confidence in the design because it uses standard, proven equipment including extensive use of ABWR components and fully tested passive safety features from the SBWR. Testing was performed to verify natural circulation and the use of several components in new applications.

First of a Kind Engineering (FOAKE): Major remaining FOAKE items include (1) performing the safety analysis (and obtaining NRC approval for the AOO and ATWS computer analyses) and (2) qualifying digital instrumentation (detailed design and testing of plant controls and safety systems,



At a Glance – Advanced Design Features

- Passive safety systems
- Simplified plant design
- Natural circulation replaces recirculation pumps
- Incorporates ABWR technology
- Modular construction
- Reduction in number of plant systems/building volumes
- Reduction in operator actions

designing an all-digital control room and simulator, and implementing the NRC human factors requirements).

Equipment Supply: This design relies heavily on the same basic components as the ABWR, which has been installed previously. Vendors are available to furnish the necessary equipment to support the design.

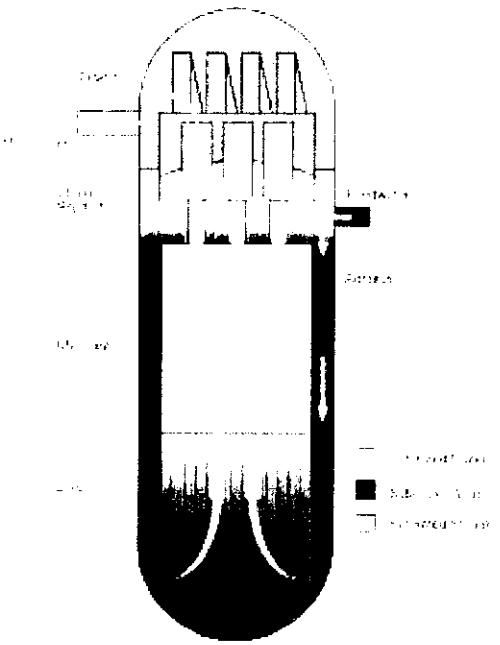
Challenges to Combined Construction and Operating License (COL):
Detailed integrated plant design including system and structural design, and site-specific items will be deferred to the COL stage.

General Electric Qualifications: General Electric has significant experience in the design, construction, and fabrication of nuclear components. GE has been involved in the construction of 64 BWRs. There are currently 54 GE BWRs operating worldwide.

Simplified Plant Design: The ESBWR has achieved its basic plant simplification by incorporating innovative adaptations of operating plant systems into the plant design (i.e., combining shutdown cooling and reactor water cleanup systems). The only major new system is the PCCS. The reactor building is reduced in volume. Nearly all safety systems are now located in containment or directly above it. This allows significant reductions in the volume and footprint of other buildings. The ESBWR design benefited greatly by FOAKE performed for the ABWR and the detailed design and testing of the SBWR.

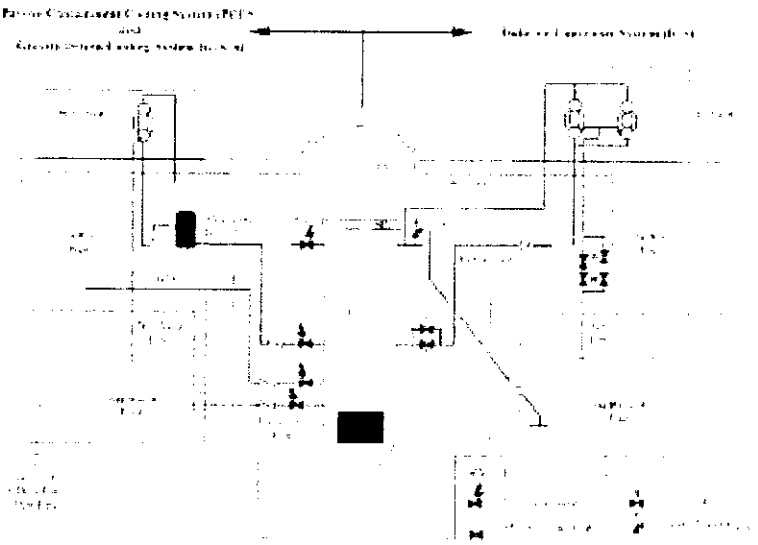
Technology Common to ABWR and ESBWR

- Materials and water chemistry
- Fine motion control rod drives
- Multiplexing and fiber optic data transmission
- Control room design
- Plant layout for ease of maintenance
- Reinforced concrete containment technology
- Pressure suppression horizontal vents
- Passive severe accident mitigation features
- Radwaste technologies
- Computer codes and analytical methods
- Information management technology



Natural circulation is established because of density differences between water in the vessel annulus and the steam/water mixture inside the shroud and chimney. Natural circulation is enhanced by the shorter fuel, 8.6 meter chimney, improved steam separator, and opening the flow path between the downcomer and the lower plenum.

