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Scope of the Environmental Assessment

for the

Port Hope

Long-Term Low-Level Radioactive

Waste Management Project

July 2002

Canada The wordmark logo for Canada, featuring a small red maple leaf above the letter 'a'.

Prepared by Natural Resources Canada
in cooperation with:

The Canadian Nuclear Safety Commission
The Department of Fisheries and Oceans Canada

Aussi disponible en français aux titre
Portée de l'évaluation environnementale du projet de gestion à long terme
des déchets radioactifs de faible activité de Port Hope

Port Hope Project

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Scope of the Environmental Assessment for the Port Hope Long-Term Low-Level Radioactive Waste Management Project

1.0 Purpose of the Scope Document

The purpose of this document is to establish the scope of the environmental assessment (EA) that must be conducted for the proposed Port Hope Long-Term Low-Level Radioactive Waste Management Project (the Port Hope Project) and to provide guidance to the project proponent on meeting scope requirements. Other factors for consideration in the scope may be identified during the course of the assessment.

The environmental assessment is required under the provisions of the *Canadian Environmental Assessment Act 1992 (CEAA)*. Under the *CEAA*, the scope of the project and the scope of factors to be included in the assessment are determined by the responsible authorities (RAs). In this case, the RAs for the purposes of the assessment are Natural Resources Canada (NRCan), the Canadian Nuclear Safety Commission (CNSC) and Fisheries and Oceans Canada (DFO).

This EA scope document describes the basis for the conduct of the EA and focuses the assessment on relevant issues and concerns. The document also provides specific direction to the project proponent, the Low-Level Radioactive Waste Management Office (LLRWMO), on how to document the technical environmental assessment study.

2.0 Background

The Port Hope Project is based upon two community proposals that were developed by the Town of Port Hope and the Township of Hope (now amalgamated as the Municipality of Port Hope). The Government of Canada accepted these proposals as a potential solution for the long-term management of Port Hope area low-level radioactive wastes in “*An Agreement for the Cleanup and Long-Term Safe Management of Low-Level Radioactive Waste Situated in the Town of Port Hope, The Township of Hope and The Municipality of Clarington*” (the Legal Agreement) which took effect on March 29, 2001. An environmental assessment of the Port Hope Project under the *CEAA* is required before decisions can be taken by the RAs to enable the project to be carried out.

The LLRWMO is Canada’s agent for the management of low-level radioactive waste for which the federal government has accepted responsibility. The LLRWMO has been designated as the proponent for the Port Hope Project on behalf of the Government of Canada.

The RAs will use the information provided in the environmental assessment to make a determination under *CEAA* on the significance of the environmental effects of the project. This information will be used by each RA in its decision-making for the project.

The proponent's future application to the CNSC will also be subjected to a thorough evaluation under the provisions of the *Nuclear Safety and Control Act (NSCA)*. This includes a licensing process that provides the public with further opportunities to provide input to the CNSC prior to any licensing decision on the project being made.

This scope of assessment document for the Port Hope Project has been prepared by the RAs after consulting with the public and other stakeholders. Comments and issues raised during the public consultation have been considered in the finalization of the scope.

3.0 Application of the *Canadian Environmental Assessment Act*

3.1 The Initial Determination

Based on information in the document "*Project Description The Port Hope Long-Term Low-Level Radioactive Waste Management Project*" submitted by the LLRWMO in November 2001, the RAs have determined, pursuant to sections 5 and 7 of the *CEAA*, that an environmental assessment of the proposed project is required. As the project is neither described in the *Exclusion List Regulations*, nor in the *Comprehensive Study List Regulations*, of *CEAA* and no other exemptions under *CEAA* are applicable to the project, it is determined (pursuant to subsection 18(1) of *CEAA*) that a "screening" must be conducted for the project and that a screening report must be prepared.

A comprehensive study EA is not required because, although the proposed sites for the new long-term waste management facilities extend outside the boundaries of existing licensed nuclear facilities, the proposed inventory of radioactive material to be accommodated in the facilities with a half life greater than one year is determined to be below 100 TBq. The relevant clause in the *Comprehensive Study List Regulations* under *CEAA* is 19(g)(ii)(B).

NRCan is an RA for the purposes of the environmental assessment because, as part of its oversight responsibilities for the Port Hope Area Initiative, it will need to make a decision on whether to provide funds to the project. Authorising funds to enable a project to be carried out is an EA trigger under paragraph 5(1)(b) of *CEAA*. NRCan is responsible for developing and implementing Government of Canada policy on radioactive waste management.

The CNSC is an RA because the proponent will require a Waste Nuclear Substance Licence (WNSL) for the possession, management and storage of a waste nuclear substance to be issued under subsection 24(2) of the *Nuclear Safety and Control Act (NSCA)*. The provision of a licence is an EA trigger, under paragraph 5(1)(d) and the *Law List Regulations* of *CEAA*. The CNSC regulates the use of nuclear energy and materials for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

DFO is an RA because an authorization under subsection 35(2) of the *Fisheries Act* is required for the harmful alteration, disruption or destruction of fish habitat (HADD) and may be required

to carry out the project. A subsection 35(2) authorization is an EA trigger, under paragraph 5(1)(d) and the *Law List Regulations of CEAA*. If an authorization under section 35(2) is not required, DFO will withdraw as an RA.

In accordance with subsection 12(1) of *CEAA*, it was agreed that NRCan will assume the lead for the conduct of this assessment in full cooperation with other RAs, as joint responsible authorities. However, this does not preempt the ability of the other RAs to make their respective decisions under section 20 of *CEAA*. The intent of this coordination process is to ensure, where possible, that a single environmental assessment report is prepared which meets the requirements of all RAs and benefits from the expertise of federal authorities (FAs).

The proposed steps in the *CEAA* process for this project are listed in Attachment A to this document. A list of acronyms is provided in Attachment B and a glossary of key terms is provided in Attachment C.

3.2 Delegation of Assessment Studies to the Proponent

The RAs, pursuant to subsection 17(1) of the *CEAA*, have delegated to the proponent, the LLRWMO, the conduct of the environmental assessment and the preparation of an environmental assessment (EA) study report. The RAs have also instructed the proponent to implement and report on an extensive information and consultation program to be conducted throughout the assessment (see section 6.13). The information provided in the EA study report will be reviewed by the RAs and the expert federal authorities. Once accepted, the EA study report will be used as the basis for the preparation of a screening report by the RAs.

