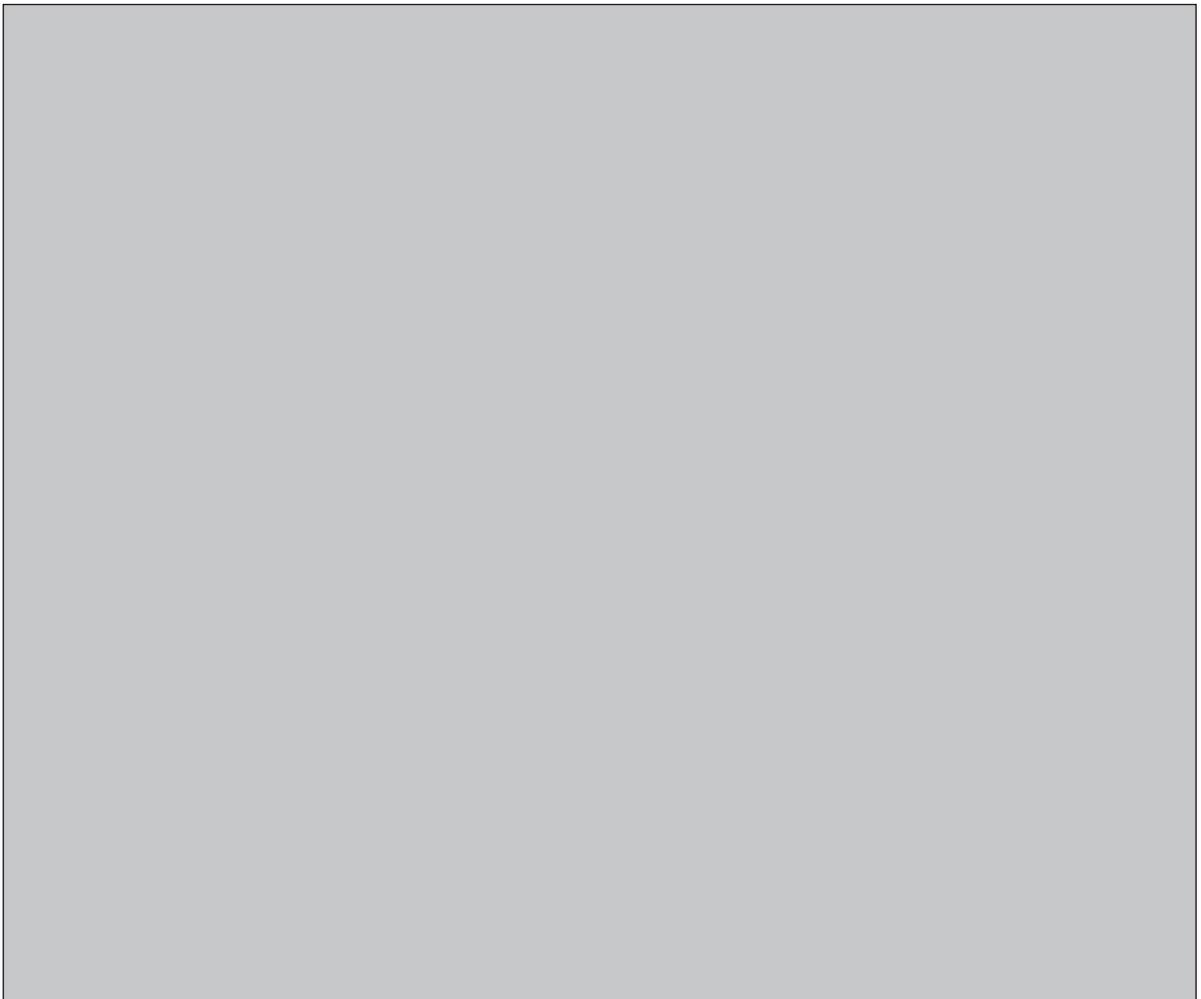


**NWMO BACKGROUND PAPERS**  
**7. INSTITUTIONS AND GOVERNANCE**

**7-8 REVIEW OF THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA)  
PROCESS IN RELATION TO NUCLEAR WASTE MANAGEMENT**

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## **NWMO Background Papers**

NWMO has commissioned a series of background papers which present concepts and contextual information about the state of our knowledge on important topics related to the management of radioactive waste. The intent of these background papers is to provide input to defining possible approaches for the long-term management of used nuclear fuel and to contribute to an informed dialogue with the public and other stakeholders. The papers currently available are posted on NWMO's web site. Additional papers may be commissioned.

The topics of the background papers can be classified under the following broad headings:

1. **Guiding Concepts** – describe key concepts which can help guide an informed dialogue with the public and other stakeholders on the topic of radioactive waste management. They include perspectives on risk, security, the precautionary approach, adaptive management, traditional knowledge and sustainable development.
2. **Social and Ethical Dimensions** - provide perspectives on the social and ethical dimensions of radioactive waste management. They include background papers prepared for roundtable discussions.
3. **Health and Safety** – provide information on the status of relevant research, technologies, standards and procedures to reduce radiation and security risk associated with radioactive waste management.
4. **Science and Environment** – provide information on the current status of relevant research on ecosystem processes and environmental management issues. They include descriptions of the current efforts, as well as the status of research into our understanding of the biosphere and geosphere.
5. **Economic Factors** - provide insight into the economic factors and financial requirements for the long-term management of used nuclear fuel.
6. **Technical Methods** - provide general descriptions of the three methods for the long-term management of used nuclear fuel as defined in the NFWA, as well as other possible methods and related system requirements.
7. **Institutions and Governance** - outline the current relevant legal, administrative and institutional requirements that may be applicable to the long-term management of spent nuclear fuel in Canada, including legislation, regulations, guidelines, protocols, directives, policies and procedures of various jurisdictions.

### **Disclaimer**

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## 1.0 Executive Summary

The Nuclear Waste Management Organization (NWMO) was established under the *Nuclear Fuel Waste Act* (NFWA) to investigate approaches for managing Canada's used nuclear fuel. Used nuclear fuel is a by-product of the generation of electricity in a nuclear power plant. If not managed properly, used nuclear fuel is hazardous to people and the environment for a very long time. Currently, nuclear power plants are operating in Ontario, Quebec and New Brunswick.

When the NWMO makes recommendations to the Government of Canada on an option for the management of Canada's nuclear fuel waste, this option will likely be subject to an environmental assessment process under the *Canadian Environmental Assessment Act* (CEAA). This background paper outlines the basic elements of this process, the responsibilities, decision points, involvement of stakeholders and potential scenarios related to nuclear waste management.

### Environmental Assessment

In general, environmental assessment (EA) is a process to predict the environmental effects of proposed initiatives before they are carried out. The purposes of EA are to minimize or avoid adverse environmental effects before they occur, and to incorporate environmental factors into decision-making.

The CEAA is a federal law that requires federal authorities (departments, agencies, etc.) that are decision makers (i.e. "responsible authorities") to consider the environmental effects of proposed projects before taking any actions that would allow such projects to go ahead. The process is administered by the Canadian Environmental Assessment Agency ("the Agency"). There are also a number of key regulations that make the Act operational such as the *Law List Regulations* (federal permits or authorizations that trigger the Act), the *Inclusion List Regulations* (physical activities that trigger the Act) and the *Comprehensive Study Regulations* (projects that require a comprehensive study under the Act).

