

## Bruce A Refurbishment Project Questions and Answers

**Latest update: April 13, 2005**

Throughout the Bruce A Refurbishment Project environmental assessment (EA) process we have received questions and comments from a variety of sources. The EA Study Report will identify and address these comments and questions, as part of the public consultation process. Below is a compilation of the questions received from community members and interested parties and the answers provided to address those questions. The questions and answers are listed in order of receipt.

If you have a question or comment, please feel free to contact us by email [bruceea@brucepower.com](mailto:bruceea@brucepower.com) or by phone at 1-877-51-BRUCE (1-877-512-7823). You can expect a response within 72 hours.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Kincardine Open House (January 18, 2005)	Is there room at the Western Waste Management Facility (WWMF) for the refurbishment wastes now, or will Bruce Power need to wait for the expansion?	The WWMF is a licensed facility for the storage of nuclear wastes from Ontario nuclear generating stations. The WWMF is planning to build additional storage structures within its licensed boundary to accommodate the waste from the Bruce A Refurbishment Project, along with the wastes from other nuclear generating station refurbishment projects in the future.
Kincardine Open House (January 18, 2005)	How will Bruce Power minimize the amount of contamination released to the environment when the steam generators are removed?	The refurbishment of Bruce A Units 1&2 and the removal of the steam generators will be completely segregated from the ongoing operations of Units 3&4. A contractor will be responsible for the removal of the steam generators. Steam generators have been successfully removed from other nuclear power plants in the United States. The pipes will be cut to separate the generators from the steam drum and all penetrations will be sealed so that the generator will be a self-contained unit when it is removed. The process of removing the steam generators will be similar to that which is carried out for decommissioning purposes.
Kincardine Open House (January 18, 2005)	Will the new fuel bundle proposed use any spent fuel?	No. The new low void reactivity fuel is a moderately redesigned bundle which uses slightly enriched uranium (1% U-235), and a dysprosium neutron absorber. New fuel improves the safety of the reactor while keeping the fuel bundle design as similar as possible to the current fuel bundles. For more information on new fuel, see <a href="http://www.newfuelproject.com">www.newfuelproject.com</a> .
Kincardine Open House (January 18, 2005)	Is a redesign of the fuel bundle being considered so that the burn time would be longer?	No.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Kincardine Open House (January 18, 2005)	Could new nuclear power stations use the spent fuel from a CANDU reactor?	No, this is not currently feasible with a natural uranium fuel bundle.
Kincardine Open House (January 18, 2005)	What will happen to the refurbishment wastes?	The refurbishment wastes are considered low and intermediate level radioactive wastes. These wastes will be accepted by the WWMF under a contractual agreement between Ontario Power Generation (OPG) and Bruce Power. Appropriate handling and transportation methods will be used to transport the waste from Bruce A to the WWMF.
Kincardine Open House (January 18, 2005)	Why is Bruce Power starting the environmental assessment (EA) if negotiations with the province aren't yet complete?	Environmental assessment is a planning tool. By initiating the EA now, it will ensure that if Bruce Power proceeds with the restart of Units 1 and 2 that the critical EA process is underway.
Kincardine Open House (January 18, 2005)	The existing steam drum at Bruce A has a humping problem (due to differential temperatures). Will this be addressed during the refurbishment?	The overall Bruce A unit design will not be changed as a result of the refurbishment. A change in the design of the steam drum would cause a change in operating systems and could make operation of the station more complex. As part of the refurbishment, new design efficiencies were introduced rather than overall design changes.
Kincardine Open House (January 18, 2005)	As part of the refurbishment there will be construction jobs which will need to be contracted out; what special training will be provided regarding the radioactivity of the wastes to prevent unacceptable health risks to the workers?	Four main construction contracts will result from the refurbishment project (reactor refurbishment, steam generator procurement and removal, engine/turbine upgrades and overall project control group). All jobs will have job-specific safety rules, health and safety plans and different associated risks. Bruce Power is proud of their safety record and is committed to maintaining it.
Kincardine Open House (January 18, 2005)	In Germany there is currently a lot of controversy regarding the nuclear industry and the government is phasing out nuclear power. Are the reactors safer here than there?	Nuclear power is being phased out in Germany (and other countries in Europe) for political reasons. Nuclear reactors in Europe are as safe as the reactors in Canada. The government in Germany is decommissioning nuclear power plants in favour of renewable power sources, following a policy decision to phase out nuclear power.
Kincardine Open House (January 18, 2005)	How does Bruce Power plan for the future when the elected government changes every three to five years?	All decisions that Bruce Power makes are based on the electricity marketplace and agreements with respect to pricing and have to be able to withstand a change in government. With respect to municipal politics, Bruce Power is a responsible corporate citizen as is shown by operating safely and regularly communicating with the public.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Saugeen Shores Open House (January 19, 2005)	There seems to be a lot of projects with separate environmental assessments currently under consideration. How do you handle cumulative effects of all of these projects?	Cumulative effects are assessed in the EA using a standard and proven methodology. The methodology first considers direct effects of the project (i.e., from Bruce A). Where there are adverse effects identified, the EA then considers where these effects may overlap in time and space with effects from other projects. Canadian Nuclear Safety Commission (CNSC) staff review the list of other projects to ensure it is thorough and inclusive.