The proponent is considered to have the appropriate expertise and knowledge to manage the conduct of the relevant technical studies and much of the stakeholder consultations. The RAs, however, maintain their responsibility for ensuring the assessment is carried out in accordance with *CEAA* and its regulations, and for determining whether the project is likely to cause significant adverse environmental effects.

3.3 Identification of Other Federal and Provincial Expert Departments

The following additional federal departments have been identified as being in possession of relevant expertise and will participate in the assessment by reviewing EA documents and providing technical advice in their areas of expertise to the RAs: Health Canada (HC); Transport Canada (TC); Environment Canada (EC); and, the Canadian Environmental Assessment Agency (the Agency).

The project is a Government of Canada project and must undergo a federal environmental assessment. The Ontario Ministry of Environment and Energy (MOEE) has confirmed that no provincial environmental assessment requirements under the Ontario *Environmental Assessment Act* apply because the proponent for the project is the Government of Canada acting through its

agent, the LLRWMO. MOEE, however, has an interest in participating in the technical review of the assessment. The participation and expertise of MOEE, and other provincial ministries, will be solicited on a continuing basis.

3.4 Public Registry

A public registry of documents pertaining to the environmental assessment has been established by NRCan as required by section 55 of the *CEAA*. The documents in the public registry are those produced by, collected by, or submitted to the RAs with respect to the EA of the project. As part of the public registry, a list of the documents contained in the registry is maintained by NRCan.

Interested parties may obtain copies of all documents on the public registry by contacting NRCan or the LLRWMO and may access the public registry documents at the LLRWMO's Project Information Exchange in the Municipality of Port Hope at the address identified in section 8 of this document.

The assessment is also identified in the Federal Environmental Assessment Index (FEAI), which can be accessed on the Internet web site of the Canadian Environmental Assessment Agency (www.ceaa.gc.ca). The FEAI is an electronic listing of EAs conducted by responsible authorities under the *CEAA*. It contains information on the "who, what, when, where and why" of federal EAs, and provides contacts for further information on the EAs and related documents. The FEAI number of the Port Hope Project is 30619.

4.0 Scope of the Project

The scope of the project under the *CEAA* refers to those components of the project proposal considered to be part of the project for the purposes of the environmental assessment. In determining the scope of a project, the RAs must determine which physical works the project consists of (e.g., waste management facilities) and what specific undertaking(s) will be carried out in relation to those physical works. The RAs must also determine if there are physical activities not in relation to a physical work identified on the *Inclusion List Regulations* of *CEAA* (e.g., the remediation of contaminated lands) that fall within the scope of the project.

The RAs recognize that the Port Hope Project as described in the document, "*Project Description The Port Hope Long-Term Low-Level Radioactive Waste Management Project*", is at a conceptual level of development and is expected to evolve during the EA process. Based on the project description, the Port Hope Project consists of two principal project components. One component of the project is the remediation of sites containing low-level radioactive waste, marginally contaminated soils and specified industrial wastes located in the former Town of Port Hope (now part of the Municipality of Port Hope) including the Port Hope Harbour, and the management of the wastes in a proposed long-term low-level radioactive waste management facility to be located at the Pine Street North Extension.

The other component of the project is the remediation of sites containing low-level radioactive waste and marginally contaminated soils located in the former Township of Hope (now part of the Municipality of Port Hope), and the management of the wastes in a proposed long-term low-level radioactive waste management facility on, and adjacent to, the present site of the Welcome Waste Management Facility.

The scope of the Port Hope Project is as follows:

The project consists of those activities that are directly related to the remediation of sites containing low-level radioactive waste, marginally contaminated soil and specified industrial wastes located in the Municipality of Port Hope, including the Port Hope Harbour; and the site preparation, construction and operation (including monitoring), of two local, long-term low-level radioactive waste management facilities for the wastes, one at the site of the existing Welcome Waste Management Facility and one at the Pine Street North Extension site.

The project scope includes on-site physical systems; buildings and infrastructure for the two facilities; and upgrade or construction of any access roads. It also includes all excavation; dredging; removal of any existing physical systems, buildings or infrastructure; transportation; maintenance; materials and waste handling activities associated with carrying out the project; and other proposed uses of the long-term waste management sites during the operation of the two facilities.

5.0 Factors to be Considered in the Screening

The *CEAA* requires that a screening include consideration of certain factors. The scope of a screening under the *CEAA* must include all the factors identified in paragraphs 16(1)(a) to (d) of the *CEAA*, and, as provided for under paragraph 16(1)(e), any other matter that the RAs require to be considered.

Paragraphs 16(1)(a) to (d) require that the following factors be included in the screening:

- the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the significance of the effects identified above;
- comments from the public that are received in accordance with the *CEAA* and its regulations;
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.

In accordance with paragraph 16(1)(e) of the *CEAA*, the RAs have determined that the following additional factors must also be considered in the screening:

- the need for the project;
- the purpose of the project;
- alternative means of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means;
- the need for, and requirements of, any follow-up program in respect of the project;
- the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.

While *alternative means* of carrying out the project will be investigated, *alternatives to* the Port Hope Project, will not be a factor that must be considered in the screening.

Alternative means of carrying out the project are understood by the RAs to mean the various ways, that are technically and economically feasible, that the project could be implemented which are local¹, are for the management of the wastes over the long-term and are functionally similar to the project as proposed in the project description. Section 6.5 provides further direction on addressing *alternative means* of carrying out the project.

For this project, the RAs understand *alternatives to* the project to mean alternatives that are not in the local area, that are not for the management of the wastes over the long-term and that are functionally different ways to meet the project need and achieve the project purpose. A functionally different technology to above ground storage technology (as proposed in the project description), is considered to be an *alternative to* the project. The RAs are, therefore, not asking the proponent to investigate *alternatives to* the project, such as sites outside the local area, interim storage technologies or deep geologic disposal.

Since the 1970s various options have been pursued to resolve the issue of the Port Hope area low-level radioactive wastes. In the early 1990s, a siting task force examined moving the waste out of the local area, as well as alternative waste management technologies. These earlier efforts were unable to resolve the issue. Given the scope of earlier, unsuccessful efforts to establish a repository for the Port Hope area wastes, it is not considered appropriate to require that *alternatives to* the project be evaluated in this environmental assessment. The history of the low-level radioactive waste issue in the area will be addressed in the EA as further discussed in section 6.2.

