# ENVIRONMENTAL ASSESSMENT PLANNING FOR NUCLEAR NEW BUILD IN CANADA

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## Abstract

Bruce Power's planning process for maintaining or increasing the electricity generated at its Bruce County site includes refurbishing existing reactors and/or constructing new reactors. Successfully completing environmental assessments for refurbishment and new build projects is a key component of the planning process. Completion of an EA within a specified schedule presents particular challenges.

The paper describes how Bruce Power is addressing many first-time issues relating to an EA of a new nuclear power station, including: consideration of alternatives, number and design of reactors, cooling water and waste management strategies, and integration with existing facilities. In addition, the approach for successfully communicating with the local community and government organizations is described.

## 1. Introduction

In June 2006 the Ontario Government directed the Ontario Power Authority to proceed with developing a 20-year Integrated Power System Plan. In the directive, the government outlined its view of the future role for nuclear power in Ontario. Under the government's plan, nuclear power will remain a key source of Ontario's electricity by maintaining the installed nuclear capacity at 14,000 MW. In order to meet the government's policy framework, both refurbishment of existing facilities and building of new reactors needs to be considered as part of a long-term planning process by both the Ontario Power Authority and industry as a whole.

Bruce Power currently operates four nuclear reactors at Bruce B (Units 5 through 8), two nuclear reactors at Bruce A (Units 3 and 4), and is in the process of conducting a mid-life refurbishment on the two remaining Bruce A reactors (Units 1 and 2) and will also refurbish Units 3 and 4. Once the refurbishment at Bruce A is completed, Bruce Power can be expected to generate up to 6,200 MW at the Bruce Power site. However, the Bruce B station, which generates 3,200 MW, could require a mid-life refurbishment commencing around 2014. Although no decision has been made to refurbish any of the Bruce B units, an environmental assessment of the continued operation of the Bruce B station through approximately 2040 was completed in 2004 [1].

Consistent with the Ontario government's directive, Bruce Power is undergoing a multi-year planning process to evaluate its options for continued electricity supply over the long-term. Options being considered include refurbishment of existing reactors at the Bruce site or construction of new units to either replace existing units or augment output through construction of a third nuclear power plant at the site. This paper discusses the environmental assessment of approximately 4,000 MW of new nuclear capacity at the Bruce site. Consideration of a third station (Bruce C) would provide Bruce Power with the ability to plan for a wide range of options in maintaining the site as a major contributor to Ontario's long-term electricity requirements.

## 2. Environmental Assessment Process and Schedule

An environmental assessment for a new nuclear power plant in Canada has been estimated to take 30-36 months to complete. This guessestimate of the schedule is based on the time taken to complete the assessments of other nuclear projects, including nuclear power station refurbishments and waste management facilities. This represents a major portion of the estimated 10 years it takes to plan and build a new nuclear reactor. In addition, an EA for a new nuclear power station presents three challenges:

- First, on what "**track**" will the EA be conducted: comprehensive study or panel review? Our solution was to ask the Canadian Nuclear Safety Commission (CNSC) immediately to refer the project to a review panel.

- Second, what is the **process** for completing the EA, including the process for the development and review of the draft EA guidelines, review of the EIS report and conduct of the panel review hearings? Because the Bruce New Build Project is the first such project in many years, there is considerable uncertainty with respect to the process steps, particularly in the early stages.

- Third, what is the **schedule** for completing the EA, including key milestones such as completion of EA Guidelines and panel hearings? On other EAs, our approach to this challenge has been to develop an overall schedule in consultation with the CNSC. This has not been possible for this project, resulting in some uncertainty on when the EA might be completed.