Safety Systems: The safety systems in the ESBWR are passive and include the following:



Automatic Depressurization System (ADS) - The ADS consists of (a) 10 safety relief valves (SRVs) mounted on top of the main steam lines that discharge steam to the suppression pool and (b) 8 depressurization valves (DPVs) that discharge steam to the drywell.

Gravity Driven Cooling System (GDCS) - The makeup water gravity flows into the vessel after the ADS depressurizes the reactor vessel. The GDCS pool capacity is primarily determined by containment geometrical considerations. The GDCS and ADS are the plant's Emergency Core Cooling System (ECCS).

Isolation Condenser System (ICS) - The ICS removes decay heat from the reactor following transient events involving reactor scram including station blackout. The ICS consists of four independent high pressure loops, each containing a heat exchanger that condenses steam on the tube side. The tubes are in a large pool, outside the containment. The system uses natural circulation to remove decay heat.

Passive Containment Cooling System - The PCCS removes heat from inside containment following a loss of-coolant accident (LOCA). The system consists of four safety-related low-pressure loops. Each loop has a heat exchanger open to the containment, a condensate drain line and a vent discharge line submerged in the suppression pool. The four heat exchangers, similar in design to the isolation condensers, are located in cooling pools external to the containment. The PCCS limits containment pressure to < 40 psig.

General Electric – ESBWR

Parameter	Value
Plant Life (years)	60
Thermal Power	4,500 MW
Electrical Power	1,560 MW
Plant Efficiency	34.7 %
Reactor Type	Boiling Water Reactor
Core	
Fuel Type	Enriched UO_2
Fuel Enrichment	4.2% [3]
No. of Fuel Bundles	1,132
Coolant	light water
Moderator	light water
Operating Cycle Length[1]	12-24 months
Outage Duration[2]	~14 days
Percent fuel replaced at refueling	See footnote 4
Average fuel burnup at discharge	~50,000 MWd/MT
Number of Steam Lines	4
Number of Feedwater Trains	2
Containment Parameters	
Design Temperature	340°F
Design Pressure	45 psig
Reactor Parameters	
Design Temperature	575°F
Operating Temperature	550°F
Design Pressure	1,250 psig
Nominal Operating Pressure	1,040 psia
Feedwater & Turbine Parameters	
Turbine Inlet/Outlet Temperature	543/93°F
Turbine Inlet/Outlet Pressure	985/0.8 psia
Feedwater Temperature	420°F
Feedwater Pressure	1,050 psia
Feedwater Flow	4.55×10^4 gpm
Steam mass flow rate	19.31×10^6 lbs/hr
Yearly Waste Generated	
High Level (spent fuel)	50 metric tons
Intermediate Level (spent resins, filters, etc.) and Low Level (compactables/non-compactables) Waste	1,765 cubic feet

[1] Days of operation between outages

[2] For refueling only

[3] For a 24 month cycle

[4] 20% for a 12 month cycle, 42% for a 24 month cycle

ACR-1000®: THE ADVANCED CANDU REACTOR®

AECL

The ACR-1000 is economically competitive or superior to all other forms of nuclear generation, and gas or coal power generation.

EVOLUTION:

AECL has capitalized on the proven features of CANDU® technology in designing the evolutionary Advanced CANDU Reactor the ACR-1000. The ACR-1000 is designed to be cost competitive, while achieving higher safety and performance standards in meeting customer expectations.

The ACR-1000 has a gross electrical output of approximately 1200 MWe to best meet utility production requirements, consistent with typical grid capacity.

PROVEN CANDU FEATURES:

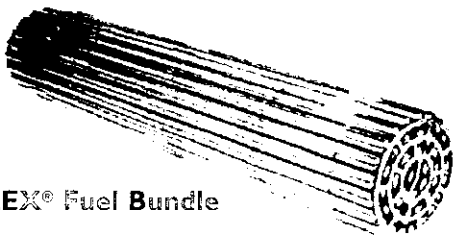
Heavy water moderator, horizontal fuel channel design and on-power fuelling.