¹In the context of this project “local” means the geographic area encompassing both the Municipality of Port Hope and the Municipality of Clarington. Refer to 6.5 for further explanation of “local”.

The Port Hope Project is a local solution based upon two community proposals that were developed by the Town of Port Hope and the Township of Hope (now amalgamated as the Municipality of Port Hope). The federal government accepted these proposals as a potential solution for the local, long-term management of Port Hope area low-level radioactive wastes in the Legal Agreement.

6.0 Environmental Assessment Methodology

6.1 Structure of the Screening Report and EA Study Report

It is the responsibility of the RAs to prepare an EA screening report. The screening report will be based on the findings of the EA study report, which will be prepared by the proponent, the LLRWMO. A proposed structure for the RAs screening report is provided below as a framework for explaining how the factors in section 5 are to be systematically considered in the assessment, what information about the project and the existing environment is necessary to permit that consideration, and how the results of that consideration would then be documented in the screening report. The actual structure of the screening report may vary from that described here.

The parts of the assessment delegated to the proponent, pursuant to subsection 17(1) of the *CEAA* will be documented in an EA study report in a manner that is consistent with the proposed structure for the screening report. The EA study report will be attached to the screening report as a support document.

Proposed section headings for the screening report are as follows:

- Introduction
- Application of the *CEAA*
- Scope of the Project
- Scope of the Assessment
 - Factors Considered in the Screening
 - Scope of Factors Considered
- Historical Context and Need for the Project
- Purpose of the Project
- The Project
 - Description of the Project
 - Regulatory Environment
- Description of Alternative Means Considered

- Geographic Study Areas and Time Frames
- Description of the Existing Environment
- Assessment and Mitigation of Potential Environmental Effects
 - Assessment Methodology
 - Potential Environmental Effects
 - Cumulative Effects
- Assessment of Alternative Means
- Significance of Residual Environmental Effects
- Decommissioning
- Follow-up Program
- Information and Consultation Program
- Conclusions
- References
- Glossary

The EA study report should also include an executive summary report and a key subject index. The executive summary report should provide a summary of the assessment process and results, as well as an introductory explanation for why the screening assessment is required under the *CEAA*. The executive summary should be prepared in plain language and available in both English and French. The key subject index should facilitate cross-referencing of information.

The EA study report should use this document “*Scope of the Environmental Assessment for the Port Hope Long-Term Low-Level Radioactive Waste Management Project*”, as the basis for addressing the sections on Application of *CEAA*, the Scope of the Project and the Scope of the Assessment.

The following section headings describe the balance of the information related to the scope of assessment required for this environmental assessment.

6.2 Historical Context and Need for the Project

The need for the project will be considered in the assessment. The EA study report should contain a clear explanation of the project need or what issue the project is attempting to solve.

To provide the context for the project, the proponent will explain the history of the low-level radioactive waste issue in the Port Hope area and previous attempts to resolve the issue. This explanation could include a brief overview of the mandate of the Siting Task Force; the options examined; the stakeholders; the major issues raised; and the efforts of the Task Force to address these issues.

The proponent will also explain the events leading to the current project proposal, including the conceptual approaches proposed by the municipalities and the development of the Legal Agreement. The proponent will explain the significance of the Legal Agreement in respect to this project and to this environmental assessment.

In the context of establishing need for the project, the proponent will examine whether the current management of the wastes is sustainable over the long term. The proponent will examine the potential state of the wastes in the Municipality of Port Hope over time, if the status quo were to be retained and the project not implemented.

6.3 Purpose of the Project

The purpose of the project will be considered in the assessment. The EA study report must contain a clear statement of the project purpose and objectives, or what the project is attempting to achieve. In this case, the purpose of the project is to clean up and provide appropriate local, long-term² management of low-level radioactive wastes, marginally contaminated soils and specified industrial wastes currently located in the Municipality of Port Hope.

The principal objective is to relocate wastes from contaminated areas and licensed interim low-level radioactive waste facilities and to manage the wastes in a suitably constructed, environmentally safe, socially acceptable and appropriately controlled state for the long term.

² Long-term is considered to be at least 500 years from the completion of the proposed works.

6.4 The Project

This section must provide a description of the project, meaning the preferred alternative arrived at through the consideration of *alternative means* and consultation, and its regulatory context to allow an adequate understanding of what is proposed, and when and how it will be carried out.

6.4.1 Description of the Project

An adequate description of the project is necessary to permit a reasonable consideration of the environmental effects of the project. The description of the project should refer to, and elaborate upon, the items identified in section 4, Scope of the Project, supported with appropriate maps and diagrams.

The main objective of the project description is to identify and characterize those specific activities and physical works involved in the project that have the potential to interact with and, thus, may result in a change or disruption to the surrounding environment, either directly or indirectly, over the life of the project including during malfunctions and accidents.

The proponent should provide the following information in summary form, using or referencing more detailed information where applicable. Detailed technical requirements for the project will be addressed through the CNSC licensing process.

- an explanation on how project objectives are met or achieved in the preferred alternative;
- the location of the project and all its components;
- the sources, locations, types, characterizations and quantities or volumes of radiological and non-radiological waste, including industrial waste, in the Municipality of Port Hope, for management in the long-term waste management facilities;
- the sources, types and quantities or volumes of other materials to be used in the project, e.g., fill materials;
- the clean-up criteria proposed and the objectives of those criteria;
- the processes for the collection and handling of radioactive and non-radioactive wastes;
- site remediation, including dredging, activities at:
 - sites in the former Township of Hope including at the existing Welcome Waste Management Facility and any historic spillage sites on roads;
 - sites in the former Town of Port Hope, including the Port Hope Harbour;