Saugeen Shores Open House (January 19, 2005)	If Bruce A is refurbished, at the end of 2043 is that the end of the reactor life, or can it be refurbished indefinitely?	To determine the reactor life, the replaceable and life-limiting components must be identified. Any decision would require detailed technical and economic feasibility studies at that time.
Saugeen Shores Open House (January 19, 2005)	The Nuclear Waste Management Organization (NWMO) project (to determine a long-term solution for the disposal of used fuel) seems to scare the public the most. Does this mean that Bruce is a potential site?	The NWMO is mandated by the federal government to assess the options for the long-term management of used nuclear fuel waste. The NWMO is currently undergoing an extensive comparative evaluation of long-term management solutions and is to report back to the federal government in November 2005 with a recommended approach. As an existing reactor site, the Bruce Power site is a possible location for some of the management approaches being examined, such as the option of continued reactor site storage.
Saugeen Shores Open House (January 19, 2005)	Is the thermal load on Lake Ontario a significant factor on fish habitats?	The thermal load from the power plant does have a measurable effect on the nearshore waters of Lake Huron. There is ongoing research as to the effects of any temperature changes on fish species and habitat in Lake Huron. There is a proven beneficial effect for many fish who thrive in the warm-water habitat surrounding the discharge channel. There have been adverse effects postulated but not yet proven. As part of the EA studies, the magnitude and extent of the thermal plume in the Lake is being monitored.
Saugeen Shores Open House (January 19, 2005)	Are the currents in Lake Huron predominantly north to south?	The currents in Lake Huron are predominantly driven by wind. In general the current is from south to north.
Saugeen Shores Open House (January 19, 2005)	Is Bruce Power considering new reactor technology?	No, not in the short-term. Use of any new reactor technology (i.e., a new build) would require an extensive environmental assessment, and would need to have the support of the federal government.
Impact Advisory Committee (January 20, 2005)	At what point during the refurbishment will the steam generators be removed?	The steam generators will be removed about half way through the refurbishment activities. These are considered low level waste.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Impact Advisory Committee (January 20, 2005)	When will new fuel be implemented in Bruce B?	Following approval from the government (a decision is expected in the near future), new fuel will be used in one of the Bruce B reactors to ensure that it is behaving as expected. Following successful use in one reactor, it will be implemented in all four Bruce B reactors.
Impact Advisory Committee (January 20, 2005)	Is keeping the same steam drum system at Bruce A cheaper than using the system at Bruce B?	As part of the Bruce A Refurbishment Project, new design efficiencies were introduced rather than overall design changes. The Bruce A steam drums will not be redesigned to match the Bruce B design.
Owen Sound Open House (January 25, 2005)	Has a CANDU reactor ever gotten 30 years out of the reactor tubing?	Typically pressure tubes have been used for 20 to 25 years; however it is expected that they can perform as designed for up to 30 years. It is expected that the tubes at Bruce A could last longer; however it was considered most effective to replace the tubing at the same time as the other refurbishments.
Owen Sound Open House (January 25, 2005)	Now that fossil fuel is going to be banned by 2007, Bruce Power will need to work fast to replace this power.	If the project moves forward, Bruce Power anticipates Units 1&2 to be operating in 2008. Bruce Power believes that nuclear energy is a viable solution to the potential energy supply shortage in the province.
Owen Sound Open House (January 25, 2005)	Will new fuel improve efficiency?	New fuel will improve the safety of the reactor which will allow the reactors to increase output to full power.
Owen Sound Open House (January 25, 2005)	How long does a fuel bundle last in the reactor?	Bruce Power uses on-power fuelling, which allows fuel to be loaded while the reactor is operated. Each fuel bundle stays in the reactor core for a year on average.
Owen Sound Open House (January 25, 2005)	How will the Bruce A Refurbishment Project be funded?	If a decision is made to go ahead with the project, it will be funded by the Bruce Power Limited Partnership. Bruce Power is not depending on the government for funding.
Owen Sound Open House (January 25, 2005)	How is the radioactivity of the spent fuel neutralized?	Radioactivity of the spent fuel is a property of the material and cannot be neutralized. When the spent fuel is removed from the reactor it is placed in wet storage for a minimum of 10 years to cool. At the end of 10 years, the radioactivity of the spent fuel is reduced to less than 1% of its original radioactivity. After 10 years the fuel can be safely transferred to Dry Storage Containers (DSCs). Bruce Power has a contract with OPG to store the DSCs at the WWMF. OPG has an operating licence from the CNSC for the storage of Bruce Power used nuclear fuel in DSCs at the WWMF within the Bruce Power site. A very small portion of the used fuel will remain radioactive for many thousands of years.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Owen Sound Open House (January 25, 2005)	How long is it necessary to store the wastes?	The length of time for storage depends on the radioactivity of the wastes. A small portion of the wastes require storage for thousands of years. Bruce Power has a contractual agreement with OPG to store the wastes generated from Bruce A.