### 2.1 Environmental Assessment Track

A review panel is widely accepted as being appropriate for a project of the magnitude and broad interest evident in a new nuclear power station. However, all projects assessed under the *Canadian Environmental Assessment Act* begin the assessment as a screening or comprehensive study. For example, the *Comprehensive Study List Regulations* identify that the proposed construction of a Class 1A nuclear facility that is a nuclear fission reactor that has a production capacity of more than 25 MW (thermal) as a project for which *"……the responsible authority shall ensure public consultation with respect to the proposed scope of the project for the purposes of the environmental assessment, the factors proposed to be considered in the assessment, the proposed scope of those factors, and the ability of the comprehensive study to address issues relating to the project and a comprehensive study must be conducted".*

A project on the comprehensive study track may be "bumped up" to a review panel on the recommendation of the responsible authority (RA), which is the CNSC in the case of nuclear projects. Alternatively, the responsible authority may recommend to the Minister that the EA continues on the comprehensive study track. Bruce Power, in agreement with several interested parties, asked that the Bruce New Build project be referred immediately to the Environment Minister for a panel review without going through a lengthy track report process. The Minister of the Environment accepted the CNSC's recommendation and referred the project to an independent review panel [2].

## 2.2 Environmental Assessment Process

In broad terms, the process for conducting the EA involves the following steps:

- EA initiation, including identification of RAs, decision on track and announcement of funding of interveners.
- EA Guidelines establishing the scope of the project and the scope of the assessment.
- Conducting EA studies and preparation of Environmental Impact Statement (EIS) by Bruce Power. The EIS is issued initially as a draft report.
- Establishment of review panel and procedures.
- Panel review and hearings.
- Panel recommendation.
- Decision on EA by Cabinet.

A positive decision is required to allow CNSC and other RAs to proceed with decisions on licence and permit applications.

While the elements of this process are common to many projects subject to review panel, their implementation on a new nuclear power plant project is new. In addition, the requirements for consultation with local First Nations are being worked out on a case-by-case basis and have been more complex than expected. The absence of a clear process with firm guidelines is a major risk to the timely completion of the environmental assessment. For example, the time between the acceptance of Bruce Power's Project Description document and the issuing the draft EA Guidelines is at least 15 months. In addition, there has been some uncertainty with respect to the roles of the CNSC, other RAs and the Canadian Environmental Assessment Agency (CEAA). Future proposals should benefit significantly from the clarification of the process that should result from completion of the Bruce New Build project EA.

## 2.3 Environmental Assessment Schedule

As indicated above, the schedule for completion of each of the major milestones in the EA represents the greatest challenge to the timely completion of the EA. Schedule slippage throughout each of the steps is often beyond the control of a proponent and results in a major risk that must be managed if the planning process is to be completed within an appropriate time.

Table 3, below, shows the schedule for the major milestones of the Bruce New Build project EA as it stood in March 2008 when this paper was prepared. As noted in the table, the schedule for completion of the EA is not known. Uncertainties in the time required to complete the assessment are more likely to occur because of the process issues rather than the time taken to complete the EA studies or preparation of the EIS.

**Table 1**
**Schedule of Key Milestones in EA Process**

| EA Process Step | Milestone | Timeline |
|---|---|---|
| Initiate Planning Process | Bruce Power announces plans for EA of new reactors at the Bruce site | 0 |
| | Bruce Power files Site Preparation Licence application | 0 |
| Initiate EA | Bruce Power files draft Project Description document | Month 1 |
| | Bruce Power files final Project Description document | Month 5 |
| | EA initiated by CNSC | Month 6 |
| | Minister announces EA track decision (review panel) | Month 11 |
| | CEAA announces participant funding | Month 11 |
| Develop EA Scope | CNSC issues draft EIS Guidelines | Month 20 |
| | *CNSC issues final EIS Guidelines (anticipated)* | Month 24 |
| Conduct EA Studies | Bruce Power conducts EIS studies | Months 1- 22 |
| | *Bruce Power releases draft EIS (anticipated)* | Month 26 |
| | *Bruce Power completes studies and finalizes EIS* | TBD |
| Complete EA Process | *Site Preparation Licence estimated 2009*<br>*Construction Licence estimated 2010* | |

## 3. Bruce New Build Project Description

A fulsome description of the Bruce New Build project is required to allow the conduct of the assessment of effects. The assessment of effects is based on a description of the project during its site preparation and construction, operation and maintenance, and decommissioning phases. To allow this assessment, the constituent principal project works and activities that make up the various phases of the project are described using information supplied by the reactor vendors, supplemented by experience elsewhere as reported in the literature. Project works and activities include the various physical structures, buildings, systems, components, activities and events that make up the project. Each project work and activity is described in sufficient detail to enable the EA study team to determine how it might individually, and collectively with other project works and activities, affect the existing environment during normal operations or as a result of malfunctions and accidents.