- transportation activities, methods and routes, including any temporary roads, related to waste relocation, site remediation, construction of the long-term waste management facilities and the operation of the facilities;
- the basic configuration, layout, shape, size, design of the waste management facilities and information demonstrating the robustness of the facilities;
- components and associated activities related to the construction of:
 - the proposed waste management facility at the Welcome site and any associated ancillary facilities and infrastructure;
 - the proposed waste management facility at the Pine Street North Extension site and any associated ancillary facilities and infrastructure;
- activities and associated components related to the long-term operation, including monitoring, of:
 - the proposed waste management facility at the Welcome site and any associated ancillary facilities and infrastructure;
 - the proposed waste management facility at the Pine Street North Extension site and any associated ancillary facilities and infrastructure;
 - all proposed uses of the sites during operation of the facilities;
- how adaptive management will be used, including how it will integrate the results of the environmental monitoring programs;
- the key components designed specifically to isolate project wastes from the surrounding environment, or to prevent, halt or mitigate malfunctions and accidents;
- the sources and characteristics of any noise, odour, dust and other potential nuisance effects from the project;
- the quantities, points of release and management of radiological and non-radiological emissions and effluents from the construction and operation of the project;
- the sources and characteristics of potential risks to workers, the public and the environment;
- the proposed institutional control system for the project, including plans for long-term stewardship and continued oversight;
- key operation procedures relevant to the protection of workers, the public and the environment;

- a description of the types and the objectives of all management plans, protocols and any related communications to be developed, including environmental protection plans, health and safety plans, emergency response plans and contingency plans;
- a proposed schedule for all major activities involved in the remediation of sites and the construction and operation of the facilities.

Malfunctions and Accidents:

Information on project malfunctions and accidents is also needed to permit consideration of relevant potential environmental effects in the screening. The information on malfunctions and accidents may be included in the general project description, or presented in a separate section of the EA study report. The discussion should include:

- a description of specific, important malfunction and accident events that have a reasonable probability of occurring during the life of the project, including an explanation of how those events were identified for the purpose of this environmental assessment;
- a description of the source, quantity, mechanism, rate, form and characteristics of contaminants and other materials (physical, chemical and radiological) likely to be released to the surrounding environment during the postulated malfunction and accident events;
- a description of any contingency, cleanup or restoration work in the surrounding environment that would be required during, or immediately following, the postulated malfunction and accident events.

6.4.2 Regulatory Environment

All federal and provincial environmental and other laws, regulations and associated standards that require compliance in respect to the project should be identified. In addition, all applicable intergovernmental agreements and commitments of the Government of Canada should be identified and their relevance to the project explained.

6.5 Alternative Means of Carrying Out the Project

The proposed project is based on conceptual designs developed by the former Town of Port Hope and the former Township of Hope (now amalgamated as the Municipality of Port Hope) for the cleanup and local long-term management of specified wastes located in the Municipality. The community proposals were accepted by the federal government as a potentially suitable solution for resolving the local low-level radioactive waste issue, and will be assessed in this EA.

The environmental assessment should, however, also consider *alternative means* of carrying out the project that are technically and economically feasible and the environmental effects of any such alternative means. Alternative means of carrying out the project are defined as the various ways, that are technically and economically feasible, that the project can be implemented or carried out. Such alternative means considered may range from alternative methods of development, implementation and mitigation, to alternative transportation routes and locations.

The *alternative means* considered must be described and the criteria applied to determine economic and technical feasibility should be clearly stated. In addition, any environmental criteria used to determine feasibility or any other criteria used, such as to determine if the project purpose will be met, must be identified.

For example, in the environmental assessment for the Port Hope Project, the proponent will consider, but not be limited to, the following alternative means of carrying out the project:

- Land-use options for the sites of the long-term waste management facilities during their operation, considering that the purpose of the facilities is to contain and control nuclear substances licensed under the *Nuclear Safety and Control Act*;
- Alternative transportation routes for movement of materials, including for the transport of wastes to the long-term waste management facilities and materials for site remediation and facility construction;
- Alternative mechanisms for monitoring the performance of the waste management facilities over the long-term;
- Alternative designs for the facilities;
- The construction and operation of one long-term low-level radioactive waste management facility at the existing Welcome Waste Management Facility to accommodate all historic low-level radioactive wastes, marginally contaminated soils and specified industrial wastes from the Municipality of Port Hope.

As part of the EA, the proponent must consider alternative locations for the facilities in the local area should they be suggested by the public and other stakeholders. However, the RAs do not require the proponent to actively seek new locations for the facilities. The proponent will apply its feasibility and other criteria to determine the extent to which any recommended alternative locations and other *alternative means* receive consideration.

Based on the Legal Agreement, the local area means the geographical areas of Municipality of Port Hope (formerly the Town of Port Hope and the Township of Hope) and the Municipality of Clarington. As contemplated by the Legal Agreement, the RAs recognize that a preferred alternative that involves the movement of waste from the geographic areas of any of the above municipalities, as they existed on October 6, 2000, to another of those municipalities would

require that the proponent obtain the consent of the municipalities and would also require an amendment to the Legal Agreement.

6.6 Assessment Geographic Study Areas and Time Frames

The consideration of the environmental effects in a screening should be conceptually bounded in both time and space. This is more commonly known as geographic study areas and time frames of the environmental assessment.

6.6.1 Geographic Study Areas

The purpose of different geographical study areas is to provide a basis for assessing environmental effects, including cumulative effects, that is sufficiently flexible to suit the different components of the environment. The study areas used in assessing the environmental effects of the project must encompass all relevant components of the environment, including people, land, water, air and other aspects of the natural (e.g., fish, wildlife and their habitats) and socio-economic environments, that can reasonably be expected to be affected by the project.

In defining study areas, consideration should be given to the type, nature and extent of potential environmental effects for each relevant component of the environment. The size of the study areas should be elastic and should vary among the environmental components being addressed to allow the full extent of a particular effect to be considered. If dispersion modelling results indicate that there may be effects beyond the established boundaries, those effects will be taken into account.

As a starting point for establishing appropriate study areas for the assessment, the following three areas are suggested on a preliminary basis. Attachment D, Map of Preliminary Study Areas provides a visualization of these suggested study areas. The preliminary study areas will be further refined during the assessment by the proponent. The EA study report must contain clearly defined study areas and the rationale for why they were chosen.

- **Preliminary Site Study Area:** This study area would include the immediate zone of influence of the project and would consist of several different sites for the Port Hope Project. It would encompass all facilities, buildings, infrastructure, lands and waters, including areas in the Port Hope Harbour, that are directly connected or associated with the Port Hope Project as described in section 4, Scope of Project, of this document.
- **Preliminary Local Study Area:** This study area would extend beyond the Site Study Area where there is a reasonable potential for obvious, easily understood and mitigable environmental effects related to the project. In particular, the local study area should be flexible and vary depending on the ecosystem component being addressed. For example, an appropriate local study area for assessing potential environmental effects on the aquatic environment may be different from what would be appropriate for assessing potential effects on the atmospheric environment.