Owen Sound Open House (January 25, 2005)	How long will the DGR proposal last?	The DGR is for the long-term storage of low and intermediate level wastes. For more information on the DGR proposal, please refer to the OPG website at <a href="http://www.opg.com/ops/NwasteIAS1.asp">www.opg.com/ops/NwasteIAS1.asp</a> .
Owen Sound Open House (January 25, 2005)	Will the DSCs contain the fuel for the life of the radioactivity?	The DSCs are designed and licensed to safely contain the used fuel for a minimum of 50 years. The Nuclear Waste Management Organization (NWMO) is considering long-term management options for used nuclear fuel. For more information refer to the NWMO website at <a href="http://www.nwmo.com">www.nwmo.com</a> .
Owen Sound Open House (January 25, 2005)	Nuclear power has been around for while, why are we only taking the fuel out now?	Sufficient storage space has been available in the irradiated fuel bays (wet storage) within the plant. The transfer of used fuel to dry storage is being undertaken to provide future capacity in the irradiated fuel bays while ensuring the safe interim storage pending a long-term solution.
Owen Sound Open House (January 25, 2005)	Is there an emergency measures plan for Bruce? Is Owen Sound the primary hospital?	Yes, there is an emergency measures plan – copies of this plan are available to the public at local libraries. Kincardine is the primary hospital and as such are set up for radiation decontamination if necessary.
Owen Sound Open House (January 25, 2005)	Bruce Power has a great safety record. If you have as good an environmental record, we've nothing to worry about.	Bruce Power is proud of both their safety and environmental records.
Lucknow Open House (January 26, 2005)	Is the retubing being done because of sag and loss of spacers?	Yes, over time the pressure tubes expand causing them to sag. During retubing the connections will be cut close to the facing and cut out 2" at a time and crushed. This will all be completed with semi-automatic tooling.
Lucknow Open House (January 26, 2005)	What is wrong with the steam generators?	The tubing in the steam generators erode and corrode over time. The tubing was considered the life-limiting feature of the steam generators and the business decision was made to replace the entire steam generator at this time.
Lucknow Open House (January 26, 2005)	Will the same refurbishment process proposed for Units 1&2 be used for Units 3&4?	Yes. The scope for the refurbishment of Units 3&4 has been included in the total scope of the project as currently proposed for the EA. Bruce Power will make a decision in the future as to whether or not to proceed with the refurbishment of Units 3&4.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Lucknow Open House (January 26, 2005)	What percentage of radioactivity remains in the spent fuel?	The fuel stays in the reactor for on average one year, at which time it is transferred to the irradiated fuel bays (wet storage) for at least 10 years. After 10 years, the used fuel is then transferred to dry storage containers which are stored at the OPG WWMF.
Lucknow Open House (January 26, 2005)	Bass and whitefish were mentioned during the presentation as proposed Valued Ecosystem Components (VECs); what about lake trout or salmon?	VECs are features of the environment selected to be the focus of the EA because of their ecological, social and/or economic value, and their potential vulnerability to the effects of the project. Lake trout are a proposed VEC for the Bruce A Refurbishment Project. Any effects on salmon are expected to be similar to the effects on lake trout.
Chesley Open House (January 27, 2005)	Will the refurbishment of Bruce A happen while the EA is ongoing?	Some refurbishment activities can be carried out under the existing licence; however; any refurbishment activities carried out prior to acceptance of the EA would be carried out at a business risk to Bruce Power of the EA not being accepted.
Chesley Open House (January 27, 2005)	Is Bruce Power looking for a guaranteed price from the government of Ontario before going ahead with the project?	Bruce Power expects the government of Ontario to provide an agreement that the government will purchase the power at a rate that allows a fair return on the company's investment. Bruce Power is not expecting the government to pay for the capital costs of refurbishment.
Chesley Open House (January 27, 2005)	CANDU reactors are using 30 year old technology – are there no better advancements?	As part of the refurbishment project obsolete parts and components will be replaced and new equipment and efficiencies will be taken advantage of (e.g., using new fuel) without altering the basic operation and design of the generating station.
Chesley Open House (January 27, 2005)	Does the EA consider long-term storage of the wastes?	The EA for the Bruce A Refurbishment Project considers the production of the wastes and transfer of the wastes to the OPG WWMF until 2043. OPG is currently undertaking a separate EA to expand the WWMF for interim storage of low and intermediate level waste.. For more information, refer to their project website at <a href="http://www.opg.com/ops/wwmf.asp">www.opg.com/ops/wwmf.asp</a> . The long-term management of these low and intermediate level wastes is an aspect of the Deep Geologic Repository Proposal that is under study by OPG and the Municipality of Kincardine.