:: Simple fuel design – easy to handle and manufacture

:: Low-pressure heavy water moderator – inherent passive core cooling capability

:: Series of parallel pressure tubes rather than single pressure vessel – modular, easy and economical to manufacture, and replaceable

:: Two independent, fast-acting safety shutdown systems and a unique inherent emergency-cooling capability



CANFLEX® Fuel Bundle

ACR-1000 INNOVATIONS:

:: Slightly enriched uranium fuel for extended fuel life and reduced spent fuel volume

:: Light-water coolant system

:: Compact, highly stable reactor core design

:: Improved thermal efficiency through optimized, higher-pressure steam turbines

:: Modular, prefabricated structures and systems

:: Advanced construction techniques – successfully used in other CANDU projects

ECONOMICS:

:: Significantly reduced specific capital cost

:: Lifetime capacity factor > 90%

:: Short construction time reduces financing cost and responds to market needs

:: Competitive or more economical than gas or coal power generation

SAFETY:

:: Highly stable reactor core design

:: Passive safety systems

:: Large operating margins

:: Zirconium-alloy pressure tubes minimize corrosion risk

:: Long lead-times for operator intervention

:: Containment barriers meet highest safety standards

AECL

OPERATIONS:

:: Built on the excellent lifetime performance record of CANDU reactors worldwide

:: Enhanced monitoring diagnostics and control capability

:: Integrated plant life management program

:: Maintenance-based design for improved reliability and reduced service frequency

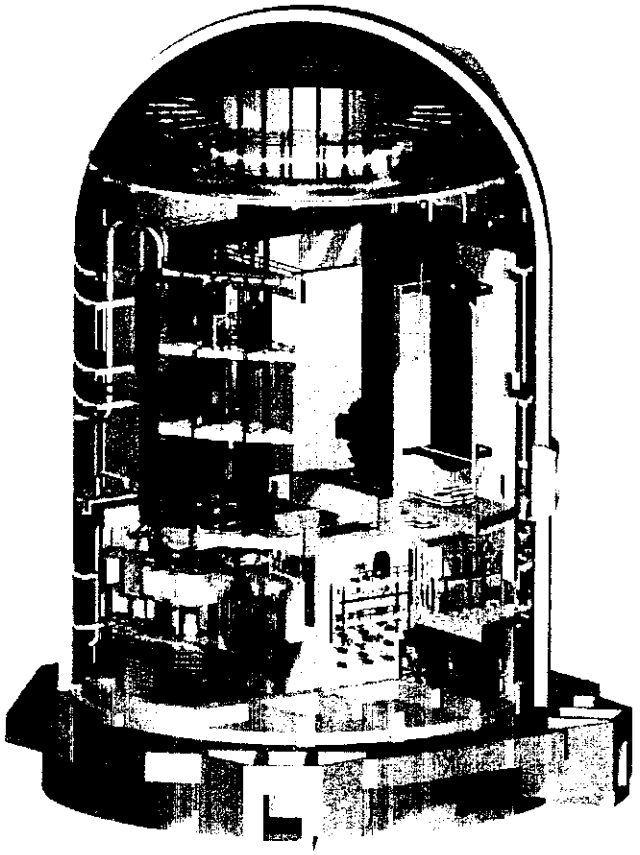
PLANT SECURITY:

:: High-integrity containment

:: Fully redundant secondary control centre

:: Enhanced security systems

:: Incorporates system redundancy, separation of safety systems and reliable safety system actions



Advanced CANDU Reactor Building Cutaway

LICENSING:

:: Current CANDU reactors licensed worldwide

:: ACR-1000 design enhancements further strengthen licensing case

:: Meets Canadian regulatory requirements and applicable international requirements

PROJECT SCHEDULE AND CONSTRUCTION:

:: 42 months from first concrete to fuel loading for the n^{th} unit

:: Innovative use of open-top construction methodology

:: Prefabricated systems lift into place as ready-built modules

:: Builds on experience from recent successful CANDU projects:

:: Wolsong Units 2, 3 and 4 in South Korea (completed 1997, 1998, 1999 on budget, on schedule)

:: Qinshan Units 1 and 2 in China (completed 2002 and 2003 under budget, ahead of schedule)

Westinghouse – AP1000

AP1000 is an advanced reactor incorporating passive safety systems and a simplified plant design.

Electric Output: 1,117 MWe

Reactor Power: 3,400 MWt

Design Life: 60 years

Fuel Type: 4.95% enriched UO_2

Design Certification: The NRC accepted the AP1000 application for review in May 2002. A draft Safety Evaluation Report (SER) was issued in June 2003. Final Design Approval (FDA) was issued in September 2004. The Design Certification Rulemaking is scheduled for December 2005.

