

**Information and Recommendations
of Canadian Nuclear Safety
Commission Staff**

**Renseignements et recommandations
du personnel de la Commission
canadienne de sûreté nucléaire**

In the Matter of

À l'égard du

**Refurbishment and Continued Operation of
Pickering B Reactor Units 5, 6, 7 and 8 at the
Pickering B Nuclear Generating Station**

**Projet de réfection et de poursuite de
l'exploitation des réacteurs 5, 6, 7 et 8 de la
centrale nucléaire de Pickering-B**

Recommendation for the Approval of the
Environmental Assessment (EA) Guidelines
(Scope of Project and Assessment) for the
Refurbishment and Continued Operation of
Pickering B Reactors at the Pickering B
Nuclear Generating Station

Recommandation au sujet de l'approbation des
lignes directrices pour l'évaluation
environnementale (EE) (portée du projet et
évaluation) du projet de réfection et de
poursuite de l'exploitation des réacteurs de la
centrale nucléaire de Pickering-B

One Day Public Hearing

Audience publique d'un jour

January 24, 2007

Le 24 janvier 2007

Summary

A Letter of Intent to apply for amendment of its operating licence to authorize the refurbishment and continued operation of Pickering B reactor units 5, 6, 7 and 8 at the Pickering B Nuclear Generating Station has been received from Ontario Power Generation. This Letter of Intent initiated an environmental assessment process under the *Canadian Environmental Assessment Act* for the project.

This CMD is submitted for the consideration of the Commission and for a decision on the approval of the document “*EA Guidelines (Scope of Project and Assessment) for the Refurbishment and Continued Operation of Pickering B Reactors at the Pickering B Nuclear Generating Station*”, attached as Appendix A.

CNSC staff recommends that the Commission approve the EA Guidelines (Appendix A).

Résumé

La Commission a reçu une lettre d'intention d'Ontario Power Generation dans laquelle elle demande de modifier son permis d'exploitation pour autoriser le projet de réfection et de poursuite de l'exploitation des réacteurs 5, 6, 7 et 8 de la centrale nucléaire de Pickering-B. Cette lettre d'intention a déclenché le processus d'évaluation environnementale en vertu de la *Loi canadienne sur l'évaluation environnementale*.

Le présent CMD est soumis à la Commission pour qu'elle l'examine et prenne une décision en ce qui a trait à l'approbation du document intitulé *Lignes directrices pour l'évaluation environnementale (portée du projet et évaluation) du projet de réfection et de poursuite de l'exploitation des réacteurs de la centrale nucléaire de Pickering-B* (Annexe A).

Le personnel de la CCSN recommande à la Commission d'approuver les lignes directrices pour l'évaluation environnementale.

Signed / Signé le
2006-12-04

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Directorate of Power Reactor Regulation
Le directeur général de la réglementation des centrales nucléaires

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Recommendation for the Approval of the Environmental Assessment (EA) Guidelines (Scope of Project and Assessment) for the Refurbishment and Continued Operation of Pickering B Reactors at the Pickering B Nuclear Generating Station

1. Purpose

This Commission Member Document (CMD) is submitted for consideration by the Commission and for a decision on the approval of the document “*EA Guidelines (Scope of Project and Assessment), Environmental Assessment of the Refurbishment and Continued Operation of Pickering B Reactors at the Pickering B Nuclear Generating Station*”, attached as Appendix A (EA Guidelines).

2. Background

The Canadian Nuclear Safety Commission (CNSC) is defined under the *Canadian Environmental Assessment Act* (CEAA) as a “*federal authority*”, and thus is subject to certain federal environmental assessment (EA) obligations under that Act. The CNSC can also be a “*responsible authority*” under the CEAA and as such, can be required to ensure that a federal EA of a proposed licensing project is conducted.

“*Scoping*” is a procedural step in the EA process under the CEAA, and involves two components: determining the “*scope of the project*”; and determining the “*scope of the assessment factors*”. The responsible authority for the project must determine these. “*Scope of project*” refers to those components of the proposal that are considered to be part of the project for the purposes of the EA. With respect to “*scope of assessment factors*”, the CEAA requires that an EA include consideration of certain assessment factors that are prescribed in section 16 of that Act. The scope and detail required in the application of these factors in the assessment is established by the responsible authority for the project.