There are four different types of EA under the CEAA. A "screening" is typically the minimum level of EA required although some screenings can be reasonably detailed. A "comprehensive study" is the next level and requires more detail, as well as structured public consultation. A "review panel" is the more formal EA involving a group of experts selected on the basis of their expertise and appointed by the Minister of the Environment. They review and assess, in an impartial and objective manner, a project with likely adverse environmental effects using formal public hearings. "Mediation" is an infrequently used voluntary process of EA negotiation in which an independent and impartial mediator (appointed by the Minister of the Environment) helps interested parties to resolve their issues. For all types of EA, a decision is eventually taken to proceed or not proceed depending on the projected significance of the environmental effects.

## Recent Amendments

### CEAA

On October 30, 2003, amendments to improve and strengthen the CEAA came into force. Although the basic triggering mechanisms of the Act have not changed, there are a number of amendments that will impact the EA process related to nuclear waste management. These include additions to the purposes of the original Act (e.g. to emphasize federal-provincial harmonization and the involvement of Aboriginal peoples); the inclusion of Crown Corporations such as AECL under the Act; a new role of federal EA coordinator to improve efficiency; changes to improve the Comprehensive Study process and include a participant funding program; a new Canadian EA Registry with mandatory posting requirements; and new duties and powers for the Agency.

### Nuclear Safety and Control Act

In May 2000, the *Nuclear Safety and Control Act* (NSC Act) came into effect. The NSC Act was the first major overhaul of Canada's nuclear regulatory regime in over fifty years and replaced the *Atomic Energy Control Act*. The NSC Act establishes the Canadian Nuclear Safety Commission (CNSC) to replace the Atomic Energy Control Board and provides the authority and basis for licencing nuclear activities

### Amendments to Regulations under CEAA

On October 24, 2003 amendments to key regulations under the CEAA came into force to align the federal EA process for the nuclear sector with the requirements of the NSC Act. The amendments reflect the NSC Act and recognize the establishment of the Canadian Nuclear Safety Commission (CNSC). These amendments to the regulations under CEAA ensure that EAs will be required before the CNSC takes actions to licence a nuclear-related project.

## Federal-Provincial Relations

Some projects require authorization from both the federal government and a provincial or territorial government. Without close cooperation, a project might need to undergo separate EAs, resulting in unnecessary duplication, confusion, and excessive costs. Harmonization of Canada's various EA processes helps create a more favourable atmosphere for private-sector decision-makers by streamlining approval processes and reducing planning uncertainties and delays.

The CEAA allows the Minister of the Environment to enter into agreements with provincial and territorial governments relating to the EA of projects where both governments have an interest. The bilateral agreements provide guidelines for the roles and responsibilities of each government. Agreements are imminent in Ontario and Quebec and although progress on a formal agreement has not been made in New

Brunswick, a project-specific agreement could be established where needed. Joint federal-provincial review panels have been successfully utilized in the past and will likely come into play in the future for the more significant options of the NWMO.

### Conclusions and NWMO Implications

The federal EA process will come into play in the future when the NWMO makes a recommendation to government and then moves to an implementation stage. Although the NWMO (and the utilities) will be deemed the proponents for any project, the federal government will also play a significant role in an EA process, predominantly through the licencing responsibilities of the CNSC and the responsibilities of the Agency to administer the CEAA.

If an option for deep geological disposal is recommended and accepted by the federal government for a particular site, it is likely that a review panel would be recommended (even though it would theoretically start as a “comprehensive study”). The project would be referred by the Minister of Natural Resources to the Minister of the Environment for establishment of the review panel. The review panel would focus on the region of the proposed site and invite the participation of the relevant province and/or territory. The result of such a review panel would be recommendations to proceed, proceed with alterations or not proceed with a project depending upon the significance of the predicted environmental effects after mitigation.

The same scenario would likely unfold if any other large-scale above or below ground proposal were to be recommended and accepted that would involve centralizing the storage of the nuclear waste. Although the federal EA process would again theoretically begin with a “comprehensive study”, the extensive requirement for transportation of the nuclear waste along with the anticipated public concern would likely dictate the need for a review panel. Again, the review panel would likely concentrate on the centralized storage site location but also involve regions where the waste is currently located and areas along proposed transportation routes.

If the option of storage at the existing reactor sites is recommended and accepted, the EA process could take a different shape. This could involve projects such as expanding the capacity for dry storage of the waste either within or outside a currently licenced nuclear facility. The CNSC licences or renewal of licences may only require a “screening” if the proposed project were to fall within these existing boundaries. If the project were to include areas outside of the existing boundaries of the nuclear facility, a “comprehensive study” would be required. The CNSC currently undertakes rather detailed “screenings” of projects including consultation of the public, such that the differences between “screenings” and “comprehensive studies” are not significant. Although it is unlikely (even with a recommendation for an option close to the status quo), it is possible that we would not have a “project” under the CEAA and that the Act would not formally apply. Any proposal, however, to postpone a decision on a preferred long-term option would in itself have significant implications and may be deemed worthy of a review panel.

Although a number of scenarios and related EA processes are discussed in this paper, final decisions on the appropriate level of assessment required should wait until an actual project has been identified and more clearly defined. The complexity of the federal EA process and potential legal implications dictate that caution and careful scrutiny are required before decisions should be taken in this regard. The NWMO should not underestimate the time and effort that will be required for any EA process, regardless of the track taken. Although not a given, a full review panel appears to be a likely outcome for assessing a more significant NWMO recommendation and should thus be anticipated.

## 2.0 Introduction

When the NWMO makes a recommendation to the Government of Canada on the option or options for the management of Canada's nuclear fuel waste, the project defined will likely be subject to an environmental assessment process under the *Canadian Environmental Assessment Act* (CEAA) before the project can be implemented. The purpose of this paper is to outline the basic elements of this process and to indicate the responsibilities, decision points, involvement of stakeholders and potential scenarios related to nuclear waste management. Some of the material in this paper is extracted from the Web Site of the Canadian Environmental Assessment Agency ([www.ceaa.gc.ca](http://www.ceaa.gc.ca)) to ensure accuracy of some of the basic interpretations of the CEAA. This paper directly supports a framework to address the elements related to the question on "environmental integrity" that is contained in the discussion document recently released on the Web by the NWMO, namely "Does the management approach ensure the long-term integrity of the environment?"

## 3.0 Environmental Assessment (EA) Past, Present and Future

Although the practice of EA dates back to examples such as the review of the Mackenzie Valley Pipeline Proposal in the 1970s, the process was first formalized on June 22, 1984 with the issuance of the *Environmental Assessment and Review Process (EARP) Guidelines Order*. This provided departments and agencies of the federal government with guidelines for implementation of the federal government's policy on EA and review. After several legal challenges, the courts deemed that the Guidelines Order was to be interpreted not as a "guideline" but as a general law of application. The federal government then decided that it would be prudent to develop legislation to spell out a more comprehensive EA regime.

In June 1992, after nation-wide consultations and comprehensive parliamentary review, Bill C-13, the *Canadian Environmental Assessment Act* received royal assent. The Act, which provided a legal basis for federal environmental assessment, came into force on January 19, 1995.

Then, as a result of the five-year review of the Act, the Minister of the Environment tabled a report to Parliament and introduced amendments to strengthen the process in March 2001. Bill C-9, an Act to amend the *Canadian Environmental Assessment Act*, received royal assent on June 11, 2003 and came into force on October 30, 2003. The Act will continue to evolve over time as further experience is gained and will be subject to another formal parliamentary review within seven years of the June 11, 2003 royal assent date.