Overnight Capital Cost: $1,000-$1,100 per kWe for a twin-unit plant, after the first several AP1000 plants have been constructed (vendor estimate).

Description: The AP1000 is a two-loop pressurized water reactor (PWR) with passive safety systems and extensive plant simplifications that improve plant operation and maintenance, while reducing construction cost and schedule. The AP1000 is based on the standardized AP600 plant that received a Design Certification from the NRC in December 1999. The AP1000 was developed in order to reduce capital costs while maintaining the AP600's design configuration and, to the extent possible, the AP600's licensing basis. Changes to the original AP600 design were limited to only those structures, systems, and components affected by the increase in power. The nuclear island footprint remains unchanged; however, the containment height is increased. Proven components are used throughout the plant. The philosophy governing the plant design is identical to the AP600.

Construction Methods/Schedule: The AP1000 uses modular construction techniques. The standard plant is comprised of 50 large and 250 small modules. The small modules are rail-shippable units approximately 12 feet high, 12 feet wide, and 80 feet long, weighing 80 tons. These modules are constructed in parallel and independent of one another at a shipyard-like factory and later assembled onsite. This technique reduces construction costs and schedule because (1) construction activities occur in parallel, rather than sequentially, (2) onsite construction is reduced (shop labor costs are substantially lower than field labor), and (3) shop welding and assembly increases quality of work and flexibility in schedule. The simplified plant design, with its reduced building volumes and fewer components and commodities, also contributes to a short construction schedule. Overall, centralized manufacturing and assembly together with appropriate testing and inspection of the finished modules will shorten the onsite construction schedule.

At a Glance – Advanced Design Features

- Passive Safety Injection
- Passive Residual Heat Removal
- Passive Containment Cooling
- Modular construction
- Several fuel options including mixed oxide (MOX)
- Design based on the certified AP600 plant
- 18 months between refueling
- Simplified design/proven technology

AP1000 SIMPLIFIED DESIGN		
Component	1000 MW Reference PWR	AP1000
Pumps	280	180
Safety Class Valves	2,800	1,400
Safety Class Piping, ft	110,000	19,000
Cable, million ft	9.1	1.2
Seismic Building Volume, million ft^3	12.7	5.6

Westinghouse and its subcontractors have performed construction studies in Japan and the U.S. These studies conclude that site construction can be completed within 36 months, timed from first concrete to fuel load. A 60-month schedule is anticipated from a utility commitment to build to operation (vendor estimate).

Challenges to Combined Construction and Operating License (COL): 166 COL issues, including control room design, were identified in the AP1000 Design Control Document and will have to be addressed in the COL application.

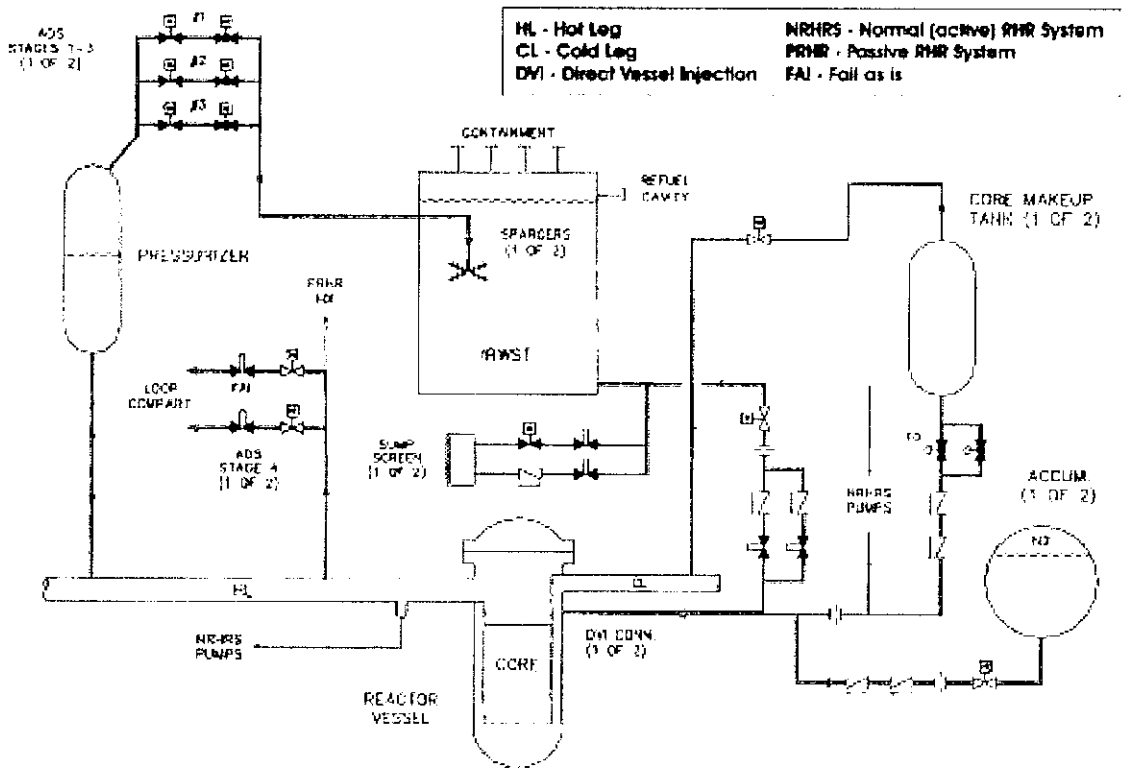
PROVEN TECHNOLOGY IS INCORPORATED INTO THE AP1000	
Component	Prior Use of Technology
Steam Generators	ANO-2, Ulchin 5&6
Digital I&C	Sizewell B, Ulchin 5&6, Temelin
Fuel	South Texas 1&2, Doel 4, Tihange 3
Reactor Coolant Pumps	U.S. nuclear navy
Control Drive Mechanism	Westinghouse plants
Reactor Vessel	Doel 4, Tihange 3
Reactor Internals	Doel 4, Tihange 3