The CNSC, as a responsible authority for a project, documents scoping information and decisions in the form of an EA Guidelines document, on a project-specific basis. The purpose of the EA Guidelines is: to provide guidance on the scope of the assessment that will be conducted; to describe the basis for the conduct of the assessment; and to communicate the assessment process to stakeholders. The CNSC typically organizes the scoping information in the form of EA methodological guidelines, using a standard template for presentation of the requirements.

3. Ontario Power Generation Proposal

Pickering B is located on the Pickering Nuclear Generating Station (NGS) site in the City of Pickering, within the Regional Municipality of Durham, Ontario, on the north shore of Lake Ontario. The site is about 32 km east-northeast of the City of Toronto (downtown) and 21 km southwest of the City of Oshawa. The site is shared with two other separately licensed facilities, the Pickering A NGS and the Pickering Waste Management Facility (PWMF).

Ontario Power Generation (OPG) wrote a letter and provided a project description to the CNSC, indicating their intent to refurbish and to continue to operate the Pickering B Units 5, 6, 7 and 8 with a view of extending their operating lives until about 2060 [References 1, 2 and 3].

The proposal involves refurbishment activities, including defueling and dewatering the reactors, replacing components of the reactors, the managing of refurbishment waste, both radioactive and non-radioactive, and refueling / restarting of the reactors. The management of radioactive waste during refurbishment includes: any processing and packaging of refurbishment waste; the construction at the Pickering site of buildings for the interim of storage of refurbishment waste such as steam generators, heat exchangers, and fuel channel assembly components; and the off-site transport of miscellaneous radioactive waste for management at an existing facility on the Bruce site. Note that the proposal also includes consideration of the immediate transportation of refurbishment waste such as steam generators, heat exchangers, and fuel channel assembly components, without any interim storage at the Pickering site.

The proposal also involves activities related to the continued operation of the refurbished power reactors including: the continued operation and maintenance of the reactors; the continued management of on-going operational radioactive waste and its transport to an existing facility at the Bruce site; the continued interim storage of used fuel at the Pickering site, including the construction of additional interim storage buildings for used fuel dry storage; and the possible re-packaging of any refurbishment waste in interim storage at the Pickering site, and its transportation to the Bruce site. Refurbishment waste in interim storage may also remain at the Pickering site for inclusion in the decommissioning activities of the Pickering Nuclear Generating Station.

4. Licensing

Pickering B is currently licensed by the CNSC as a Class I Nuclear Facility under the *Nuclear Safety and Control Act* (NSCA). The activities at Pickering B are governed by the Nuclear Power Reactor Operating Licence PROL 08.11/2008, issued to OPG by the CNSC on September 14, 2006, pursuant to subsection 24(2) of the NSCA.

CNSC approval to refurbish and extend the operating life of these units would require an amendment pursuant to subsection 24(2) of the NSCA to their current operating licence. The EA to be completed under the CEAA will provide part of the information that the CNSC will use in considering OPG's proposal.

The proposal would also be subjected to a thorough evaluation under the provisions of the NSCA and its regulations. That would include a detailed safety review as part of the CNSC licensing process which provides the public with the opportunity to provide input to the Commission prior to any licensing decision being made on the project.

5. Application of CEAA

Pursuant to paragraph 5 (1)(d) of the CEAA, a federal EA is required before the CNSC can amend the current licence to provide OPG with authorizations to refurbish and to continue to operate Units 5, 6, 7, and 8 of the Pickering B NGS.

There are no other CEAA triggers, such as funding, being a proponent or disposing of an interest in land to support the proposed project, that involve the CNSC.

The proposed licensing action would involve authorization of activities relating to a physical work, namely the refurbishment and continued operation of the Pickering B NGS, and thus there is a project for the purposes of the CEAA. There are no identified exclusions from EA for the project pursuant to section 7 of the CEAA and Schedule I of the *Exclusion List Regulations* of the CEAA. Accordingly, CNSC authorization for licensing the activities related to the refurbishment and continued operation of Units 5, 6, 7 and 8 of the Pickering B facility, including the operations of the Pickering B NGS until about 2060, would require that a federal EA be conducted pursuant to the CEAA.