Developing a suitable description of the project that would serve as the basis for the environmental assessment presents three significant challenges:

- First, how many reactors, including both refurbished and new units, would be operating at the Bruce site within the next 20 years? Bruce Power is currently proceeding with the refurbishment of Bruce A (4 Units), the refurbishment of Bruce B (4 Units) is under consideration, and a third station may include up to four units. Our solution to this challenge was to develop a **maximum project concept**.

- Second, at the time the environmental assessment was initiated, Bruce Power and the province had not decided on a specific reactor design. This represents a significant challenge to conducting the EA since different reactors may have different interactions with the environment. Our solution to the challenge of conducting a "technology neutral" EA was to develop and characterize a **generic plant envelope**.

- Third, an environmental assessment under the *Canadian Environmental Assessment Act* requires consideration of alternative means of carrying out the project. In addition to alternative reactor designs, alternative means for the project may include different combinations of siting location, cooling water approach, switchyard design, and used fuel and waste management options. Our solution to identifying and evaluating alternatives to the project was to develop a **reference project.**

## 3.1 Maximum Project Concept

The Bruce New Build project is defined by a series of alternatives for generating approximately 4,000 MW of new nuclear power. To ensure a conservative approach, the assessment of effects uses bounding scenarios for the duration of the project. A bounding scenario is defined as the situation where the predicted effects may reasonably be expected to be greater than all other likely scenarios. If no significant adverse effects are predicted using the bounding scenarios, it is valid to assume that there will not be any significant adverse effects during all other normal conditions.

For planning purposes, the EA assumed a **maximum project concept** that assesses the effects of up to 12 reactors, comprising the eight existing units and up to four additional new units. This would increase the total generating capacity of the site to approximately 10,000 MW. Accordingly, the environmental assessment would consider the effects of the new nuclear generating capacity cumulatively with the existing effects of 6,200 MW of capacity from Bruce A and Bruce B. This approach provides Bruce Power with flexibility in its planning process by allowing the company to consider a full suite of refurbishment and new build options for the site.

## 3.2 Generic Plant Envelope

At the time of initiating the environmental assessment, Bruce Power was considering five potential reactor designs. The ACR-1000 and Enhanced CANDU 6 (EC6) are the latest models of pressurized heavy water reactors offered by Atomic Energy of Canada Ltd. (AECL). The Westinghouse AP1000 and the Areva U.S. EPR are the two of the latest generation of pressurized water reactors (PWR). The General Electric (GE) ESBWR represents the latest generation of boiling water reactor (BWR). Consideration of a "technology neutral" environmental assessment incorporating all of the possible reactor designs is identified as one acceptable approach by the CNSC [3].

The information used to describe the generic plant envelope is based on publicly available information and therefore, consists of a range of level of detail. Similar information is not necessarily available for all reactors at the same level of detail. The level of detail, however, must be sufficient to define the generic plant envelope to a level appropriate for an environmental assessment. Consequently, the EA refers to generic plant parameters for the reactor and its associated facilities. For each parameter required for the EA studies, the most conservative of the reactor designs is used in the generic plant envelope. This approach allows Bruce Power to assess the environmental effects, including the environmental benefits, of each reactor design while at the same time ensuring that the assessment of effects is conservative and does not add unnecessary complexity to the EA.

Since initiating the EA, the Ontario Government announced in March 2008 that it was seeking competitive bids from four reactor manufacturers: the ACR-1000, the U.S. EPR, the AP1000 and the ESBWR. Accordingly, it was decided that the EC6 will no longer be considered as a potential reactor design for the Bruce New Build project. A summary of the technical specifications for each of the reactor designs is provided in Table 2.