## 4.0 The Environmental Assessment (EA) Process

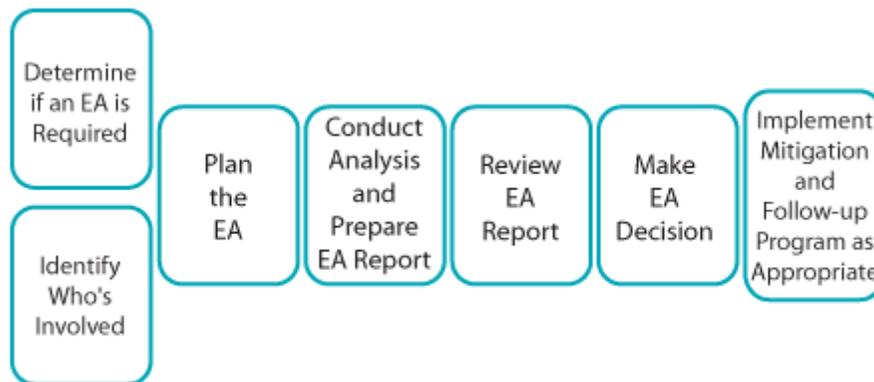
In general, EA is a process to predict the environmental effects of proposed initiatives before they are carried out. The purposes of EA are to minimize or avoid adverse

environmental effects before they occur, and to incorporate environmental factors into decision-making. An EA:

- identifies possible environmental effects
- proposes measures to mitigate adverse effects, and
- predicts whether there will be significant adverse environmental effects, even after the mitigation is implemented

The *Canadian Environmental Assessment Act* is a federal law that requires federal authorities or FAs (departments, agencies, etc.) that are decision makers (i.e. "responsible authorities" or RAs) to consider the environmental effects of proposed projects before taking any actions that would allow such projects to go ahead. These RAs may be proponents of projects, providing funding, have transactions involving their lands or be regulators. Other FAs can also participate in the process as advisors or interveners. Roles are spelled out in regulations. In most cases, projects are not allowed to proceed until all significant adverse environmental effects have been identified and addressed. The process is administered by the Canadian Environmental Assessment Agency ("the Agency"). This background paper provides the highlights of the process requirements that will likely be required in terms of EA related to nuclear waste management. More detailed information related to the Act and its requirements can be found on the Agency's Web Site. Figure 1 shows the basic EA process.

**Figure 1 - Environmental Assessment Process**



These stages of EA can be carried out by different actors. The department or agency initiating a project determines if the Act applies and an EA is required (this is done cooperatively if there is more than one RA). The EA may be done by the RA, a proponent or a consultant although the RA maintains responsibility. Depending on the level of EA undertaken, decisions may be taken by the RA (on a screening) or the Minister of the Environment (comprehensive study, review

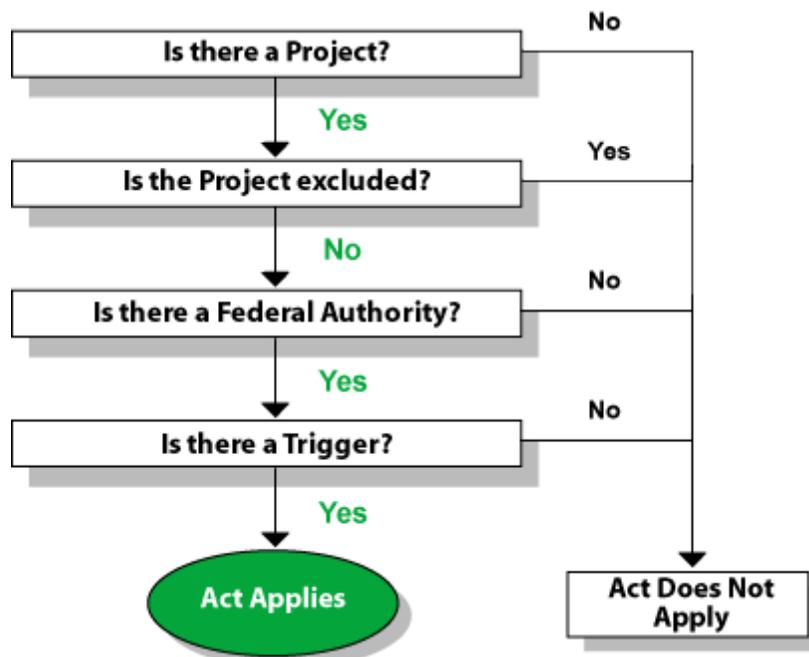
panel or mediation). Mitigation and follow up may be undertaken by a proponent or consultant but again the RA has the ultimate responsibility.

#### 4.1 Does CEAA Apply?

In order for the *Canadian Environmental Assessment Act* to apply (and thus an EA is required), the following criteria must be met (see figure 2 for the process chart):

- **Project** – a project must be an undertaking (e.g. construction, operation, decommissioning) in relation to a physical work or a physical activity listed in the *Inclusion List Regulations*;
- **Excluded Projects** – if a project is listed in the *Exclusion List Regulations* or is in response to special emergency situations, the Act does not apply.
- **Trigger** – a project will require a federal decision under the Act (federal proponent, federal funding, disposal of federal lands, or a federal regulatory decision specified in the *Law List Regulations*). For the nuclear waste management projects being considered in the context of this paper, the licencing decisions to be taken by the Canadian Nuclear Safety Commission (CNSC) will provide a trigger for the CEAA.

Figure 2 - Determining if the Act Applies



The Nuclear Waste Management Organization (NWMO) was established through the *Nuclear Fuel Waste Act* and the legislation requires the Organization to evaluate at least three options for the management of Canada's nuclear waste and to make recommendations to the Government of Canada. The prescribed options include deep geological disposal in the Canadian Shield, storage at the nuclear reactor sites (as is currently the case), and centralized storage either above or below ground. These waste management options would in most cases be considered "projects" under the CEAA (it is possible that some variation on the status quo would not be deemed a "project"). These projects will also have at least one trigger for the CEAA through the licencing decisions to be taken by the CNSC. Nuclear fuel waste management projects are unlikely to be excluded under the CEAA unless there is a special emergency situation.

A background paper developed by International Safety Research (ISR) entitled "Review of the CNSC Licencing Process in Relation to Spent Fuel Management" provides details on the CNSC licencing process and also describes some anticipated scenarios for the EA process assuming that the CNSC would be the main RA involved. The CNSC is responsible for taking all decisions with respect to the issuance of a licence for a nuclear-related facility. The Agency is responsible for administration and providing direction for a federal EA process that must be undertaken and completed before the CNSC can take any such decision. The CNSC becomes an RA once the public has been notified that a project exists that will require a licence. The licencing and EA processes are thus intrinsically linked and thus it is important that this paper on the CEAA process be read in the context of the ISR licencing paper.

#### **4.2 Levels of Environmental Assessment (EA)**

The basic types of EA and the description of the level of detail involved are as follows:

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 (if the effects are deemed to be significant). RAs undertake screenings and are responsible for process decisions. Although some screenings can go into considerable detail, others are quite brief and this is normally recognized as the minimum level where an EA is required. Major projects related to nuclear waste management are unlikely to fit in this category. Some projects subject to expansion of dry storage capacity for nuclear waste (within the boundaries of an existing licenced facility) could be dealt with through a screening. A screening varies in terms of the time required but could typically be done within several months. However, the CNSC insists on public participation and reviews each step in the process, and as a result 18 months is a more reasonable predicted time frame. Two specific examples (including timeframes required) related to the

screening of projects at Point Lepreau and Gentilly are discussed in the previously referenced ISR background paper on the licensing process.