Chesley Open House (January 27, 2005)	Will the EA consider that the Great Lakes water level is dropping? Can the Bruce site keep operating with lower lake levels?	Yes, the EA will consider lower lake water levels in the assessment of the effects of the environment on the project. Additionally, the nearshore waters of Lake Huron are a VEC proposed for the EA.
Chesley Open House (January 27, 2005)	How deep is the water at the end of the intake channel?	The depth of water from the base of the intake channel to the water surface is approximately 15 m.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
EA Workshop (February 1, 2005)	Will the metallurgy change in the components being replaced?	The metallurgy of the reactor tubing will be essentially the same. Lessons learned from the earlier life of the reactor tubing will be applied during the refurbishment and extended life. The steam generator tubes will have a new metallurgy which is more corrosion resistant.
EA Workshop (February 1, 2005)	How will the fuel be handled during the refurbishment process?	There has not been fuel in the reactors of Units 1&2 for approximately eight years; therefore, fuel handling will not be required and the residual radiation has decayed to a significant extent.
EA Workshop (February 1, 2005)	Will the replacement parts required for refurbishment be newly manufactured or used?	All parts will be newly manufactured. However, as Bruce Power has not yet made a decision as to whether or not to proceed with the project, none of the replacement parts have been ordered yet.
EA Workshop (February 1, 2005)	Will the steam drums be inspected and/or replaced?	The steam drums will not be replaced as part of this project. They are inspected on an ongoing basis and inspections do not show any evidence that they need to be replaced.
EA Workshop (February 1, 2005)	Which unit will be refurbished first?	Unit 2 will be refurbished first, followed by Unit 1 approximately five months later.
EA Workshop (February 1, 2005)	Will there be any changes to the intake of water?	There are no planned modifications to the water intake and discharge systems.
EA Workshop (February 1, 2005)	Will going from 90% to 93% power require more water intake?	No, the water intake quantity is expected to remain relatively constant; however the discharge temperature may increase slightly.
EA Workshop (February 1, 2005)	Are all of the changes proposed for this project going to be within the Bruce A building?	No. There will be a temporary construction office complex outside of the Bruce A building which will have associated parking lots and support buildings. No new roads are currently proposed as part of this project.
EA Workshop (February 1, 2005)	Are there any treatment wetlands proposed as part of this project?	Although not currently explicitly defined, a treatment wetland could be considered.
EA Workshop (February 1, 2005)	Are there requirements for further security during construction and refurbishment?	A construction island will be established early in the project which will isolate Units 1&2 (being refurbished) from Units 3&4 (currently operating). All Unit 1&2 workers will enter through the construction complex at a dedicated security gate. The operating units will be isolated as much as feasibly possible during the refurbishment.
EA Workshop (February 1, 2005)	What is included in the construction complex?	The construction complex will include additional parking, changing areas and other ancillary support facilities. The construction complex will not include any temporary housing facilities.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
EA Workshop (February 1, 2005)	Will the pressure tubes be considered high level waste?	No, the pressure tubes and calandria tubes are intermediate level waste. Only used fuel itself is considered high level waste, and materials in direct contact with the fuel are considered intermediate level waste.
EA Workshop (February 1, 2005)	How will the project be financed?	If a decision is made to proceed with the project, it will be funded by the Bruce Power Limited Partnership. Bruce Power is not depending on the government for funding.
EA Workshop (February 1, 2005)	Will the refurbished units use natural uranium fuel or slightly enriched uranium (SEU) fuel?	The refurbished units will be initially loaded with natural uranium fuel. However, the EA will also consider the use of low void reactivity fuel (which is slightly enriched to 1% U-235) around the year 2010 and 2012. The decision to use the new fuel design would be made by Bruce Power following the successful use of this fuel in the Bruce B reactors.
EA Workshop (February 1, 2005)	Does the EA look at the need for the project?	The EA Guidelines require that the EA Study Report identifies the purpose of the project, but not the need.
EA Workshop (February 1, 2005)	Who determines whether the effects of the project are significant or not?	Golder Associates Ltd. (the consultant completing the EA) will make the initial decision as to whether the effects of the project are significant based on scientific reasoning, and will report this in the EA Study Report. The CNSC, as the Responsible Authority, will review this report and make the final determination. The EA Study Report is also reviewed by various other agencies (e.g., Health Canada, Fisheries and Oceans Canada) who provide comments to the CNSC.
EA Workshop (February 1, 2005)	Is the presence of chemicals used in the operation of the plant considered in the EA?	Yes, all of the chemicals used on site are catalogued and the concentrations determined. The EA then considers whether pathways exist to transport these chemicals to the environment. If there is a pathway, the EA then looks at the potential effect. The EA assesses the effects of both normal and accident and malfunction scenarios.