**Table 2**
**Reactor Design Considered in EA**

| Characteristic | PRESSURE TUBE REACTOR | PRESSURIZED WATER REACTORS | | BOILING WATER REACTOR |
|---|---|---|---|---|
| | ACR-1000 | AP1000 | EPR | ESBWR |
| Manufacturer | AECL | Westinghouse | AREVA | General Electric |
| Country of origin | Canada | US | France/Germany | US |
| Number of Reactors Considered for New Build Project | 4 | 3 | 2 | 2 |
| MW(e) net per reactor | 1,085 | 1,090 | 1,600 | 1,535 |
| MW(e) net for Project | 4,340 | 3,270 | 3,200 | 3,070 |
| Design Status | New Design | New Design | Being Built | New Design |
| Maximum fuel enrichment ($^{235}U$ %) | 2.5% | 5% | 5% | 4.2% |
| Design Life | 60[a] | 60 | 60 | 60 |
| Notes: [a] Requires mid-life refurbishment | | | | |

## 3.3 Reference Project

It is common practice in planning for a project of the scale proposed by Bruce Power that alternative means of accomplishing the project are identified and assessed. The Bruce New Build project could be achieved by a variety of combinations of these alternative means. One purpose of the EA is to identify the environmental effects of the various alternatives for achieving approximately 4,000 MW of new nuclear capacity at the site. In addition to the four reactor designs, the alternative means for the Bruce New Build project considered in the environmental assessment include the following:

- Three alternative locations on the Bruce site;
- Two cooling water strategies, involving recirculating and once-through water cooling;
- Two switchyard designs comprising alternative technologies; and
- On-site and off-site radioactive waste management strategies.

To simplify the comparison of alternative means, one set of alternatives was identified to form the Reference Project. The Reference Project identified for the EA includes a credible bounded generic reactor design, a site option adjacent to Bruce A, a once-through cooling water strategy that is common to all existing Canadian reactors, on-site radioactive waste management systems consistent with current practices at the Bruce site, and a state-of-the-art switchyard design that provides maximum flexibility with respect to power plant layout.

Other sets of alternatives are combined to form Alternative Project Scenarios that can be compared directly with the Reference Project. This approach enables the EA to be conducted with a clearly defined set of parameters by fully assessing the project's anticipated environmental effects from the beginning of the EA process to the end, thus improving efficiency and lending clarity to the process.

Following identification of the Reference Project, each of the alternative means is introduced to the EA process as a clearly defined Alternative Project Scenario, and the additional or different effects are assessed relative to the Reference Project.

## 4. Cooling Water Options

Approximately two-thirds of the thermal energy generated in a nuclear reactor is discharged to the environment. Previous EAs of nuclear power stations in Ontario have identified this discharge of heat as one of principal effects on the biophysical environment. The means of achieving the necessary removal of heat are the use of recirculating cooling or once-through cooling system using lake water. Several alternative technologies to achieve these two approaches have been evaluated as part of the EA, including using natural or mechanical draft cooling towers. The options of mechanical draft dry cooling towers and natural draft cooling towers were determined not to be feasible.

The alternative means considered for the project include:

- **Mechanical Draft Cooling Towers.** These include cooling tower banks and re-circulation of cooling water. Heat is dissipated through evaporation and direct transfer of heat to the atmosphere. In addition, mechanical cooling systems involve an energy penalty compared with once-through systems.

- **Once-Through System.** This includes a once-through water intake with pumping system that takes and discharges water to Lake Huron, similar to that currently used at Bruce A and Bruce B. The state-of-the-art for once through systems involves both submerged intakes and discharges.

### 4.1 Mechanical Draft Cooling Towers

Cooling towers dissipate heat through evaporative losses to the atmosphere. The movement of air though these towers is mechanically induced by fans. Mechanical draft cooling towers require the use of large fans, which typically consume about three percent of the electricity generated by the station.