The project is not of a type identified in the *Comprehensive Study List Regulations* of the CEAA. At this time, CNSC staff is not aware of any potentially significant adverse environmental effects or public concerns associated with this project which would warrant a need to have it referred to a mediator or review panel pursuant to section 25 of the CEAA. Thus, the appropriate stream of assessment will be a screening. Therefore, pursuant to subsection 18(1) of the CEAA, the CNSC must ensure that a screening-level EA is completed and that a Screening Report be prepared before a licensing decision can be made pursuant to the NSCA.

CNSC is the only *Responsible Authority* (RA) identified under the CEAA for this screening at this time.

Pursuant to the CEAA *Federal Coordination Regulations*, the CNSC has consulted with a number of federal departments to determine whether they are likely to exercise one of the powers, functions or duties under section 5 of the CEAA and/or whether they possess expert assistance that could be used during the assessment in accordance with subsection 12(3) of the CEAA. These are; Health Canada (HC), Environment Canada (EC), Natural Resources Canada (NRCan), the Department of Fisheries and Oceans (DFO), Transport Canada (TC), and Indian

Affairs and Northern Development (INAC). All have responded that they do not have a responsibility under subsection 5(1) of the CEAA, thus confirming the CNSC as the only RA for this project. Environment Canada, HC, DFO, NRCan and TC have indicated to be in possession of specialist or expert information and knowledge that could be of assistance for the completion of this EA.

The CNSC has also consulted the Environmental Assessment and Approvals Branch of the Ontario Ministry of the Environment (OMOE) to determine whether there are provincial EA requirements under the Ontario *Environmental Assessment Act* that are applicable to the proposal. The Environmental Assessment and Approvals Branch has confirmed that the *Environmental Assessment Act* does not apply to this project.

6. EA Guidelines

The EA Guidelines describe the basis for carrying out the screening EA and focus the assessment on relevant issues and concerns. The EA Guidelines provide specific direction to the proponent, OPG, on how to document the EA study which would be delegated to OPG by CNSC pursuant to subsection 17(1) of the CEAA. In addition, the EA Guidelines document provides a means of communicating the CNSC's EA process to stakeholders.

Section 7.0 of the Guidelines identifies the scope of the project. In determining the scope of a project, the CNSC as a Responsible Authority for this project, must consider which physical works fall within the scope of the project, and which undertakings in relation to those physical works fall within the scope of the project. The scope of project being proposed for this environmental assessment consists of the physical works, namely, the Pickering B Units 5, 6, 7 and 8 and ancillary systems necessary for their operation through to about 2060. The proposed undertakings in relation to these physical works are the refurbishment and continued operation of these units and associated ancillary facilities until about 2060. In addition, the scope of project for this EA will also include consideration of all wastes to be generated from the refurbishment of all four reactors and of their ancillary systems, wastes from the continued operation of the units until about 2060 and all activities relating to waste management such as decontamination, waste reduction and transportation of waste off-site.

Section 8.0 of the Guidelines identifies the factors to be considered pursuant to subsection 16(1) of the CEAA. For example, the environmental effects of the project, including the environmental effects of malfunctions or accidents and cumulative environmental effects, must be considered in the assessment.

Section 9.0 of the Guidelines further discusses the methodology to be used in the assessment.

7. Public Consultation

The CNSC has established a “*Registry*” for the assessment in accordance with section 55 of the CEAA. Under the CEAA, the Registry consists of two complementary components: an Internet site and a project file. CNSC posted a Notice of Commencement of the EA for this project on the Canadian Environmental Assessment Registry (CEAR), an Internet site which is established and maintained by the Canadian Environmental Assessment Agency. The CEAR number for this assessment is 06-01-21226. CNSC has also established and is maintaining a project file, available to the public upon request, which contains all records used for the completion of the environmental assessment. This project was also posted on the CNSC website on August 3, 2006.

Subsection 9.2.9 of the EA Guidelines outlines the approach to be taken to stakeholder consultations during the EA process. OPG is expected to consult the public on a number of project-specific items. CNSC will also undertake public consultation including workshops on the environmental effects of the proposed project, mitigation measures, and on the follow-up program. Consultation activities have already commenced as part of the planning process for the assessment.