Safety Systems: Safety systems use only natural forces such as gravity, natural circulation, and compressed gas to provide driving forces for the systems that cool the reactor core following an accident. No pumps, fans, chillers, or diesel generators are used in safety systems. A few valves are actuated when safety systems are automatically activated. In most cases, these valves are fail safe, that is, they require power to remain in their normal, closed position. No safety support systems such as ac power, HVAC, or cooling water are necessary. The AP1000's passive safety systems include safety injection (SI), residual heat removal (RHR), and containment cooling (PCCS). All safety systems meet NRC requirements including single failure criteria, TMI-related lessons learned, and unresolved and generic safety issues. A flow diagram and discussion of the SI system is provided in the text box below. The RHR and PCCS have identical features as the corresponding systems for the AP600.

First-of-a-Kind Engineering (FOAKE): Major remaining FOAKE items include (1) the canned motor reactor coolant pumps (detailed design, full-scale prototype testing), (2) the safety system squib valves (detailed design and prototype testing), (3) digital instrumentation (detailed design and testing of plant controls and safety systems, design of an all-digital control room and simulator, and implementation of the NRC human factors requirements) and (4) the completion of the design details sufficient to support construction.

Equipment Suppliers: Westinghouse has maintained working relationships with a number of equipment suppliers to support construction projects in Korea and service businesses globally. Westinghouse has identified vendors and obtained cost quotes as part of its plant cost estimate process.

Westinghouse Qualifications: Many Westinghouse Electric PWRs have been built worldwide—48 PWRs are currently operating in the U.S. Westinghouse Electric forcuses on four business areas—nuclear fuel fabrication, nuclear services, nuclear I&C, and new plant design. Westinghouse Electric is owned by British Nuclear Fuels (BNFL).



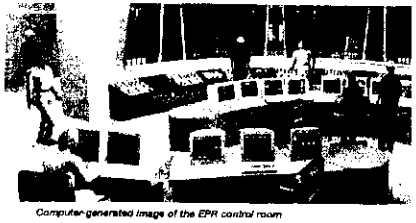
Safety Injection: Incorporates four sources of passive injection following a loss of coolant accident (LOCA): (1) accumulators, which provide high flow for several minutes; (2) core makeup tanks, which provide relatively high flow for longer durations; (3) in-containment refueling water storage tank (IRWST), which provides a lower flow for a much longer time; and (4) provisions for containment recirculation. Containment recirculation initiates when the recirculation line valves open and the flood level is sufficiently high. The IRWST is a low-pressure source that injects only after the reactor coolant system (RCS) is depressurized by the automatic depressurization system (ADS).