4,000 MW of new nuclear generation would require at least 20 blocks of mechanical draft cooling towers. Each block would be divided into nine towers each with a top mounted fan. Each block would be approximately

180 m long, 18 m wide, and 14 m high, including the fan stack. The total footprint for a cooling tower for 4,000 MW of electricity generating capacity would be about 6 hectares (ha).

This is the first time mechanical draft cooling towers have been considered for such a large nuclear power station in Canada. While they offer a considerable benefit in reducing water demand, the adverse effects of fogging and icing, noise and amount of land required are important considerations in the EA.

### 4.2 Once-Through Cooling System

A once-through cooling system comprises a cooling water intake system and a discharge system, which typically draw from and discharge to a large body of water. Subsurface systems are typically preferred from an environmental perspective and have better access to cold water.

4,000 MW of new nuclear generation would require approximately 220 $m^3/s$ flowing through the plant. This flow can be supplied by two concrete lined tunnels with an internal diameter of 7.5 m, resulting in a velocity of about 2.25 m/s. This velocity is high enough for the tunnel to be self-cleaning while keeping head losses down. The velocity cap for such an intake system would require a diameter of approximately 30 m and a height of 6 m resulting in flows of about 0.2 m/s at the outer edges of the cap. The flow into the velocity cap should be horizontal to allow most fish to avoid becoming captured by the system.

Based on the conceptual layout of the intake and discharge tunnels for the project at two alternative locations on the Bruce site, the length of the intake tunnels could be up to 1,600 m to ensure a water temperature in the 5°C to 10°C range in the summer. The depth of the centreline of the tunnels would be 40 to 45 m below lake water level. The length of the discharge tunnels could be up to 1,100 m to ensure that the cooling water is discharged in at least 9 m of water. The depth of the centreline of the tunnels would be 40 to 45 m below lake water level.

Cooling water would be discharged through a series of diffusers attached to the crown of the discharge tunnel, and the first diffuser would be located at the 9 m depth contour line. The velocity at the outlet port of the diffusers is set at of 3 m/s. Larger velocities at the nozzles improve dilution but cause an exponential increase in head losses and associated pumping costs, and may impact the fish in the vicinity of the structure. The spacing between the diffusers is a function of the thermal dispersion. A diffuser with a nozzle diameter of 2 m would require 12 diffusers at about 20 m centre to centre at an exit velocity of 3 m/s to accommodate the system flows.

Table 3, below, presents a summary of the condenser cooling water options assessed in the EA. As mentioned, this is one of the major areas of interaction between the power plant and the environment. The choice between once-through cooling systems and mechanical draft cooling towers involves a balance between the energy penalty and the environmental effects of the thermal discharges to water. It is worth noting that many of the negative perceptions of nuclear power are associated with natural draft cooling towers.

**Table 3**
**Comparison of Condenser Cooling Water Alternatives**

| Characteristic | Once-through Cooling | Mechanical Draft Cooling Towers |
|---|---|---|
| Energy penalty or gain relative to once-through cooling (%) | 0 | -3 |
| Maximum heat load to Lake Huron (MW) | 8,460 | 98 |
| Maximum heat load to atmosphere (MW) | 0 | 8 ,60 |
| Condenser cooling water flow rate ($m^3/s$) | 220 | 130 |
| Maximum acceptable condenser inlet water temperature (˚C) | 23.2 | 30 |
| Maximum acceptable condenser outlet water temperature (˚C) | 32.2 | 45.6 |
| Maximum lake water temperature increase (˚C) | 11 | 0 |
| Maximum acceptable discharge water temperature (˚C) | 32.2 | 32.2 |
| Discharge (blowdown) flow rate – CCW ($m^3/s$) | 220 | 0.9 |
| Discharge (blowdown) flow rate – Service water ($m^3/s$) | 30 | 0.12 |
| Evaporative losses flow rate ($m^3/s$) | 0 | 3.7 |
| Make-up flow rate ($m^3/s$) | 0 | 4.6 |
| Land area for condenser cooling water system ($m^2$) | 0 | 156,000 |

## 5. Radioactive Waste Management Strategies

One frequently asked question throughout the EA public consultation process relates to the management of radioactive wastes from the project. This includes the management of both used fuel and intermediate- and low-level wastes. The following sections briefly describe the alternative waste management strategies being considered in the EA.