Comprehensive Study - The large majority of federal projects are assessed through a screening. However, some projects require a more detailed EA known as a “comprehensive study”. These projects are described in the *Comprehensive Study List Regulations* (see next section on key regulations). These tend to be large projects having the potential for significant adverse environmental effects. They may also be projects that tend to generate public concerns. The construction, operation and decommissioning of nuclear power developments and nuclear waste management facilities (not within the boundaries of an existing licenced nuclear facility) are examples of such projects. The RA is responsible for undertaking the comprehensive study. Early in the process, 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. This decision is based on preliminary information gathered by the RA along with an assessment of anticipated public concern. 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 at a later date. This process decision is explained in more detail in the section on amendments (comprehensive study process). In terms of time required, the Agency is trying to limit the timeframe for a comprehensive study to one year, although this does not include the time required for the proponent to put together the report and respond to requests for additional information. A total time period of 18 months to 2 years is probably more realistic. It is also noted that participant funding will now be made available for these comprehensive studies.

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 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 are referred by the RA to the Minister of the Environment (say for a screening that has determined that a review panel would be warranted). Only the Minister of the Environment may order an assessment by a review panel upon referral by an RA. Review panels may be ordered by the Minister of the Environment if a comprehensive study is deemed to be insufficient.

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 review 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. Review panels will most likely be required for any major project related to nuclear waste management due to the

potentially significant adverse environmental effects as well as the likely public interest and concern with respect to the issues.

The Agency has guidelines for a review panel that reference a period of 13 months for the entire government process not including time required for the preparation of the impact statement by the proponent and requests for additional information. Knowing the complexity of the issues and public interest related to nuclear waste management, a 2-3 year period for a review panel would be more realistic for planning purposes.

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 RA and the interested parties. Mediation can be used to address all issues that arise in a project's EA 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. Although the mediation assessment track has never been formally used, it could be an appropriate option if the interested parties are willing to participate and a consensus seems possible. It would likely be more effective where there are only a few interested parties and the issues are limited in scope and number. Mediation could be a viable option to address specific issues related to nuclear waste management, but would most likely have to be utilized in combination with a review panel. The timeframe required would depend on the complexity of the issues to be mediated.

### **4.3 Key Regulations of the CEAA**

There are several key regulations developed under the CEAA that make the Act and its process operational. The ones that are important for nuclear waste management are as follows:

*Law List Regulations* – prescribes provisions of federal acts and regulations that confer powers, duties or functions on federal authorities, the exercise of which requires an EA under CEAA. The CNSC licencing of nuclear waste management options is included in these regulations and thus triggers the Act.

*Inclusion List Regulations* – prescribes physical activities and classes of physical activities not relating to physical works that may require an EA. This includes the abandonment or disposal of a nuclear substance (where a physical work may not be involved) and ensures that such a physical activity is deemed to be a “project” under CEAA.

*Comprehensive Study List Regulations* – prescribes those projects and classes of projects that tend to be larger and have the potential for significant adverse environmental effects or public concern. These projects require a more detailed

EA known as a “comprehensive study”. The proposed construction, operation or decommissioning of a site for nuclear waste management (outside the boundaries of an existing licenced nuclear facility) is included on the Comprehensive Study List.

*Exclusion List Regulations* – prescribes those projects and classes of projects for which an EA is not required (Governor in Council [GIC] has determined that such projects have insignificant environmental effects). Nuclear waste management projects are unlikely to be excluded under CEAA, except perhaps in response to a special emergency situation.

*Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* – address the coordination of federal authorities involved in EAs including consultation and timing requirements and ensures one federal assessment for one project. These regulations will be updated (likely in mid 2004) in light of recent amendments to CEAA that specify a “Federal EA Coordinator” (see next section). There will likely be a number of federal authorities (besides CNSC) that could also be RAs, be advisors or wish to intervene in the EA process (e.g. Environment Canada, Fisheries and Oceans Canada, Natural Resources Canada, Transport Canada, AECL) where coordination will be required.

## **5.0 Recent Amendments to the CEAA**

On June 11, 2003, legislation to improve and strengthen the CEAA received Royal Assent. Proclamation of the new legislation was on October 30, 2003. Although the basic triggering mechanisms of the Act have not changed, there are a number of amendments that will have an impact on the EA process for assessing the options related to nuclear waste management. For the full list of amendments to the Act, the reader is directed to the Agency Web Site and specifically the document *Explanation of the Amendments to the Canadian Environmental Assessment Act* (October 2003).

The following summary highlights the amendments of most significance to nuclear waste management:

### **5.1 Purposes of the Act**

To further clarify and provide emphasis for certain concepts related to CEAA, several new purposes of the Act were included in the amendments. One relates to the precautionary principle: “to ensure that projects are considered in a careful and precautionary manner before federal authorities take action to ensure that projects do not cause significant adverse environmental effects”. This purpose is expanded upon and emphasized through a “duty” of the Government of Canada to “exercise powers in a manner that protects the environment and human health and applies the precautionary principle”. This has always been an important concept in assessing nuclear related projects and dose-response relationships. It is also identified as an important principle in

the recently released discussion document of the NWMO. The Privy Council Office has provided more generic guidance on use of the precautionary principle on their Web Site at [www.pco-bcp.gc.ca](http://www.pco-bcp.gc.ca).

A second new purpose provides greater emphasis for the significance of federal – provincial relations: “to promote cooperation and coordinated action between federal and provincial governments with respect to EA processes”. This supports the need for NWMO to engage provincial and territorial governments in their work plan activities as well as in any related EA processes. Federal-provincial bilateral EA agreements and an annual EA administrators meeting (federal and provincial representatives) are two of the vehicles that support this purpose of the CEAA.

A third new purpose seeks to “promote communication and cooperation between responsible authorities and aboriginal peoples with respect to EA”. Again, NWMO should be cognizant of this new purpose of CEAA in terms of the more formal requirement to engage aboriginal peoples. The Agency is creating an “Aboriginal Advisory Committee” to discuss policy issues related to the CEAA and approaches to improve the involvement of aboriginal peoples in the EA process. It is also noted that the definition of “environmental effect” in the Act includes any effects of environmental change on the “current use of lands and resources for traditional purposes by aboriginal persons”.

## 5.2 Crown Corporations

Parent Crown corporations are now to be included within the Act’s definition of a “federal authority” and there are new regulation-making authorities to tailor the EA process to address the unique or competitive circumstances of a particular Crown corporation. The amendment to cover Crown corporations comes into effect on June 11, 2006 (3 years after Royal Assent of the revised Act), thus allowing time for these Crown corporations to prepare, or to develop regulations that modify the EA process. Atomic Energy of Canada Limited (AECL) is one of the Crown corporations that will become subject to the CEAA, which may implicate them if and when they become a proponent of a recommended nuclear waste management option. Although the regulator (CNSC) as an RA would likely take the lead role in carrying out the EA, consultation with and involvement of AECL would be important to reflect their input. This would be particularly important if AECL were to undertake nuclear fuel waste management activities separately from the NWMO (in which case it would be a proponent).

## 5.3 Federal Environmental Assessment Coordinator (FEAC)

In recognition of the difficulties that may arise where more than one entity is involved or interested in the EA of a project, the amendments create the “Federal Environmental Assessment Coordinator” or “FEAC”). The FEAC role applies to every screening and comprehensive study conducted under CEAA to address procedural and administrative issues. Regulations (*Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements*) made under paragraph 59 (a)

and (a.1) of the CEAA will be amended to specify and expand upon this role, duties and powers. Every FA involved in the EA of a project must comply in a timely manner with requests and determinations made by the FEAC in the course of carrying out its duties or functions.