EA Workshop (February 1, 2005)	As part of the EA, do you just describe existing conditions, or predict impacts?	The EA first describes the existing conditions in the natural and social environment (e.g., groundwater flow). Then the EA looks at the project and how it might influence the VECs based on scientific and professional judgment. If impacts are predicted, mitigation measures to prevent or minimize the effect are considered. If the effect remains following mitigation, there is a formal assessment of significance.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
EA Workshop (February 1, 2005)	Will the EA also consider the compound effects of other projects in the area?	Yes, cumulative effects will be considered in the EA. First, the direct effects of the project are considered. If there is a predicted adverse effect, it is compared with other projects which overlap in space or time to determine if there is a cumulative effect. The cumulative effects assessment considers all existing and proposed projects which have a reasonable chance of occurring. The CNSC sets out the methodology for addressing cumulative effects and is responsible for ensuring that the list of other projects is inclusive.
EA Workshop (February 1, 2005)	Is Inverhuron Provincial Park part of the local study area?	Yes, the Park is within the boundaries of the local study area.
EA Workshop (February 1, 2005)	Will stormwater quality be examined in relation to new construction (e.g., parking lots)?	Yes, stormwater quality will be considered as part of the environmental effects assessment. The parking lot proposed will not be a permanent (i.e., paved) parking lot.
EA Workshop (February 1, 2005)	Is public health considered a VEC?	Yes, human health is explicitly defined as a VEC and considers both the health and well being of the public and workers.
EA Workshop (February 1, 2005)	Have you considered any bottom feeding fish on the list of VECs (e.g., round whitefish)?	Lake whitefish are benthic feeders and are included on the proposed list of VECs. Lake whitefish were also chosen as a VEC because of their cultural and economic importance, in particular to First Nations.
EA Workshop (February 1, 2005)	Are there any effects from the thermal plume?	The EA completed for the Restart of Units 3&4 made a number of predictions regarding the thermal plume. As part of follow-up monitoring to confirm these predictions, approximately 45 thermal monitors were placed in the Lake Huron lakebed in the fall of 2004 and will be collected in the spring of 2005. The results of this study will give greater confidence in predicting the degree of the extent of the thermal plume for this EA.
EA Workshop (February 1, 2005)	Please describe the intake and discharge systems.	The water intake system is a tunnel approximately 30 feet in diameter and extends approximately 0.25 miles under the lake. Water is discharged at the surface via a discharge channel. The discharge channel provides a warm-water habitat for many fish species.
EA Workshop (February 1, 2005)	Are there any zebra mussel controls at the station?	Zebra mussel controls are only on plant systems. The flow is too high on the intake to support zebra mussels.

ORIGIN OF QUESTION (DATE)	QUESTION OR COMMENT	RESPONSE
Visitors' Centre Open House (February 1, 2005)	Why is the new fuel safer than the current fuel? Are the fuel bundle sizes the same?	The new fuel bundle design includes a central pencil with dysprosium in it. Dysprosium acts as a neutron absorber and improves the speed of shut-down during a loss of coolant accident. To compensate for the central neutron absorber, the remainder of the pencils have been enriched up to 1% uranium-235. The new fuel bundle has been designed to be as similar as possible to the current fuel; therefore they are the same overall size and will spend approximately the same amount of time in the reactor.
Visitors' Centre Open House (February 1, 2005)	Is Tobermory outside of the range of the regional study area and therefore expected impacts?	Most of the measurable effects of the project are typically expected in the site and local study areas. Effects further away from the site are typically socio-economic effects. The regional study area for the socio-economic environment considers the five local municipalities (Kincardine, Saugeen Shores, Arran-Elderslie, Huron-Kinloss and Brockton) as well as the City of Owen Sound. To date, a measurable effect at Tobermory has not been identified. However, if effects are indicated, the Regional Study Area would be expanded as necessary.
Visitors' Centre Open House (February 1, 2005)	Does Bruce Power need the deep geologic repository to be in place before the pressure tubes are replaced?	No. Bruce Power is not relying on the completion of the Deep Geologic Repository Proposal to move forward with the Bruce A Refurbishment Project.
Visitors' Centre Open House (February 1, 2005)	Are the nuclear waste storage sites (e.g., OPG's WWMF) only for the storage of nuclear industry by-products?	Yes. The EA for the Bruce A Refurbishment Project will consider the wastes produced as a result of the project and their transportation to the WWMF. The WWMF is only licensed by the CNSC to store wastes from the nuclear generating stations in Ontario.
Brockton Open House (February 8, 2005)	Will the EA test for effects of the project in Lake Huron?	Yes, the study areas for the environmental assessment extend several kilometres into the lake and encompass any likely effects of the project.
Brockton Open House (February 8, 2005)	What is the temperature and volume of the discharge at the plant?	The discharge temperature is dependent on the temperature of the intake water. The average increase in temperature is 8°C. The Ministry of the Environment requires that the change in temperature cannot be greater than 13°C in the winter and 11°C in the summer. The volume of discharge is approximately 160 m <sup>3</sup> /s with four units operating.
Brockton Open House (February 8, 2005)	Does the new fuel produce any extra wastes?	No, the volume of wastes produced using new fuel is the same as with the current fuel.