For further information, please visit http://www.ap1000.westinghousenuclear.com/

Westinghouse – AP1000

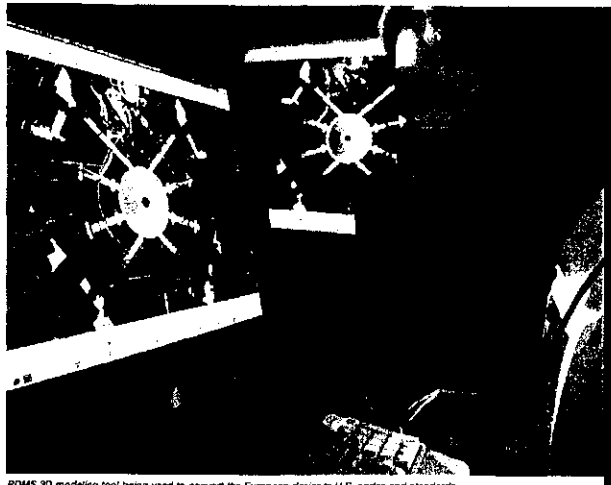
Parameter	Value
Thermal Power	3,400 MWt
Plant Efficiency (gross/net with cooling towers)	35.1% / 32.7%
Core	
Fuel Enrichment	<4.95%
Coolant	light water
Number of Tubes per Steam Generator	10,000
Operating Cycle Length[1]	18 months
Percent fuel replaced at refueling	43%
Containment Parameters	
Design Pressure	59 psig
Design Temperature	650°F
Cold Leg Temperature	537°F
Design Pressure	2,500 psig
Flow Rate/loop	157,500 gpm
Design Temperature	600°F
Main System Design Pressure	1,200 psia
Feedwater Flow	14.97×10^6 lbs/hr
Yearly Waste Generated	
Intermediate Level (spent resins, filters, etc.) and Low Level (compactables/non-compactables) Waste	35 metric tons

[1] Time of operation between refueling
[2] For refueling only



Computer-generated image of the EPR control room

Reactor pressure vessel monobloc upper shell for OL-3 EPR



PDMS 3D modeling tool being used to convert the European design to U.S. codes and standards

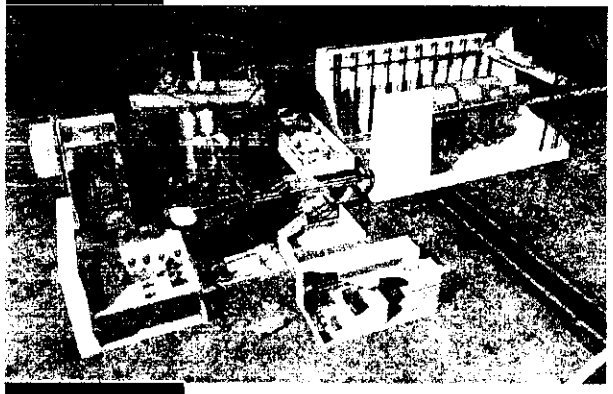
Mature Design From a Proven Supplier

EPR

The EPR is an advanced evolutionary pressurized water reactor (PWR) designed by Framatome ANP (FANP), an AREVA and Siemens company.

Electric Output: 1,600 MWe
Reactor Power: 4,300 to 4,500 MWt
Design Life: 60 years
Fuel Type: Enriched (up to 5%) uranium and/or mixed-oxide (MOX)

Design Life	60 years
Thermal Power	4,300 MW - 4,500 MW
Electrical Power	1,600 MW nominal
Plant Efficiency	38% up to 37%
Reactor Type	Pressurized Water Reactor
Core	
Fuel Type	UO_2 or MOX
Fuel Enrichment	Up to 5%
No. of Fuel Assemblies	241 (17x17 Fuel Assemblies)
Coolant and Moderator	light water
Number of RCS Loops/ Steam Generators	4
Number of Tubes/Steam Generator	5,980
Operating Cycle Length	12-24 months
Outage Duration	16 days (typical)
Average fuel burn up at discharge	> 60,000 MWd/MT
Containment Parameters	
Design Temperature	338°F
Design Pressure	62 psig
Reactor Parameters	
Design Temperature	663°F
Cold Leg Temperature	563°F
Hot Leg Temperature	622°F
Design Pressure	2,535 psig
Nominal Operating Pressure	2,231 psig
Flow Rate/Loop	1.25×10^6 gpm
Secondary System Parameters	
Design Temperature	608°F
Operating Temperature	559°F
Design Pressure	1,435 psig
Operating Pressure	1,104 psig
Feedwater Flow/Loop	4.89 Mlb/hr
Steam Flow Mass/Loop	5.12 Mlb/hr



The EPR is a mature, evolutionary PWR design based on construction and operating experience at existing plants worldwide. Components have been simplified and considerable emphasis placed on reactor safety. The EPR has a familiar four-loop configuration with four reactor coolant pumps and four steam generators. Because the primary system design is similar to the current generation of PWRs, components have a history of proven operation.