The Agency is normally the FEAC for any projects subject to a comprehensive study or for any multi-jurisdictional assessments. This amendment means that the Agency will be responsible for coordination of federal authorities on any comprehensive study even though CNSC would likely be the major participant in the process. There is also the ability to transfer the FEAC role for a comprehensive study from the Agency to an RA via an agreement. It is noted that on most “screenings”, an RA such as the CNSC would normally be the FEAC.

#### 5.4 Regional Studies

A regional study is an environmental study outside the scope of the CEAA where jurisdictions have agreed to study existing and anticipated future projects in a region. Such a study can bring together stakeholders such as federal, provincial and municipal governments, Aboriginal governing bodies, the private sector and non-governmental groups in a non-confrontational manner. They can investigate important issues such as potential cumulative environmental effects of future development (note that the studies can be done before a formal EA process is initiated). A regional study can help to more equally distribute the costs of environmental baseline work required in a region and to investigate broader sustainable development issues. The new CEAA now clarifies that where such a study has been conducted, the results of such a study may be taken into account in conducting an EA of a project in that region. A regional study could also support a joint federal-provincial review assuming that the province is a partner in the study. A good example of a “regional study” was the Northern Rivers Basin Study which developed an EA decision-making framework for development (e.g. pulp and paper, oil sands) in the Peace-Athabasca river systems of Northern Alberta.

Nuclear waste management is a subject area that could potentially benefit from such a study in the future. The fact that regional studies have been formally recognized in the CEAA and can help meet the requirements of the Act provides greater incentive for jurisdictions to initiate such a study. It is also noted that a non-mandatory regional study could provide support for the specific requirement of the CEAA to assess potential cumulative environmental effects of projects.

#### 5.5 Mitigation and Follow-Up

Another amendment of significance is that follow-up programs are now mandatory following a comprehensive study, mediation or review panel (previously follow-up was to be “considered”). Any information related to the design and results of a follow-up program must also be placed on the new Canadian Environmental Assessment Registry (see amendment re new registry requirements).

The Act has also been amended to specify that mitigation measures and follow-up programs may impose conditions beyond the immediate scope of the legislation that provided the authority to grant the specific permit or licence. This amendment clarifies previous legal uncertainty in this area. An RA such as the CNSC can now impose mitigation measures related to say fish habitat or migratory birds, even though such measures are not referenced directly in the CNSC licencing requirement that triggers the CEAA. Fisheries and Oceans and Environment Canada would, however, be required to provide assistance in developing such measures, to ensure implementation and to carry out any necessary follow-up. The amendments to the CEAA also clarify that an RA may take into account mitigation measures to be implemented by another “person or body”, such as measures that would have to be imposed by a provincial government.

These issues are likely to come into play in terms of any EA conducted on nuclear waste management options. The types of mitigation measures and follow-up programs that will be required are likely to implicate a wide range of authorities and jurisdictions.

### 5.6 Comprehensive Study Process

There are a number of amendments that relate to the comprehensive study process. Since it is likely that a number of nuclear waste management projects will be subject to a comprehensive study, review panel or mediation, the following amendments form an important part of the EA roadmap for the work of the NWMO.

There are now increased opportunities for public participation in the comprehensive study process. Public consultation is now required on the proposed scope of the project to be assessed, the factors to be considered, the proposed scope of those factors and the ability of the comprehensive study to address issues relating to the project. After this public consultation, and when an RA considers that it has enough information, a recommendation is made to the Minister of the Environment to determine whether the project should continue to be assessed as a comprehensive study or whether a review panel or mediation would be more appropriate. The Minister of Environment then takes this process decision. This ensures that a project is not subject to both a comprehensive study and then a mediation or review panel at a later date. If the review is to continue as a comprehensive study, the public must be provided with further opportunities to participate in the process (previously there was only a requirement to consult the public on the comprehensive study final report).

A new participant funding program for comprehensive studies (under new subsection 58(1.1) of the CEAA) has also been established (by the Agency) to support this expanded requirement for public participation. Previously, participant funding was available only for mediations and assessments by review panels. For each comprehensive study, the Agency will announce the availability of these funds and how to apply, and recommendations for funding will be made by a committee consisting mainly of independent experts who will review the applications.

The Minister of Environment must also issue an “environmental assessment decision statement” following public review and comment on the completed comprehensive study report. The Minister shall not issue the EA decision statement until the items listed in new subsection 23(3) (i.e. notice of commencement, scope of project and assessment, final comprehensive study report) have been on the Registry’s Internet Site for 30 days (see amendment re new registry requirements). The Minister of the Environment may request additional information, set out mitigation measures or a follow up program as well as require that action be taken to address public concerns before issuing the EA decision statement. The 30 day period is also recommended in terms of the time to be allowed for public comment on the final comprehensive study report.

### 5.7 Canadian Environmental Assessment Registry

A revised section 55 of the CEAA calls for the establishment and maintenance of a new “Canadian Environmental Assessment Registry” (the Registry). New subsection 55(1) specifies that the new Registry consists of:

- a government-wide Internet site of project information; and
- Project files formerly called “public registries” in the original CEAA.

Participation in this Registry is mandatory, whereas previously the Agency kept an “Index” of EA information contributed by departments on a voluntary basis. Although the Agency manages the Registry, RAs must submit required documentation.

New subsection 55(2) clarifies that the right of access to the Registry under CEAA is in addition to any access provided under another Act of Parliament. For example, individuals requesting documents on the CEAA Registry cannot be required to use the process under the *Access to Information Act*.

The objectives of the new Registry are to:

- retain previous requirements for convenient public access to EA records;
- use the Internet site as a means of public notification;
- provide public access to EA information in a user-friendly and timely manner;
- promote greater public use of the Registry;
- facilitate access to the various documents related to an EA; and
- obtain information to support the quality assurance program for EAs.

The new section 55.1 of the CEAA itemizes the various documents, agreements, notices, decision statements, declarations, summaries or other records that must be placed on the Internet Site of the Registry. The duties to provide this material (within and for the required timeframes) are shared between the Agency and the RAs involved.

New section 55.4 governs the part of the Registry to be contained in “project files”. These are the hard copy records that must be maintained under CEAA. These amendments retain the need for convenient public access to these project records and

documents. “Project files” replaces the term “public registry” that was used in the previous version of the CEAA.

NWMO and other stakeholders involved in nuclear waste management should be aware of these new Registry requirements to both comply with the Act and to support informing and engaging the Canadian public in the EA process. Compliance with the Act’s requirements would best be facilitated by a clearly defined process.

### 5.8 Duties and Powers of Agency

The amendments to the CEAA provide new “objects” and “duties” for the Canadian Environmental Assessment Agency. The most significant changes that could implicate the EA process for nuclear waste management options are the following:

- a new object of the Agency is to promote, facilitate and monitor compliance with the Act and the overall quality of EAs;
- to support this object, the Agency has a new duty to establish and lead a quality assurance program for assessments conducted under the Act (RAs and FAs must supply requested information);
- a new object of the Agency is to engage in consultation with aboriginal peoples on policy issues related to the CEAA; to support this object, the Agency will establish an “Aboriginal Advisory Committee” to provide advice on EA issues and to identify uses for traditional knowledge;
- the Agency becomes the Federal EA Coordinator for all comprehensive studies and multi-jurisdictional screenings;
- the Agency (on behalf of the Minister of the Environment) has been given the authority to coordinate the development of a government response to the report of a review panel or mediator (intended for cases where there are multiple RAs and/or FAs); this could definitely come into play with EAs related to nuclear waste management;
- the Agency has been given the authority to assist parties in building consensus and resolving disputes (this role may prove useful when it comes to the controversial issues related to nuclear waste management); it also builds on Agency efforts to increase the use of dispute resolution techniques.