Brockton Open House (February 8, 2005)	Have there been any effects observed on the commercial fisheries?	Ongoing monitoring, including a lake-wide study being carried out with the First Nations, has not indicated any measurable adverse effect on the commercial fisheries.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Brockton Open House (February 8, 2005)	How far back is fisheries data available?	There is data available back to the mid-1970s; however, the most applicable data have been collected in the past ten years.
Brockton Open House (February 8, 2005)	The fuel bundles coming out of the reactor are radioactive – how are they stored?	When the spent fuel is removed from the reactor it is placed in wet storage for a minimum of 10 years. At the end of 10 years, the radioactivity of the spent fuel is reduced to less than 1% of its original radioactivity. At this time the fuel is transferred to dry storage containers (DSCs). Bruce Power has a contract with OPG to store the DSCs at the WWMF on the Bruce Power site.
Brockton Open House (February 8, 2005)	Wouldn't the money to be invested in this project be better invested in reducing power consumption?	Decisions with respect to energy policy are the responsibility of the government. Bruce Power is a provider of safe electrical energy for the Province of Ontario. Bruce Power has no role in deciding how conservation efforts are to be paid for or implemented.
Brockton Open House (February 8, 2005)	How much more efficient will the reactors be when they are refurbished, as compared to what they were in 1996?	The overall efficiency of the reactors will remain about the same (i.e., the total amount of energy they are able to produce). However, the overall capability of the reactors is expected to increase (i.e., the amount of time the reactors are producing energy). The capability of the reactors in the 1990s was as low as 73%; following refurbishment, Bruce Power aims to have Units 1&2 running at over 90% capability.
Brockton Open House (February 8, 2005)	What is the timeline for the assessment? And if the assessment is approved, how long until Units 1&2 will be up and running?	The current assessment schedule anticipates a decision by the CNSC on the EA in late spring 2006. Assuming Bruce Power makes a decision to proceed with the project, and a positive decision on the EA by the CNSC, Unit 2 will be refuelled and restarted in 2008, followed by Unit 1 approximately five months later.
Brockton Open House (February 8, 2005)	Will the reactors be started before the wastes are dealt with?	Bruce Power has a contractual agreement with OPG for the storage of the nuclear wastes generated by Bruce Power. OPG is carrying out a separate EA to increase the storage capacity of the WWMF to accommodate the refurbishment wastes. For more information on this EA, see their website at <a href="http://www.opg.com/ops/wwmf.asp">www.opg.com/ops/wwmf.asp</a> .
Brockton Open House (February 8, 2005)	The levels of tritium were quite high when the old plant was operating – what will the levels be with all the units operating?	Ongoing monitoring for tritium has shown that the concentrations of tritium in the environment are decreasing with time. The EA will predict the effects of restarting Units 1&2 on the levels of tritium in the environment. Similar predictions of levels of tritium for the assessment of restarting Units 3&4 were higher than are evident from follow-up monitoring. This is due to the conservatism built into the assessment.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Brockton Open House (February 8, 2005)	Where does tritium come from?	Tritium is an activation product in the heavy water system. To limit tritium build-up, tritiated heavy water is removed and replaced by fresh, reactor-grade heavy water. The tritiated heavy water is then transported to OPGs Darlington Tritium Removal Facility, where the tritium is removed and the heavy water is returned to Bruce Power for reuse.
Brockton Open House (February 8, 2005)	In past EAs you made predictions/set benchmarks, and you have since done monitoring. What have you found?	Preliminary monitoring of the groundwater has shown that the measured levels of tritium are lower than those predicted in the EA. Follow-up monitoring of fisheries, wildlife and the thermal plume is currently ongoing; however, the preliminary findings are that the predictions were conservative and overestimate any effects. The follow-up monitoring information will be used in this EA and will bring greater confidence in the assessment.
Brockton Open House (February 8, 2005)	What is new fuel?	New fuel is a new fuel bundle design which increases the safety and efficiency of the reactor. The fuel bundle includes a central dysprosium fuel pencil.
Brockton Open House (February 8, 2005)	OPG is currently offering compensation to the municipalities for hosting a long-term waste site, is Bruce Power considering something similar?	No, Bruce Power is not considering a compensation package for the area residents; however, the project is likely to bring substantial long-term benefits to the community in terms of jobs, infrastructure, etc.
Brockton Open House (February 8, 2005)	Will the EA not mean anything if Bruce Power doesn't get assurances on the energy market from the government?	Although Bruce Power has not yet made a decision to proceed with the Bruce A Refurbishment Project, they have commenced the EA as a planning tool. This way, if Bruce Power does decide to proceed with the project, the critical EA studies are already under way.
Brockton Open House (February 8, 2005)	Does the EA consider that construction workers may be exposed to radioactivity during the project?	All project activities will minimize the radiation exposure to workers to the maximum extent possible. The reactors have been defuelled since 1997, therefore the radioactivity within the reactor components has had a chance to decay. Human health, which includes the health of workers, is a Valued Ecosystem Component for this assessment, therefore all exposures to workers will be considered in the EA.