The EPR utilizes active front-line safety systems to address anticipated transients and design basis accidents. These systems provide additional margin in EPR safety analyses as well as additional time for operator actions in responding to anticipated plant transients.

Another important safety feature is the EPR design for collecting and cooling corium in the highly unlikely event of a severe accident. Should such an accident occur and the reactor core melt, it is possible that the core could eventually melt through the pressure vessel and migrate into the reactor cavity below the pressure vessel. Melted corium would collect in this cavity, melt through a sacrificial plug and flow by gravity into a corium spreading area in the basement of the containment to be cooled.

Additional safety concepts have been incorporated into the design to improve the EPR's response to emergency conditions and to minimize the probability and consequences of core damage and a release of radioactivity. The reactor containment is designed to confine all solid, liquid, and gaseous products of a damaged core, thereby protecting the external environment.

PLANTS

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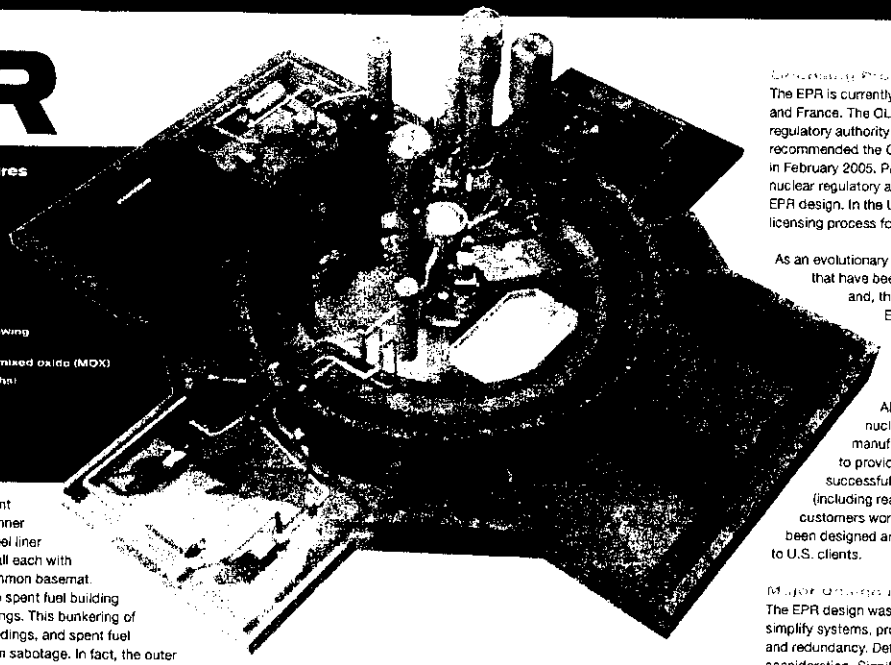
AREVA

EPR



Advanced Design Features

- Simplified plant design
- Increased reliability
- Uses existing technology
- Improved plant efficiency
- Improved safety margins
- Safety train maintenance during full power operation
- Improved plant availability
- Reduced operator actions following accidents and transients
- Several fuel options including mixed oxide (MOX)
- Flexible fuel cycle (12-24 months)
- Increased fuel burn-up
- Reduced rad-waste
- Load-follow capability
- Airplane crash protection

The reactor building and containment consist of two cylindrical walls: an inner prestressed concrete wall with a steel liner and an outer reinforced concrete wall each with a separate dome, and sharing a common basemat. The outer wall also extends over the spent fuel building and two of the four safeguard buildings. This bunkering of the containment, two safeguard buildings, and spent fuel building protects these features from sabotage. In fact, the outer wall can withstand postulated external explosive and impact hazards. The two remaining safeguard buildings are arranged to prevent a single external event from disabling both buildings.

EPR incorporates the following accident prevention features into the plant design: simplification of safety systems, elimination of common mode failures (via physical separation and diversity), increased grace periods prior to operator actions (following plant transients and accidents), and an optimized man-machine interface using digital technology that minimizes human errors.