### **6.0 Nuclear Safety and Control Act**

In May 2000, the *Nuclear Safety and Control Act* (NSC Act) came into effect. The NSC Act is the first major overhaul of Canada's nuclear regulatory regime in over fifty years. The legislation reflects the increased federal focus in nuclear affairs on health, safety, security, and environmental protection. It replaced the *Atomic Energy Control Act* (AEC Act), and the Atomic Energy Control Board (AECB) was replaced by the Canadian Nuclear Safety Commission (CNSC) which now carries out the federal government's nuclear regulatory responsibilities.

## 6.1 Related Changes to CEAA Regulations

On October 24, 2003, amendments (nuclear related) were announced to the key regulations under the *Canadian Environmental Assessment Act* (CEAA) to align the federal EA process for the nuclear sector with the requirements of the NSC Act. The amendments to the regulations of the CEAA were necessary to reflect the NSC Act and to maintain nuclear licencing actions as a trigger of the CEAA. The amendments also recognize the establishment of the CNSC and in some cases were merely improvements or clarifications that had been recommended for some time. Highlights of the amendments are included in the paragraphs below.

An important change in the *Exclusion List Regulations* will exempt the simple transfer of an ongoing operation from the federal EA process. This amendment will apply to all existing physical works and is not limited to nuclear facilities. For example, the transfer of ownership or responsibility for the operation of an existing facility – nuclear or non-nuclear – without any interruptions or changes in operations would not require an EA under the CEAA.

The previous section 20 of the *Inclusion List Regulations* ensured that an EA would have been carried out prior to the licencing of abandonment or disposal activities under the AEC Act, which could result in the release of nuclear substances at levels that could have more than a trivial impact on health, safety and the environment. Under the NSC Act, the threshold for releases that may have more than a trivial impact on public health and safety has been prescribed and equates to approximately 1% to 5% of the effective dose limit for a member of the public, as reflected in subsection 13(1) of the *Radiation Protection Regulations* under the NSC Act. This change has been reflected in the *Inclusion List Regulations*.

The *Law List Regulations* prescribe specific provisions of federal statutes and regulations (such as elements of the NSC Act) that trigger a federal EA before a licence can be issued or amended. This means that an FA such as the CNSC cannot issue or amend a licence to allow a project to proceed without first ensuring that an EA is conducted. The CNSC's licence-issuing responsibilities are now contained in the NSC Act and have thus been updated in the *Law List Regulations*.

The CEAA empowers the Minister of the Environment to provide advice and training to the CNSC and others, to enable them to discharge their responsibilities under the Act and its regulations. Compliance with the amendments to the regulations will be promoted in two ways. First, the Agency's Quality Assurance Program will assess whether the CNSC and other FAs have any specific problems in adhering to the CEAA and its regulations, as amended. Secondly, the Agency's Regional Offices will help the CNSC and other FAs to exchange information with each other about specific project EAs, thereby assisting them in complying with their EA responsibilities.

The majority of nuclear projects requiring licencing under the NSC Act and requiring an EA under the CEAA have previously undergone either a screening or a comprehensive

study. Some previous examples and the type of EA that was undertaken are provided here along with some important observations related to the EA decision:

Whiteshell Nuclear Research Laboratories Decommissioning in Manitoba: comprehensive study undertaken since the decommissioning of facilities is included in the *Comprehensive Study Regulations* of the CEAA;

Bruce Power Heavy Water Plant Decommissioning: comprehensive study undertaken for the same reason as the previous item;

Establishment of the Bruce Used Fuel Dry Storage Facility in Ontario: comprehensive study undertaken since the required storage facilities extended outside of the previously licenced nuclear facility (the criterion specified in the *Comprehensive Study Regulations* of the CEAA);

Point Lepreau Solid Radioactive Waste Management Facility: screening undertaken since the project was within the boundaries of the existing licenced nuclear facility and thus was not included in the *Comprehensive Study Regulations* of the CEAA;

Darlington Used Fuel Dry Storage Facility: screening undertaken since the project was within the boundaries of the existing licenced nuclear facility.

The section at the end of this report entitled “Conclusions and Implications for NWMO” offers an analysis of the level of EA that would be likely be required for a variety of potential future scenarios and related projects.

## **7.0 Federal – Provincial Harmonization**

Some projects require authorization from both the federal government and a provincial or territorial government. Without close cooperation, a project might need to undergo separate EAs, resulting in unnecessary duplication, confusion, and excessive costs for all parties. As noted in the amendment section, one of the new “purposes” of CEAA is to promote cooperation and coordinated action between federal and provincial governments with respect to EA processes. This provides significant emphasis for the importance of federal – provincial harmonization.

Harmonization of Canada's various EA processes is essential if the environmental effects of projects are to be assessed in an effective and consistent way across the country. Harmonization also helps create a more favourable atmosphere for private-sector decision-makers by streamlining regulatory approval processes and reducing planning uncertainties and delays.

Given the potential for overlapping EAs, the CEAA allows the Minister of the Environment to enter into agreements with provincial and territorial governments relating to the EA of projects where both governments have an interest.

The bilateral agreements provide guidelines for the roles and responsibilities of each government in the EA of such projects. The agreements cover cooperation in such areas as joint panels, mediation, screening, comprehensive studies, notification, cost-sharing, and time frames. The agreements formalize procedures that would otherwise have to be negotiated on a case by case basis. It is important to note that where bilateral agreements are not in place, project-specific arrangements have been used in the past to avoid duplication.

### 7.1 Status of Agreements in Key Provinces

Although it is possible that all of the provinces and territories will want to participate in future EA processes related to nuclear waste management, there are several that may need to be involved because of more specific decision-making. This is particularly true for provinces that have nuclear reactors (Ontario, Quebec and New Brunswick). It may also be the case for Manitoba that currently has the “underground research laboratory” although at this date, Manitoba also has legislation preventing the disposal of nuclear fuel waste.

Ontario – Because of Ontario’s rather formal EA process, the negotiation of an agreement has been difficult. However, a first draft of a bilateral agreement has been agreed upon and will soon be out for public consultation. The agreement deals with comprehensive studies as well as review panels and ensures cooperation and a single assessment for projects.

Quebec – Progress has recently been made with the Liberal government and a draft agreement has been released for public consultation. Premier Charest has taken a particular interest in getting this agreement moving.

New Brunswick – For unknown political reasons, an agreement has not yet been developed. If there were to be options related to Point Lepreau that required provincial decision-making, a project-specific cooperative agreement would have to be negotiated.

Manitoba – a bilateral agreement is in place which would ensure the necessary federal-provincial cooperation.

The joint panels held in Saskatchewan on uranium development (mid 1990s) could be an important precedent for the NWMO in terms of some of the issues discussed (e.g. long-term management of tailings) and the cooperation that was established with the federal and provincial governments.

### **8.0 Seaborn Review Panel vs. Current Review Panel Process**

In the late 1970s, Atomic Energy of Canada Limited (AECL) began to develop the concept of deep geological disposal of nuclear fuel waste. In September 1988, the federal Minister of Energy, Mines and Resources referred the concept, along with a broad range of nuclear fuel waste management issues, for public review. He made this referral under

the federal *Environmental Assessment and Review Process Guidelines Order* which preceded the CEAA. The concept of deep geological disposal was deemed to be a “proposal” under this Guidelines Order, although under the CEAA of today, it is clear that this “proposal” would not be considered a “project” and thus would not trigger the Act.