Brockton Open House (February 8, 2005)	Is radiation measured surrounding the waste storage at the WWMF?	There is extensive ongoing radiation monitoring on the Bruce Power site, including in the vicinity of the WWMF. The Bruce A Restart EA will consider effects of the project in combination with effects of other operations such as OPGs WWMF.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Brockton Open House (February 8, 2005)	Who makes sure that Bruce Power and Golder are actually monitoring for effects?	Bruce Power is regulated by many government agencies (e.g., CNSC, Ministry of the Environment, Ministry of Labour, Environment Canada, Health Canada, Fisheries and Oceans Canada). All of the environmental assessment reports and monitoring reports are available to the public at library repositories and on the Bruce Power website ( <a href="http://www.brucepower.com">www.brucepower.com</a> ).
Brockton Open House (February 8, 2005)	Are there health effects “downwind” of the reactor?	There is no evidence of health effects surrounding the reactor site. Studies in the Region of Durham (which hosts two nuclear generating stations and has a large population base) have not reported any evidence that the health and well-being of residents is adversely affected by the nuclear generating stations.
Brockton Open House (February 8, 2005)	Is the number of regulators indicative of how dangerous the plants are?	No, it is indicative of the strict regulatory regime Bruce A and other nuclear plants in Canada operate.
Brockton Open House (February 8, 2005)	What kind of commitments is Bruce Power looking for from the government before they proceed with the project?	Bruce Power is looking for the government of Ontario to provide an agreement that the government will purchase the power at a good return on investment.
Saugeen Ojibway Joint Council (March 4, 2005)	How would future Lake Huron water levels affect operation of the power station?	The Bruce Power stations use lake water for cooling. However, because the lake water intake is through a tunnel extending out into deeper water, changes in Lake Huron water levels would have very little effect, if any, on the continued use of lake water for cooling. After use, the cooling water is returned to Lake Huron. However, effects of lower lake levels might be seen in the effects that discharges from the power stations could have on the near-shore environment, including fish and water fowl. The environmental assessment studies will include consideration of any effects of lower lake water levels on the near-shore environment.
Saugeen Ojibway Joint Council (March 4, 2005)	What would be the effects of climate change on the power station?	Few if any effects are expected on the operation of the power stations as a result of climate change. More significantly, the generation of electricity by Bruce Power occurs without the production of the greenhouse gases responsible for climate change. Bruce Power believes that the continued operations of its nuclear stations provide a major environmental benefit by avoiding the large quantities of greenhouse gasses produced by many other large-scale ways of generating electricity.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Saugeen Ojibway Joint Council (March 4, 2005)	Will high level waste (also known as “used fuel”) be transported from other nuclear power stations to the Bruce site?	No. Used fuel from other power stations is not transferred to the Bruce Power site. Used fuel from the Bruce stations is initially stored in water filled pools at each power station for at least 10 years before being transferred in dry storage containers to OPG’s Western Waste Management Facility for management.
Saugeen Ojibway Joint Council (March 4, 2005)	What is Bruce Power’s relationship with Ontario Power Generation (OPG)	<p>Bruce Power is a partnership among Cameco Corporation (31.6%), TransCanada Corporation (31.6%), BPC Generation Infrastructure Trust, a trust established by the Ontario Municipal Employees Retirement System (31.6%), the Power Workers’ Union (4%) and The Society of Energy Professionals (1.2%). Bruce Power operates the Bruce nuclear power stations and most of the facilities on the Bruce Power site under a leasing arrangement with OPG. The lease extends to 2018, with an opportunity to extend it through 2043. OPG retains the ownership of the stations.</p> <p>In addition, OPG continues to own and operate the Western Waste Management Facility (WWMF) on the Bruce Power site. The WWMF receives and manages low and intermediate level wastes from all Ontario power stations, include the Bruce stations. In addition, OPG manages the used fuel from the Bruce stations. Bruce Power pays OPG for these waste management services.</p>
Saugeen Ojibway Joint Council (March 4, 2005)	How many units of Bruce A is Bruce Power planning to restart?	The company plans to restart the two remaining shutdown units at the Bruce Power site, namely Bruce A Units 1&2. There are currently six operating units at the site, two at Bruce A (Units 3&4) and four at Bruce B (Units 5-8). Once Units 1&2 are restarted there will be eight operating units at the site, similar to the early 1990s
Saugeen Ojibway Joint Council (March 4, 2005)	Why were Units 1&2 shutdown?	In the late 1990s, Ontario Hydro (now known as Ontario Power Generation) carried out an extensive review of the operation of all its power stations, including those at Bruce. That review concluded that Ontario Hydro’s resources were stretched too thinly to allow the operation of all power stations and recommended that eight of the 20 operating units be temporarily shut down, so that Ontario Hydro could focus on improving the performance of the other 12 units. The shut down included four units at Bruce and four units at Pickering. It was always intended to restart the shutdown units once the company’s resources were brought back to full strength. Bruce Power took over operation of the Bruce Power site in 2001, and restarted two of the shutdown units in late 2003 and early 2004. Bruce Power now intends to restart the last two shutdown units at the site.