[illegible]

The overall construction program has two main phases:

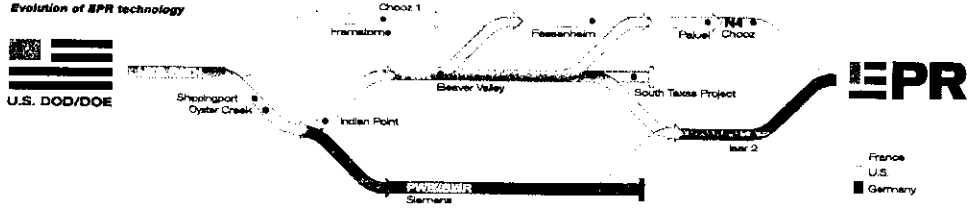
- **Pre-construction–from plant order to construction permit.** The focus is mainly on the procurement of components with long lead times, engineering activities and site preparation. Duration: Approximately 15 months.
- **Plant Completion–construction and start-up through commercial operation.** The focus is procurement of remaining components, civil works, component erection, system functional tests, core loading, and overall start-up testing. Duration: As short as 48 months.

Proven construction methodologies include extensive on-site pre-assembly and construction of modules as well as use of factory-fabricated elements

[illegible]

The plant evolves from the French N4 and German Konvoi plants that have been successfully constructed and operated in Europe. The N4 and Konvoi reactors derive from earlier Framatome and Siemens KWU generation reactors, which are themselves derivative of U.S. type PWRs, first implemented in the U.S. then refined and expanded upon by Framatome and Siemens KWU. In December 2003, FANP was contracted by the Finnish utility TVO to supply an EPR at Olkiluoto (OL-3). This EPR unit is a turnkey plant with FANP supplying the Nuclear Island and Siemens supplying the Turbine Island. It was also announced in October 2004 that France will construct an EPR at its Flamanville site.

Evolution of EPR technology



[illegible]

The EPR is currently undergoing regulatory reviews in Finland and France. The OL-3 PSAR was submitted to the Finnish regulatory authority (STUK) in January 2004 and STUK recommended the OL-3 construction license, which was issued in February 2005. Previously, in September 2004, the French nuclear regulatory authority (ASN) issued its approval of the EPR design. In the U.S., FANP has initiated the 10 CFR Part 52 licensing process for the EPR.

As an evolutionary PWR design, the EPR employs technologies that have been licensed in the U.S. for over four decades and, therefore, represents minimal licensing risk. The EPR characteristics are enveloped by the plant parameters supplied by U.S. utilities as part of recent early site permit applications.

Equipment Supply

AREVA is the world's only vertically integrated nuclear supplier. FANP has heavy component manufacturing capabilities and/or identified suppliers to provide all of the equipment for the EPR. FANP has successfully fabricated and delivered PWR components (including reactor vessels and steam generators) to customers worldwide. Many of these components have been designed and fabricated to U.S. standards and delivered to U.S. clients.

[illegible]

The EPR design was developed using probabilistic evaluations to simplify systems, provide physical separation, functional diversity, and redundancy. Defense-in-depth was another major design consideration. Significant design features include:

- Proven four-loop RCS design
- Double containment
- In-Containment Refueling Water Storage Tank (IRWST)
- RCS Depressurization System
- Advanced control room
- Four emergency diesel generators
- Two smaller station blackout diesel generators
- Load shed to station power capability
- Designed to withstand military or large commercial airplane crash
- Improved plant efficiency
- Control systems provide load follow capability
- Four-train fully redundant safety systems
- Features to control beyond-design-basis accidents
- Suitable for MOX fuel

[illegible]

Major safety systems such as safety injection (SI), emergency feedwater, component cooling and emergency power are arranged in a four-train configuration. These four independent trains of safety systems are housed in separate buildings and designed to preclude common mode failures. Each train is capable of mitigating the effects of any postulated accident. The IRWST provides water to the SI system, which injects water into the RCS cold legs for short-term cooling and into both hot and cold legs for long-term cooling. SI sub-systems are:

- Safety injection via accumulators (four trains, cold-leg injection)
- Medium head injection via SI pumps (four trains, cold-leg injection)
- Low head injection via Residual Heat Removal System (four trains, cold-leg injection)
- Extra Boron System (two trains, injecting 7,000 ppm boric acid)
- IRWST water inventory

EPR construction at Olkiluoto 3 in Finland began in 2004.

[illegible]

Under the names AEG, KWU, Framatome and Siemens, FANP has designed, fabricated components for, and built nearly 100 nuclear power plants since the mid-1950s. Recent highlights include completion of the Angra-2 plant in Brazil in 2000, and four units in China (Daya Bay Units 1 & 2 in 1994 and Ling Ao Units 1 & 2 in 2003). An FANP and Siemens consortium was selected to build an EPR in Finland, currently under construction and scheduled for commercial operation in 2009.