### 5.1 Used Fuel

The operation of any nuclear reactor generates highly radioactive used fuel. A used fuel bay, located adjacent to the reactor, is a deep water-filled pool and is used for interim storage of spent fuel. The fuel is stored in racks that allow adequate cooling of the fuel and ensure that the array of fuel elements remains sub-critical. The purity of the water in the used fuel bay is maintained by ion exchange treatment. The temperature of the water is maintained by circulating it through heat exchangers.

Current practice in Canada is for used fuel to remain on-site, in the used fuel bay for a period of up to 20 years prior to being transferred to dry storage. There are currently three used fuel dry storage facilities in Ontario, which include one each at Bruce, Pickering and Darlington sites. All of these dry storage facilities are designed to safely store CANDU used fuel generated at the respective sites for a period of several decades. The federal government has mandated the Nuclear Waste Management Organization (NWMO) with the responsibility for identifying and siting facilities for the long-term management of Canada's used nuclear fuel. Depending upon the progress made by the NWMO in establishing a centralized repository, several options are considered for the interim management of the used fuel from the Bruce New Build project:

- Extended **wet storage** at the Bruce site until a NWMO repository is available (assumed to be approximately 20 years). A period of approximately 10 years is required to allow the used fuel to cool.
- Transfer of used fuel to a **dry storage** facility at the Bruce site. OPG currently operates a used fuel dry storage facility at the Bruce site for used fuel from the Bruce A and Bruce B stations.

The EA considers both the storage of used CANDU fuel bundles from the ACR-1000, and the larger fuel assemblies used by light water reactors (AP1000, EPR and ESBWR). The scenarios considered in the assessment are shown in Figure 1, which identifies the two possible dry storage options that depend on the choice of reactor design.