- Preliminary Regional Study Area: This study area would include lands and water, including portions of Lake Ontario, around the Site Study Area that may be considered relevant to the assessment of more wide-spread environmental effects and wherein there is the potential for cumulative and socio-economic effects related to the project. On a preliminary basis, this study area would encompass the eastern to central area of the Region of Durham, the western to central area of the County of Northumberland, the southern area of Peterborough County and extend into Lake Ontario.

6.6.2 Time Frames

The time frames for an assessment establish over what period(s) of time the project-specific and cumulative effects will be considered. As with the geographic study areas, it is important that the time frames remain flexible to ensure that the full timing and duration of effects are described in the EA study report.

Time frames should be logically defined by a specific need, event or environmental effect. Time frames suggested on a preliminary basis are the following:

1. The short term: This time frame would extend approximately 5 to 7 years into the implementation of the project, and would include the remediation of sites, site preparation and construction activities, and the completion of the proposed long-term low-level radioactive waste management facilities at the Pine Street North Extension site and the Welcome site.
2. The intermediate term: This time frame would extend several decades beyond the completion of the proposed waste management facilities into the operations phase. It would include monitoring activities to ensure the facilities are functioning properly during this initial period of operations and that any environmental effects related to the project are detected and mitigated.
3. The long term: This time frame would extend over the remaining operational life of the waste management facilities, estimated to last at least 500 years, and would include ongoing monitoring and stewardship, any related mitigation activities and plans to ensure continued oversight.

6.7 Description of the Existing Environment

The purpose of this section is to provide a reasonably complete and accurate description of the existing environment that could be affected by the project. The description shall include, but not necessarily be limited to, those environmental components, processes and interactions that the proponent considers likely to be affected by the proposed project, including those identified as being of concern to the public.

6.7.1 Establishing a Pre-Project Baseline

To permit accurate delineation of the potential environmental effects of the proposed project, the baseline existing environment must include, in addition to the characteristics of the natural environment, the relevant existing stressors from past and present human activities. For example, the description of the existing environment should include the presence of existing waste sites and other significant land uses in the study areas. The baseline existing environment, therefore, should be *as affected* by past and current human activities immediately prior to undertaking the project.

A description of the environment that existed prior to the presence of historic low-level radioactive waste in the Municipality of Port Hope, or at some time other than when the undertaking is proposed, would not provide a suitable basis on which to assess the potential beneficial or adverse environmental effects of the proposed project.

6.7.2 Scope of the Description of the Environment

The general components of the biophysical environment that must be described in the various study areas include, but should not necessarily be limited to:

Atmospheric environment:

- meteorology and climate;
- air quality;
- noise.

Geophysical environment:

- physiography and topography;
- soil quality;
- geology, including ground stratigraphy and relevant geomorphological processes;
- seismicity;
- hydrogeology and associated processes;
- groundwater quality (physical, chemical and biological).

Aquatic environment:

- surface hydrology;
- surface water quality (physical, chemical and biological);
- sediment quality (physical, chemical and biological);
- aquatic ecology, including habitat.

Terrestrial ecology, including habitat:

- flora;
- fauna, including migratory birds.

Radiation environment:

- site radioactivity levels: radiation levels at contaminated sites and at present waste management sites;

- background radiation levels.

The proponent will also describe potential changes to the existing biophysical environment over the long term that could occur as a result of climate change and that are relevant to the project.

The description of the social and economic components of the environment should include, but should not necessarily be limited to:

- population (including relevant demographic characteristics);
- economic base;
- community infrastructure;
- renewable and non-renewable resource use;
- existing and planned land use;
- landscape;
- heritage, cultural or archaeological sites;
- recreation areas;
- use of lands and resources for traditional purposes by aboriginal persons.

Within its description of the existing environment, the proponent should also identify Valued Ecosystem Components (VECs). VECs are components of the environment that are identified as being of particular value, such as for example, having an ecological, scientific, cultural, economic, health or aesthetic importance. VECs should be identified taking into account the results of consultation with the public and other stakeholders.

Norms, trends and extremes in the existing environmental conditions, including the magnitude and frequency of extreme environmental events, should be described to the extent relevant. This description should also address the range of sensitivities to disruption or contamination within the human and non-human biota populations. Key environmental relationships that may be affected by the project must be identified.

The required level of detail in the description of the existing environment may be less where the potential interactions between the project and various components of the environment become increasingly remote in time and/or space.

Relevant traditional ecological knowledge may be used where available. Relevant existing information and studies may be used to describe the existing environment. Where that information is significantly lacking, additional research and field studies may be required to complete the environmental assessment. Gaps will be identified where information is not reasonably available or attainable.

6.8 Assessment and Mitigation of Potential Environmental Effects

The purpose of this section is to indicate in what ways the environment may be changed as a result of the project and the potential environmental effects of that change. The environmental assessment must consider potential environmental effects from the project including effects from malfunctions and accidents, other projects and activities (cumulative effects), and the

environment itself on the project. It must also consider mitigation measures to enhance potential beneficial effects and to minimize or eliminate potential adverse effects. It must also consider, the capacity of renewable resources that may be significantly affected by the project to meet the needs of the present and the future.

6.8.1 Methodology

The methodology used to conduct the assessment of environmental effects and cumulative effects must be described and justified. There must be a clear explanation of how scientific, engineering and other knowledge has been used to reach the conclusions of the study. Relevant traditional ecological knowledge may be used where available. Any assumptions made must be clearly identified and justified. Gaps of knowledge and understanding must be identified where they are relevant to the principal conclusions of the assessment. Steps being taken by the proponent to address these gaps must also be identified.

A listing should be provided, where available, of relevant environmental objectives, indicators and guidelines for parameters within each environmental component.

6.8.2 Assessment of Potential Environmental Effects

The consideration of environmental effects in the environmental assessment should be presented by project phase and must be done in a systematic and traceable manner. That process must be clearly documented in the EA study report. The assessment should:

- identify the changes to the environment expected to occur as a result of the project;
- assess the potential effects of these changes;
- describe and justify mitigation measures and the plans for their implementation; and,
- identify any residual effects of the project, i.e., those effects after the application of mitigation, and assess the significance of those residual effects.