The 1990 Review Panel chaired by Mr. Blair Seaborn evaluated the concept of deep geological disposal of nuclear waste. Since the federal and Ontario governments had decided at that time that a disposal facility site would not be selected until the public had reviewed the concept and the governments had accepted it, the Minister asked that no site be contemplated during the review. As such, the review panel did not deal with a specific site and the deliberations were therefore more scientifically generic than what will likely take place with an option to be evaluated by the NWMO. In terms of modeling and experimental verification of scientific and technical phenomena that will be important in terms of the design of a disposal facility, the deliberations were, however, quite detailed.

The Seaborn review panel also did considerable research and reported on international experience with respect to deep geological disposal and related EA processes (see Appendix K of the “Report of the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment Panel”, available on the Agency Web site). This appendix provides a global context for high-level nuclear fuel waste management and illustrates where AECL’s concept for deep geological disposal fits into the international consensus on managing wastes. It highlights the programs of nine countries for managing nuclear wastes and includes a summary of any public review processes that exist. Most countries with significant nuclear power programs are developing a management strategy involving the geological disposal of their radioactive wastes. These programs and the related research tend to focus on one waste facility in each country. These facilities are expected to be operational by the first quarter of the 21<sup>st</sup> century although to date no country has successfully implemented such a facility.

The process requirements for review panels are somewhat better prescribed under the CEAA than was the case under the Guidelines Order, although there are many similarities. Coordination of federal authorities is now better prescribed under regulations, and there will be implications in terms of the new Canadian Environmental Assessment Registry. Among other differences, community and aboriginal traditional knowledge is now recognized formally as part of an EA and there is a wider authority to develop and implement mitigation measures. The Minister of Environment, however, still appoints the review panel members as well as the Chairperson, and there remains a detailed process to develop the terms of reference for the review panel before proceeding with public hearings. The RA remains responsible for submitting the government’s response to the review panel’s report to the Governor-in-Council for approval. Ministerial guidelines entitled “Procedures for Assessment by a Review Panel” were issued by the Minister of the Environment in November 1997 and are available on the Agency Web Site (see Publications – Publications List – Guidance Materials). They are for the most part still up to date, except in terms of the amendments noted in the previous section.

Project(s) that may be recommended by the NWMO in the future that are referred to the Minister of the Environment for a review panel will most likely deal with a specific site or sites. This will be the most significant difference from the Seaborn Panel. There is also the possibility that there could be a decision to leave the nuclear fuel wastes where they are, which would also have significant environmental implications. The recommendation of any review panel would be to proceed, proceed with alterations to the project, or to not proceed depending upon the significance of the predicted environmental effects after mitigation. A project could also be deemed to be “justified in the circumstances” and proceed even if the effects are predicted to be significant. The Governor-in-Council would have to approve the government response to a review panel report, including any such justification.

## **9.0 Nuclear Waste Management Stakeholders**

There is a variety of stakeholders that will seek to participate in any federal EA process related to nuclear waste management. Some will be decision-makers; others will be advisors, while still others will wish to participate based on personal or collective interests or concerns as Canadians. The degree of involvement of some of the stakeholders will also depend on whether a screening, comprehensive study, review panel or mediation is being undertaken. Most stakeholders would be involved in a comprehensive study or review panel, but not necessarily in a screening or mediation (would depend on the issues being discussed and “interested parties”). Based on the type of project that would be under review, the following summarizes the stakeholders and indicates their likely role in an EA process:

Nuclear Waste Management Organization – proponent of the approach or approaches to be subjected to federal EA review;

Power Utilities (Ontario Power Generation, Hydro Quebec and New Brunswick Power) – owners of waste although they are likely to be represented by the NWMO as proponent for any project;

Atomic Energy of Canada Limited – owners of some nuclear waste, contributors to the trust fund and thus could be a proponent of specific recommended options; with the amendments to the CEAA, could be an RA after June 11, 2006 (as a Crown Corporation);

Canadian Nuclear Association – would participate as an industrial association representing the industry; would want to intervene and present a position or positions to any public forum related to an EA review;

Canadian Nuclear Society – an association of individual professionals that would probably choose to participate; other professional societies might also choose to participate;

Provinces of Ontario, Quebec and New Brunswick – decision makers for certain aspects of projects within their boundaries; thus will be active participants in joint federal-

provincial EA reviews and need to meet their legislative and procedural requirements; coordination of the various agencies within each province will also be critical; other provinces or territories may choose to participate out of broader interests or concerns;

Aboriginal peoples – the various First Nations groups or representatives of those groups in the vicinity of any proposed project will likely wish to participate directly in any process and intervene at any related public meetings; since there are a wide variety of groups, care must be taken to identify all of the specific interested parties;

Environmental and other non-governmental organizations – will likely choose to intervene in any public consultation process as groups (e.g. Law Associations, Greenpeace, Sierra Club, Friends of the Earth, regional and community anti or pro nuclear groups) or as individuals;

Officials from affected communities or municipalities – some current fuel waste communities have formed an association including communities from different provinces; these communities would likely want to participate in an EA process in some manner;

Members of Canadian public – individuals with interest or concern (particularly those in the vicinity of a proposed project) are likely to wish to intervene in any EA consultation process to ask questions or express a position or concern.

#### Federal Departments and Agencies

Canadian Environmental Assessment Agency – administers the EA process under the CEAA, promotes and monitors compliance with the Act and provides advice and direction to other stakeholders; represents the Minister of the Environment in terms of providing recommendations for certain process decisions;

Environment Canada – would likely be a “specialist” department providing interventions but unlikely to be an RA; may eventually have responsibility for certain mitigation measures or follow-up programs (e.g. migratory birds, wildlife on federal lands) related to an EA;

Fisheries and Oceans Canada – could potentially be an RA if there are potential impacts on fish or fish habitat, or on navigation (although it is probably unlikely that a nuclear waste management option would be proposed close to water); otherwise, the department would be a specialist department intervening and with potential responsibility for mitigation measures or follow-up programs related to an EA;

Transport Canada – would have a specific interest with respect to any transportation of nuclear material with their responsibility for the *Transportation of Dangerous Goods Act*; they would likely intervene in any process and could also have responsibility for mitigation measures or follow-up related to transportation issues;

Natural Resources Canada – the Nuclear Fuel Waste Bureau would have a strong interest in the NWMO’s financial foundation for implementing the recommendations and thus wish to participate in an EA process;

Health Canada, Indian Affairs and Northern Development, and potentially others – would participate as an FA and provide advice and interventions to the EA process in terms of their interests and responsibilities; these departments could inherit responsibilities for mitigation measures or follow-up related to an EA.

The involvement of these stakeholders will be important no matter which CEAA process is eventually utilized. Therefore, the NWMO should ensure that they are aware of program development at each stage, the timeframes and decision points that are planned and that eventually an EA process will be initiated. This would enable the key stakeholders to plan and prepare for their participation and allow them to identify issues or concerns as early as possible. A proactive effort by the NWMO to inform these stakeholders would likely pay significant dividends in the future in terms of efficiency and effectiveness of any EA process.

### **10.0 Strategic Environmental Assessment**

In 1999, a federal government Cabinet Directive was issued on the EA of policy, plan and program proposals, more formally known as “Strategic EA”. This directive is separate from the CEAA and relates to levels of federal decision-making that are likely to precede “projects” under CEAA. As a result of this Cabinet Directive, federal Ministers expect departments and agencies to conduct an EA of a policy, plan or program proposal when the following two conditions are met:

- The proposal is submitted to an individual Minister or Cabinet for approval; and
- Implementation of the proposal may result in important environmental effects, either positive or negative.