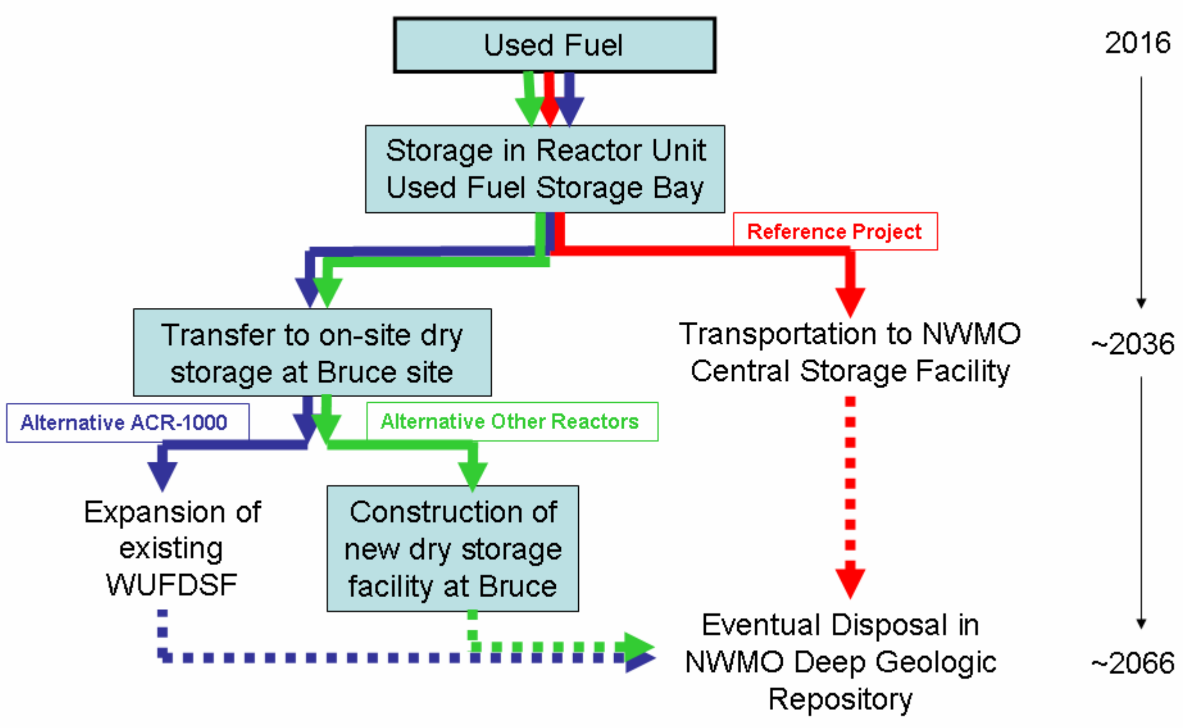


**Figure 1 Alternative Means of Used Fuel Management**

## 5.2 Low and Intermediate Level Radioactive Waste

Dry solid wastes consist of air filters, miscellaneous paper, rags, solid laboratory wastes, contaminated clothing, tools and equipment that cannot be decontaminated. These wastes are typically low level and are subdivided into compactable and non-compactable waste. Compactable waste is compressed in bundles for storage. Non-compactable waste is stored in metallic containers and drums.

Intermediate level wastes include spent ion exchange resins and filters resulting from the removal of radioactivity from the fluid of various systems. In addition, the treatment of liquid wastes by filtration and reverse osmosis generates solid wastes.

The EA is considering two alternatives for the interim management of the low- and intermediate-level radioactive waste as shown on Figure 2. It is assumed that when a long-term management option is available, the wastes would be transferred to that facility. Currently, OPG is planning to construct a Deep Geological Repository at the Bruce site for waste that is currently stored at its Western Waste Management Facility (WWMF), which is also located at the Bruce site.

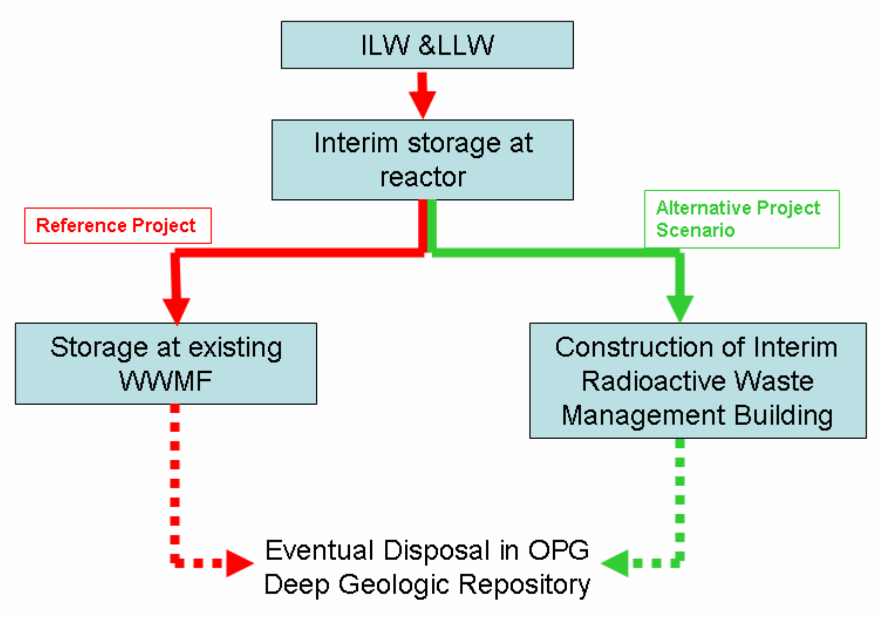


**Figure 2 Alternative Means of Intermediate and Low Level Waste Management**

## 6. Stakeholder and Community Consultation

A key component of the EA process is undertaking public consultation and communication activities, particularly for a project that garners as much public and media interest as a nuclear new build. Indeed, strong community support for the project is recognized by both Bruce Power and the provincial government as essential for successful project implementation. Comments and questions received throughout the consultation process are an integral feature of focussing EA studies, especially those relating to the socio-economic effects of the project, and will ultimately assist Bruce Power and the provincial government in their decision making processes.