The potential environmental effects must be evaluated. For all evaluations, project-environment interactions including those that may arise from possible accidents and malfunctions must be identified. The process used to identify such interactions and the potential adverse and beneficial effects on the environment, including the VECs identified, must be described. The assessment must consider the relevant radiological and non-radiological aspects of the project.

Potential environmental effects of the project relating to human health must be considered in the assessment. Established methods of assessing potential effects related to human health as a result of the project may be used and could include, for example, pathways analyses, radiological dose assessments, and risk assessments for relevant contaminants. Current exposures to relevant stressors known to present risks to human health will be estimated to establish a baseline for these assessments. The estimation will be based on existing information, including existing relevant health studies, and information collected from the biophysical environment.

The document must also include a description of the process, factors and criteria used to characterize potential environmental effects and to determine their significance following application of mitigation measures. Factors used in the characterization of the effects and their significance may include magnitude, duration, frequency, timing, probability of occurrence, ecological and social context, geographical extent and the degree to which the effects may be reversible. Criteria for assessing the significance of the potential environmental effects also include relevant federal and provincial standards, guidelines and objectives for environmental quality criteria (air, land, water, biota) and for protection of human health (e.g., radiation dose limits).

Effects of the Environment on the Project

The potential effects of the environment on the project must also be evaluated. Information must be presented on how these effects have been addressed in the planning of the project. Such effects may include those associated with natural or man-made hazards, such as for example, severe weather, seismic events or fire. The potential effects on the project as a result of climate change should also be addressed.

Capacity of Renewable Resources

The proponent must also assess the potential environmental effects on the sustainability of renewable resources, for example, fish and wildlife, that may be significantly affected by the project. The assessment must identify any renewable resources in the study areas that may be affected by the project and assess the likelihood that any such resources may be significantly affected.

Mitigation Measures

The proponent must describe the general and specific measures that it proposes to implement to mitigate the potentially adverse environmental effects and to enhance beneficial effects of the project. This should include a description of contingency measures that have been designed to address potential accidents and malfunctions that could result in spills or unplanned releases of contaminants to the environment.

Some mitigation measures can be introduced in the project description section of the EA study report (e.g., standard operation procedures) with other more specific measures identified in the assessment of potential effects. For clarity, all general and specific mitigation measures that have been proposed for the project can be summarized in one section of the report.

Mitigation measures should be described in terms of their purpose, timing and duration, economic feasibility, anticipated effectiveness, previously demonstrated performance and potential risk of failure. Thresholds for the activation of mitigation measures should be specified.

6.8.3 Cumulative Effects

The effects of the project must be considered together with those of other projects and activities that have been or will be carried out and for which the effects are expected to *overlap* with those of the project (i.e., overlap in the same geographic area and time). These are referred to as cumulative effects.

The proponent must identify and assess any potential adverse cumulative environmental effects with other projects, such as with the Port Granby Long-Term Low-Level Radioactive Waste Management Project and the remediation of the Cameco plant in Port Hope. Other projects and activities considered in the cumulative effects assessment must be clearly identified. Any beneficial cumulative effects should also be identified.

The criteria and rationale used for inclusion of projects and activities in the cumulative effects assessment should be provided in the EA study report. Activities or projects considered and the approach and methodology used in the cumulative effects assessment must be documented. The consideration of cumulative effects should use the same or a consistent approach with that used in the consideration of environmental effects in section 6.8.2.

The information reasonably available to assess the environmental effects from other projects will become more conceptual and less detailed as those effects become more remote in distance and time in relation to the effects of the project or where information about another project or activity is not available. The consideration of cumulative environmental effects may therefore be at a more general level of detail than effects considered in the assessment required by section 6.8.2.

6.9 Assessment of Alternative Means

The environmental effects of feasible alternatives considered should be identified and assessed. The rationale should be provided for why these alternative means of carrying out the project were not adopted as preferred alternatives.

6.10 Significance of the Residual Environmental Effects

The preceding steps in the screening will have considered the environmental effects of the project including project malfunctions and accidents and cumulative effects, the effects of the environment on the project and the effects associated with alternative means of carrying out the project. Mitigation measures to minimize or eliminate adverse effects and enhance beneficial effects will have also been considered.

The screening should consider all of the effects in coming to a final conclusion as to whether the project, taking into account the mitigation measures, will likely cause significant environmental effects. The proponent may wish to propose its own conclusion on the significance of the residual environmental effects in the EA study report, however, it is the RAs, that must come to a final conclusion in the screening report.

6.11 Decommissioning

The scope of the Port Hope Project, or what is being proposed as part of this project, does not include the future decommissioning of the long-term low-level waste management facilities. Once a proposal is made to decommission the radioactive waste management facilities, that project would require CNSC approval under a separate licensing action and would be required to undergo an environmental assessment in accordance with the *CEAA*.

Although decommissioning does not fall within the scope of the project, it does fall within the scope of the assessment. Given that a specific proposal to decommission or abandon the proposed facilities is difficult to describe at this time because of the project's long operational period, options for the federal government to consider in respect to decommissioning the project and the potential environmental effects of such options should be discussed at the conceptual level. The option of *abandonment* should be addressed within the context of the decommissioning options discussed.

6.12 Follow-up Program

The purpose of a follow-up program under the *CEAA* is to assist in determining if the environmental effects of the project are as predicted in the environmental assessment. It is also to confirm whether the mitigation measures implemented are effective, and to determine if new mitigation strategies are required. Additional monitoring may also be required as a result of any authorization under subsection 35(2) of the *Fisheries Act*.

The proponent proposes to implement a monitoring program as part of the operations phase of the project. The proponent, however, should discuss whether there is also a need for a follow-up program, what it might consist of, and what it could accomplish in addition to the monitoring program proposed during project operations.

In discussing a follow-up program, the proponent should address the monitoring of both project specific and cumulative environmental effects. The proponent must also address enhanced programs for monitoring in the event that malfunctions and accidents were to occur.

The proponent must address the rationale, the process and timing for establishing the details of a follow-up program, such as monitoring parameters, locations, and frequencies.

The proponent must explain how the results of the follow-up program would be published, submitted to the RAs, and made available to the public for review and comment. The proponent must also, explain how the results would be used in adaptive management with respect to the waste management facilities.