Ministers expect the Strategic EA to consider the scope and nature of the likely environmental effects, the need for mitigation to reduce or eliminate adverse effects, and the likely importance of any adverse environmental effects, taking mitigation into account. The Strategic EA should contribute to the development of policies, plans and programs on an equal basis with economic and social analysis. Departments and agencies are encouraged to use existing mechanisms to involve the public and to document and report on the findings of the Strategic EA.

Since there may well be federal policies, plans and programs developed related to the subject of nuclear waste management, this Cabinet Directive (although separate from the CEAA) is an important part of the overall EA roadmap for the NWMO. It provides greater assurance that environmental effects and public concern will be properly assessed at all stages and for all recommended options or programs related to nuclear waste management.

An example of where this Cabinet Directive could play a role is if the NWMO were to recommend to the federal government that Canada's nuclear waste be managed at the existing reactor sites with no new major construction of storage capacity. In the cases where there was no need for additional storage capacity (i.e. some kind of interim proposal), this **may not** be considered a "project" under CEAA (and thus not subject to the Act) but the Minister of Natural Resources would likely want to initiate a "Strategic EA" of the environmental implications of such a government "policy" or "proposal" in the longer term as part of the usual "Memorandum to Cabinet" process. Depending upon interpretations of whether a recommendation for an interim solution constitutes a "project" under CEAA, this "Strategic EA" could be seen as a viable alternative to a review panel.

### **11.0 Conclusions and NWMO Implications**

The federal EA process will come into play in the future when the NWMO makes a recommendation to government and then moves on to defining a project and implementation. Although the NWMO (and the utilities) will be deemed the proponents for the proposed option, the federal government will also play a significant role in an EA process, predominantly through the licencing responsibilities of the CNSC and the CEAA process role of the Agency. The reader is again directed to the ISR paper on the CNSC licencing process where some of the likely EA process routes are illustrated in more detail.

If an option for deep geological disposal is recommended and accepted by the federal government for a particular site, it is likely that a review panel would be recommended under the CEAA (even though it would theoretically start as a "comprehensive study"). The project would be referred by the Minister of Natural Resources to the Minister of the Environment for the establishment of the review panel and the development of terms of reference (note that this referral can be made at any time in the process). The review panel would focus on the region of the proposed site and the relevant province and/or territory would be invited to participate in a joint review. It is possible however that some panel meetings could be held in other Canadian locales to ensure that the broad views of Canadians are taken into account. This could specifically be necessary in the regions where waste is currently located (e.g. reactor sites) and in the vicinity of transportation routes to the proposed disposal site.

The same scenario would likely unfold if any other large-scale above or below ground proposal were to be recommended and accepted that would involve centralizing the storage of the nuclear waste. Although the federal EA process would theoretically begin with a "comprehensive study", the extensive requirement for transportation of the nuclear waste along with the anticipated public concern would likely dictate the need to move on to a review panel (again this referral could be made at any time). The review panel would likely concentrate on the centralized storage site but also involve regions where the waste is currently located and communities along proposed transportation routes.

If the option of storage at the existing reactor sites is recommended and accepted, the EA process could take a different shape. This could involve using existing or expanded capacity for dry storage of the waste, and be located either within or outside of the existing boundaries of a currently licenced nuclear facility. The CNSC licences or renewal of licences may only require a “screening” if the proposed project falls within these existing boundaries. This was recently the case for the Point Lepreau reactor site in New Brunswick and for the Darlington site in Ontario. If the project were to include areas outside of the existing boundaries of a nuclear facility, a “comprehensive study” would be required. This was previously the case for the expansion of the Bruce Used Dry Fuel Storage Facility several years ago. It is noted that the CNSC currently undertakes rather detailed “screenings” of projects including consultation of the public, such that the differences between these “screenings” and a “comprehensive study” are not significant, at least in terms of content. A screening would however not involve a decision by the Minister of the Environment on whether or not to proceed further to a review panel. The level of EA required for this category of solution would depend upon what constitutes a longer term management solution, whether it would constitute a project under the CEAA, and what would be seen to be an acceptable validation of that approach.

There would also be the possibility (for licence renewals) that we would not be dealing with a “project” under the CEAA (and thus the Act would not apply). The policy decision or proposal to implement such an approach would, however, be subject to a “Strategic EA” as outlined in this report. The Federal Minister of Natural Resources would be the sponsoring Minister and an EA of the environmental implications of the proposal could be undertaken by the Minister’s department before seeking Cabinet approval.

Although a number of scenarios and related processes are discussed in this paper, final decisions on the appropriate level of EA required will have to wait until an actual project has been identified and more clearly defined. The complexity of the federal EA process and potential legal implications dictate that caution and careful scrutiny are required before any decisions should be taken in this regard. The NWMO should not underestimate the time and effort that will be required for an EA process, regardless of the track taken. Although not a given, a full review panel is a likely outcome for most significant NWMO recommendations and should thus be anticipated for planning purposes. Much of the current work being undertaken assessing management options will also need to be integrated into an environmental impact statement document that will need to be prepared for the deliberations of the review panel.

## **12.0 Glossary of Terms and Related Acronyms**

Nuclear Waste Management Organization (NWMO) – an organization established through the *Nuclear Fuel Waste Act* to evaluate at least three options for the management of Canada’s nuclear fuel waste and to make recommendations to the Government of Canada;

Nuclear Fuel Waste Act (NFWA) – the legislation that established the NWMO and its mandate;

Canadian Environmental Assessment Act (CEAA) – federal environmental assessment legislation;

Environmental Assessment and Review Process (EARP) Guidelines Order – the Cabinet Directive of environmental assessment requirements that preceded CEAA;

Canadian Environmental Assessment Agency (the Agency) – responsible for the administration and the provision of advice and direction on the CEAA;

Environmental Assessment (EA) – the process to predict the environmental effects of proposed activities before they are carried out;

Federal Authority (FA) – Ministers of the Crown, agencies, departments and departmental corporations of the Government of Canada, or any other body prescribed by regulations;

Responsible Authority (RA) – a federal authority that is required under the CEAA to ensure that an EA of a project is conducted;

Federal Environmental Assessment Coordinator (FEAC) – an RA that coordinates the participation of federal authorities in the EA process for a project where a screening or comprehensive study is required, and facilitates communication and cooperation among them and with provinces, persons, jurisdictions and other participants;

Nuclear Safety and Control Act (NSC Act) – the legislation containing authorities related to the licencing of nuclear and nuclear-related activities;

Atomic Energy Control Act (AEC Act) – the legislation that was the predecessor to the NSC Act;

Canadian Nuclear Safety Commission (CNSC) – the regulatory body responsible for the licencing of nuclear and nuclear-related activities;

Atomic Energy Control Board (AECB) – the predecessor to the CNSC;

Atomic Energy of Canada Limited (AECL) – a global nuclear technology and engineering company (Crown Corporation) that was previously involved in research on the deep geological disposal of nuclear fuel waste;

International Safety Research (ISR) – the consulting company that produced a background paper on the CNSC licencing process related to spent fuel management (see references).

### **13.0 References**

Web Site of the Canadian Environmental Assessment Agency ([www.ceaa.gc.ca](http://www.ceaa.gc.ca)).

“Explanation of the Amendments to the *Canadian Environmental Assessment Act*” – Canadian Environmental Assessment Agency, October, 2003.

“Review of the CNSC Licensing Process in Relation to Spent Fuel Management” – International Safety Research, December, 2003.

“Report of the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment Panel” – February 1998.