Designing and conducting an effective and meaningful consultation and communication program presents two main challenges, which are exacerbated by the uncertainties in the project:

- First, identifying all the stakeholders that should be included in communications and determining how best to communicate project information and solicit feedback from individuals and groups with varying consultation needs and expectations. Our solution is to develop **targeted communications plans**.
- Second, engaging the provincial and municipal agencies that are responsible for identifying and implementing socio-economic policies and programs that could be affected by the project. Our solution is to use **action focussed information exchanges**.

## 6.1 Targeted Communications Plans

Bruce Power is committed to providing all stakeholders with opportunities to gain knowledge about the Bruce New Build project, and to provide input to the EA studies. Two specific communication plans are used to achieve this commitment, namely:

- Bruce New Build Project EA Communications and Consultation Plan.
- Bruce New Build Project EA Non-governmental Organizations Communication Plan.

The first of these communication plans describes specific activities to consult with federal, provincial, and local government agencies, communities near the Bruce site, Bruce Power employees, and the general public. Activities include public open house events, workshops on specific topics (e.g., Valued Ecosystem Components), regular updates of information on a project-dedicated website, and postage-paid reply mailcards inviting the public to join the project mailing list. To date, the project mailing list includes over 500 individuals and organizations who receive on-going communications related to the project. The communication plan is designed to keep information on the project highly visible in community and to provide ample opportunities for face-to-face interactions between community members and senior management at Bruce Power.

Following each communication event, a formal report is produced that summarizes the focus of the discussions and documents every comment or question relating to the project or the EA process to ensure it is addressed. The main concerns identified throughout the consultation program thus far are summarized in Table 4. In each case, the goal is to build consensus on issues to be addressed by the EA studies.

**Table 4**
**Summary of Main Concerns Identified Throughout Consultation Program**

| Identified Concern | Typical Issue Addressed in EA Studies |
|---|---|
| Housing | Competition for rental accommodation and affordable housing between local residents and in-movers during construction |
| Traffic | Increasing traffic congestion on roadways leading to the Bruce site |
| Radioactive Waste Management | Considering two strategies for the interim management of used fuel:<br>1. Extended wet storage and transfer to NWMO repository by 2035<br>2. On-site dry storage |
| Capacity of Social Services | Additional pressures on the availability of healthcare services and support |
| Equity of Taxation | Distribution of taxes paid on behalf of Bruce Power to the Municipality of Kincardine (the host municipality), the County of Bruce, and the school boards |
| Nuclear Accidents | Confidence that the most severe accidents are identified and assessed to provide assurance of public safety |
| "The CANDU Advantage" | Conducting a technology neutral EA may not acknowledge public preferences for the proven and accepted Canadian technology |
| Paying for the Project | Confirming that Bruce Power's investors are responsible for providing the capital investment to undertake the project |
| Transmission | Acknowledging insufficient transmission if electricity generating capacity of Bruce site exceeds 6,200 MW |

Non-governmental organizations (NGOs) are identified as one important category of stakeholders. One of the primary objectives described in the NGO Communication Plan is to determine how and when NGOs are given the opportunity to comment on the EA studies. To satisfy this objective, profiles of local, provincial/national and U.S.-based NGOs that may be interested in the project are developed, and each NGO is contacted to gauge their interest in receiving project information and participating in a workshop tailored to meet their needs. An NGO workshop was organized, and participants were invited to attend sessions that highlighted their specific interests including radioactive waste management, security considerations, malfunctions and accidents, and climate change. The comments and questions raised by NGOs at the workshop are reviewed by the EA study team and are addressed in a workshop report and the EA.

## 7. References

[1] Bruce Power. 2004. *New Fuel Project for Bruce B Environmental Assessment Study Report.*

[2] Canadian Environmental Assessment Agency. 2007. *News Release: Bruce Power New Build Project Referred to Public Review Panel.*

[3] Canadian Nuclear Safety Commission (CNSC). 2006. *Licensing Process for New Nuclear Power Plants in Canada*. Document No. INFO-0756.