6.13 Information and Consultation Program

The environmental assessment should be completed in consultation with the public and other stakeholders, including the Municipality of Port Hope. Extensive public consultation is considered appropriate for this project and a public consultation program must be established that keeps the community and stakeholders fully informed about the proposed project. The program must provide reasonable opportunities for the public's issues and concerns to be identified and their comments and input to be considered. The proposed consultation plan must be satisfactory to the RAs and, therefore, must be submitted to the RAs for review.

Throughout the environmental assessment process, the proponent should identify, inform, and actively seek comments and suggestions from a variety of stakeholders. The following general categories are suggested:

- federal government departments
- provincial government ministries
- local and regional government and related service providers
- international commissions responsible for carrying out intergovernmental agreements
- conservation authorities
- established committees
- general public
- affected property owners
- neighbouring residents
- local businesses, including Cameco Corporation
- non-government organizations and interest groups
- the media
- interested aboriginal groups

The proponent should maintain a list of stakeholders that may have an interest, or that have expressed an interest in the project.

The proponent should use a variety of methods to consult with the public and other stakeholders as appropriate, including, for example, newsletters, open houses, the Internet, meetings and workshops.

In the EA study report, the proponent must provide information on the stakeholders consulted, what they were consulted on, how they were consulted and mechanisms or protocols used to provide feedback to stakeholders on how the information resulting from these consultations was used. The proponent should also maintain a list of any comments received and how they have been dealt with in the assessment.

The public and other stakeholders have reviewed and commented on a draft version of the scope of the environmental assessment for the Port Hope Project. The RAs will also provide opportunities for review and comment on other draft assessment documents at key stages in the process, in particular a review of the draft screening report.

7.0 Conclusions

This section will be prepared by the RAs and presented in the screening report. It will contain a conclusion consistent with section 20 of the *CEAA*, on whether the project is likely to cause significant adverse environmental effects, taking into account the application of mitigation measures.

8.0 Contacts for the Assessment

8.1 RA Contact for Submission of Comments

Anyone wishing to obtain additional information or to provide comments on any aspect of the environmental assessment being conducted for the Port Hope Project can do so through the RA contact provided below. All submissions to the RAs are considered public and will be placed on the public registry.

Sharon Baillie-Malo
Uranium and Radioactive Waste Division
Natural Resources Canada
580 Booth Street
Ottawa, Canada
K1A 0E4
Telephone: 613-947-4750
Fax: 613-947-4205
Internet: phai.irph@nrcan.gc.ca

8.2 Contact for Obtaining Public Registry Documents

As required under the *CEAA*, the RAs are responsible for ensuring that a public registry of documents is maintained related to the environmental assessment of the Port Hope Project. A public registry has been established at Natural Resources Canada in Ottawa at the address provided above in section 8.1.

To provide convenient public access, copies of all public registry documents have been located in the Port Hope offices of the LLRWMO at the address below. Anyone wishing to obtain copies of public registry documents or a listing of the documents in the public registry can do so through the following contact:

Ms. Sue Stickley
Communications Officer
Low-Level Radioactive Waste Management Office
Project Information Exchange
P.O. Box 118, 110 Walton Street
Port Hope, ON

L1A 3V9

Telephone: 905-885-0291 or toll-free: 1-866-255-2755

Fax: 905-885-0273

Internet: info@llrwmo.org

9.0 References

1. *LLRWMO: Project Description The Port Hope Long-Term Low-Level Radioactive Waste Management Project. November 2001.*
2. *An Agreement for the Cleanup and Long-Term Safe Management of Low-Level Radioactive Waste Situated in the Town of Port Hope, The Township of Hope and The Municipality of Clarington. March 29, 2001.*
3. *The Canadian Environmental Assessment Act (CEAA), 1992. Regulations pursuant to CEAA: Federal Coordination Regulations, Comprehensive Study List Regulations, Exclusion List Regulations, Inclusion List Regulations, Law List Regulations.*

Attachment A Process Steps for the Port Hope Long-Term Low-Level Radioactive Waste Management Project Environmental Assessment

A. Determination of Applicability of the *CEAA*

- Proponent submits the Port Hope Project Description to NRCan
- NRCan determines applicability of *CEAA*
- Notification to the proponent of the NRCan determination
- Notification to Ontario provincial authorities of federal EA determination

B. Initiation of Assessment and Determination of Scope

- NRCan establishes a Public Registry under *CEAA* for the project
- NRCan uses FCR³ to identify other Responsible Authorities (RA) and Federal Authorities (FA): RAs are NRCan, CNSC and DFO, FAs are HC, EC, TC and the CEA Agency
- FAs comment on preliminary draft Scope of Assessment
- RAs invite public comment on the draft Scope of Assessment
- Completion of a 45 day⁴ public comment period
- RAs prepare and distribute final Scope of Assessment

C. Conduct of the Assessment

- Proponent prepares EA study report for the Port Hope Project;
 - must meet scope requirements
 - must conduct consultation program; governments, municipalities, the public, other stakeholders
 - must keep RAs informed
- Proponent develops a preferred alternative in consultation with the municipality
- Proponent submits the draft EA study report to RAs

Note: The proponent will undertake an extensive public consultation program and will report on how public concerns have been dealt with to the RAs.

D. Development of Screening Report and Decision

- RAs review the draft EA study report, including compliance with *CEAA* and the Scope of Environmental Assessment document
- RAs submit compliance review concerns, if any, to proponent
- Proponent revises and resubmits draft report to RAs, as needed

³*Federal Coordination Regulations* pursuant to *CEAA*.

⁴The RAs extended the original 30 day public comment period by an additional 15 days to 45 days.