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Saugeen Ojibway Joint Council (March 4, 2005)	Will the wastes produced by the restarted units be recycled?	<p>Bruce Power is committed to reducing, reusing and recycling wastes produced at the Bruce Power site to the extent possible. For example scrap metals which are proven not to be radioactive are recycled. However, much of the waste, and particularly low and intermediate level waste containing radioactivity cannot be recycled for safety and environmental reasons. This waste is transferred to OPG's Western Waste Management Facility where it is processed to reduce its volume prior to be place into storage.</p> <p>Used fuel from the power stations cannot be reused or recycled once it is removed from the reactors.</p>
Saugeen Ojibway Joint Council (March 4, 2005)	How many additional workers will be required to refurbish the units?	Initial estimates are that there will be between 500 and 1000 construction workers involved with refurbishing and restarting the units. These temporary construction workers are in addition to the approximately 3500 people required to operate all eight units and other Bruce Power facilities on-site.
Saugeen Ojibway Joint Council (March 4, 2005)	When will you know if the project is going ahead and the units will be restarted?	Bruce Power is currently negotiating with the Government of Ontario regarding the conditions under which the units would be restarted. It is expected that these negotiations will have progressed sufficiently by early Spring to allow Bruce Power to make a decision on the restart.
Saugeen Ojibway Joint Council (March 4, 2005)	Are your consultants, Golder Associates Ltd., in a conflict of interest in carrying out the environmental studies since Bruce Power is paying their bill? How can we expect the environmental studies to be objective and fair?	<p>Bruce Power has hired Golder Associates Ltd. to carry out the studies required for the environmental assessment. Golder is an international environmental and ground engineering company with extensive experience in carrying out environmental assessments in Ontario, Canada and around the world. Golder has a reputation for integrity and thoroughness in carrying out its work. Bruce Power has hired Golder because of this reputation and because Golder has carried out similar studies at Bruce, Pickering and Darlington.</p> <p>The nature of the studies required for the EA are provided in the EA Guidelines issued by the Canadian Nuclear Safety Commission, and Golder's studies must meet all these requirements. In addition, the results of Golder's studies will be extensively reviewed by government specialists and the public.</p>

<b>ORIGIN OF QUESTION (DATE)</b>	<b>QUESTION OR COMMENT</b>	<b>RESPONSE</b>
Saugeen Ojibway Joint Council (March 4, 2005)	Do Bruce Power's plans involve managing waste from Bruce A or do they also include waste coming from other sites?	Bruce Power has no responsibility for wastes from other power stations and does not receive any wastes from outside the site. However, all wastes produced from the Bruce stations are transferred to Ontario Power Generation for management at the Western Waste Management Facility on the Bruce Power site. OPG owns and operates the Western Waste Management Facility which receives and manages low and intermediate level wastes from all Ontario power stations, include the Bruce stations.
Saugeen Ojibway Joint Council (March 4, 2005)	Will the environment assessment consider any effects on the food chain and on all parts of the environment?	The studies being carried out as part of the environmental assessment are broad and thorough and cover all aspects of the environment. Specifically they consider how releases from the power station to air, water and land may affect plants, animals and people, through a variety of pathways including growing and eating food, including fish and country foods.
Saugeen Ojibway Joint Council (March 4, 2005)	How is the security of the power station being protected against acts of terrorism?	Bruce Power maintains a high degree of security at the site, including restricted access to the site and power stations, screening of all personnel working at the site, and a highly trained security force. For reasons of security and confidentiality, consideration of external threats such as acts of terrorism and sabotage in the assessment is not included in the environmental assessment but is addressed by the Canadian Nuclear Safety Commission's regulatory and licensing processes.
Saugeen Ojibway Joint Council (March 4, 2005)	Do the emergency response plans include the First Nations or are they limited to the immediate vicinity of the power station?	Emergency response planning for the unlikely event of an accident that could affect people outside the Bruce site is the responsibility of a government agency, Emergency Management Ontario. Bruce Power works with Emergency Management Ontario and other local emergency responders to assist in the development and testing of emergency response plans. The current emergency response plans are available in local libraries.
Saugeen Ojibway Joint Council (March 4, 2005)	What process will Bruce Power follow to decide if new reactors are to be built at the Bruce site?	Any decision to build new reactors at the Bruce Power site would involve business decisions, feasibility analysis, environmental assessment approvals and licensing decisions. Once the need for the electricity is determined and a satisfactory analysis of the business case is made, Bruce Power would be required to carry out an environmental assessment before any approval to begin construction of new power station(s) could be given by the Canadian Nuclear Safety Commission. Because of the time required to complete the feasibility analysis, any decision with respect to construction of new reactors is some years away.