- RAs distribute the draft EA study report for FA and provincial technical review
- Proponent revises and resubmits EA study report to RAs, as needed
- RAs develop the draft screening report
- RAs distribute the draft screening report for FA review and public comment
- RAs revise and finalize the screening report, as needed
- RAs submit the screening report to respective departmental decision makers for decision
- RAs provide public notice of the course of action regarding the project

Attachment B List of Acronyms

CEAA	<i>Canadian Environmental Assessment Act</i>
CNSC	Canadian Nuclear Safety Commission
DFO	Fisheries and Oceans Canada
EC	Environment Canada
EA	Environmental Assessment
FA	Federal Authority
FCR	<i>Federal Coordination Regulations</i>
FEAI	Federal Environmental Assessment Index
HADD	Harmful alteration, disruption or destruction of fish habitat
LLRW	Low-Level Radioactive Waste
LLRWMO	Low-Level Radioactive Waste Management Office
NSCA	<i>Nuclear Safety and Control Act</i>
MCS	Marginally Contaminated Soil
MOEE	Ontario Ministry of Environment and Energy
NRCan	Natural Resources Canada
RA	Responsible Authority
TBq	TeraBecquerel
TC	Transport Canada
VEC	Valued Ecosystem Component
WNSL	Waste Nuclear Substance Licence

Attachment C Glossary

adaptive management

- Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs.

alternative means

- “*Alternative means*” of carrying out the project are the various ways, that are technically and economically feasible, that the project could be implemented that are local, are for the management of the wastes over the long-term and are functionally similar to the project as proposed in the project description. This could include for example, alternative locations in the local area, routes and methods of development, implementation and mitigation.

alternatives to

- “*Alternatives to*” the project are alternatives that are not in the local area, that are not for the management of the wastes over the long-term and that are functionally different ways to meet the project need and achieve the project purpose.

comprehensive study

- (subsection 2(1) of *CEAA*), ‘comprehensive study’ means an environmental assessment that is conducted pursuant to section 21 of *CEAA* and that includes a consideration of the factors required to be considered under subsections 16(1) and 16(2) of *CEAA*.

cumulative environmental effect

- The effect on the environment, over a certain period of time and distance, resulting from the effects of a project when combined with those of other past, existing and imminent projects and activities.

decommissioning

- Any action taken to retire a facility or part thereof from its licensed activity.

environment

- (subsection 2(1) of *CEAA*), ‘environment’ means the components of the Earth, and includes a) land, water and air, including all layers of the atmosphere, b) all organic and inorganic matter and living organisms, and c) the interacting natural systems that include components referred to in a) and b) above.

environmental assessment

- (subsection 2(1) of *CEAA*), an environmental assessment means, in respect of a project, an assessment of the environmental effects of the project that is conducted in accordance with *CEAA* and its regulations.

environmental effect

- (subsection 2(1) of *CEAA*), 'environmental effect' means, in respect of a project, a) any change that the project may cause in the environment, including any effect of any such change on health and socio-economic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes by aboriginal persons, or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, and b) any change to the project that may be caused by the environment, whether any such change occurs within or outside Canada.

follow-up program

- A program designed to evaluate whether the environmental effects of a project are as predicted in the environmental assessment, and whether the identified mitigation measures are effective.

human health effects

- Physical health, including death and disease; and psychological, emotional, spiritual, or mental health and well-being.

industrial waste

- Non radioactive wastes specified in the Legal Agreement.

local (for the Port Hope Project)

- The Municipality of Port Hope and the Municipality of Clarington.

local study area

- Spatial boundary for assessing environmental effects where there is a reasonable potential for obvious, easily understood and mitigable environmental effects related to the project.

long-term (for the Port Hope Project)

- In the context of this project, long-term is considered to be at least 500 years from the completion of the proposed works.

low-level radioactive waste (LLRW) defined for the Port Hope area

- Chemical residues and soil-like or industrial refuse from radium and/or uranium refining activities in Port Hope and native soils that typically have a radium-226 activity greater than 0.925 Bq/g (25 pCi/g) or uranium concentrations generally in excess of a few hundred parts per million.

marginally contaminated soil (MCS) defined for the Port Hope area

- Native soils with a radium-226 activity level generally less than 0.925 Bq/g but with contaminant concentrations that exceed certain low-level radionuclide activity or

chemical concentration cut-off values. These soils are typically undisturbed and became contaminated due to leaching of the LLRW and movement of impacted groundwater.

mitigation

- (subsection 2(1) of *CEAA*), means in respect of a project, the elimination, reduction or control of the adverse environmental effects of the project, and includes restitution for any damage to the environment caused by such effects through replacement, restoration, compensation, or any other means.

project

- (subsection 2(1) of *CEAA*), a ‘project’ means, in relation to a physical work, any proposed construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work, or (b) any proposed physical activity not relating to a physical work that is prescribed or is within a class of physical activities that is prescribed pursuant to regulations made under paragraph 59(b) of *CEAA* (i.e., *Inclusion List Regulations*).

public registry

- A framework which seeks to provide all Canadians with convenient access to complete information about environmental assessments carried out under the *CEAA*. The framework consists of :
 1. the Federal Environmental Assessment Index, an electronic database listing all environmental assessments conducted under *CEAA*;
 2. a list of publicly available documents related to each environmental assessment that an RA is responsible for;
 3. the environmental assessment documents themselves.

regional study area

- Spatial boundary relevant to the assessment of more wide-spread environmental effects and wherein there is the potential for cumulative and socio-economic effects related to the project.

screening

- (subsection 2(1) of *CEAA*), ‘screening’ means an environmental assessment that is conducted pursuant to section 18 of *CEAA* and includes a consideration of the factors set out in subsection 16(1) of *CEAA*.

site study area

- Spatial boundary for assessing environmental effects which includes the immediate zone of influence of the project.

spatial boundary

- The limit of the geographic area(s), or study area(s) in which this environmental assessment is conducted. The area includes all components of the environment in

the area, including people, air, water, soil, and other aspects of the environment that could reasonably be expected to be affected by a project. Different spatial boundaries may be defined for different types of effects.

socio-economic conditions

- The quality of life or way of life; the economy, commercial opportunities, or employment; the availability of recreational opportunities or amenities; home life or personal security; future land uses; the future use or future production of commercial species or resources.

stakeholder

- An individual or identifiable group that may be affected by the project either negatively or positively, or that has a role in carrying out, or otherwise controlling the carrying out, of the project.

TBq (Terabecquerel)

- The international unit of radioactivity is the Becquerel (Bq). One Bq is one nuclear decay per second. Tera (T) is a prefix indicating 10^{12} .

temporal boundary

- The time frame(s) over which the predicted effects identified in an environmental assessment can reasonably be expected to be experienced. Different temporal boundaries may be defined for different types of effects.

Valued Ecosystem Component (VECs)

- Those aspects of the environment that are particularly valued in the community or that have ecological importance. VECs may contribute to, or be otherwise relevant to the health and well being of people, and/or play a key role in the function, stability or sustainability of ecosystems.

Attachment D

Map of Preliminary Study Areas