As the proponent, OPG has initiated consultation with the public and interested stakeholders on its proposal. OPG has also included a draft version of its “Community and Stakeholder Consultation and Communication Plan. This plan is outlined in Appendix A of the document entitled “Project Description for the Pickering B Refurbishment for the Continued Operations Environmental Assessment (June 2006)” [Reference 3]. CNSC staff is currently conducting a review of the plan for its acceptability.

CNSC has solicited and received comments from expert Federal Authorities identified in section 5 of this CMD, during the development of the draft EA Guidelines. All comments received from expert Federal Authorities on the draft EA Guidelines are dispositioned in Appendix B of the CMD.

CNSC also provided the public with an opportunity to comment on the draft EA Guidelines, from September 5, 2006 to October 13, 2006. The request for public comment on the EA Guidelines was posted on the CNSC web site at the same time. Copies of OPG’s project description and the draft EA Guidelines document were mailed directly to about one hundred stakeholders and made available for viewing at various public libraries. A listing of the recipients of the mail-out and of the location of the libraries is provided in Appendix C to the CMD.

Comments were received from the following stakeholders:

- Citizens for Renewable Energy;
- Lake Ontario Waterkeeper;
- Town of Ajax;
- Greenpeace;
- Ontario Ministry of Energy; and
- Ontario Power Generation.

Only a limited number of issues were raised with respect to the guidelines as such. Comments received and their dispositioning are attached as Appendix D of the CMD.

Key issues raised by the stakeholders include:

- several comments that a screening-level EA is not adequate for a project of this nature and magnitude. A comprehensive study or review panel assessment would be more appropriate;
- concerns about security (terrorism/sabotage) and access to the facility (by water or air);
- the absence of consideration of “*alternatives to the project*” or of “*alternative means of carrying out the project*”, as indicated in the draft EA Guidelines;
- requests that the scope of the factors to be considered (spatial and temporal boundaries) be expanded;
- concerns about accidents and malfunctions and the proximity of the facility to a major population centre (Toronto);
- issues relating to long-term management of radioactive waste;
- the discharge of a thermal plume in lake Ontario and its effects on the aquatic environment;
- classification of radioactive waste to be generated by the project; and
- the potential effects of the environment (climate change) on the project.

The following provides an overview of CNSC staff response to the above-noted key issues.

With respect to concerns expressed regarding the inadequacy of a screening-level EA to this type of project, CNSC staff note that the type of assessment for this project is established by the CEAA and its Regulations. OPG’s proposal is not included on the *Comprehensive Study List Regulations*, therefore, the proposal is subject to a screening-level EA. CNSC staff also considers that a recommendation for referral to a panel review is not warranted at this time. CNSC staff will continue to monitor the situation. CEAA provides for a referral at any stage of the EA if warranted.

Concerning the security issues raised by stakeholders, CNSC staff is satisfied that the EA Guidelines requires the proponent to provide information of a general nature, with the exception of Prescribed Information. While accidents and malfunctions must be considered in the EA, acts of terrorism and sabotage are not specifically required to be included in EA under the CEAA. After reviewing the current security requirements, including additional measures required by the CNSC to be put in place following events of September 11, 2001, CNSC staff are of the view that security issues are being appropriately managed by the ongoing regulatory process and that they do not warrant special consideration in the EA.

Another key issue raised by some stakeholders is the lack of consideration of “*alternatives to the project*” or of “*alternative means of carrying out the project*”. CNSC staff is of the view that consideration of “*alternatives to the project*” such as conservation or the use of renewable resources to meet energy needs lie outside the legislative mandate of the CNSC. These choices are energy policy decisions made by provincial jurisdictions and clearly lie within these jurisdictions. Consideration of “*alternative means of carrying out the project*” such as site

selection is not considered relevant in this case due to the nature of the proposal which involves the refurbishment of an existing facility.

Several stakeholders are requesting that the EA Guidelines study areas or timeframes be broadened to include wider spatial extent or longer timeframes specifically in the EA Guidelines. The Guidelines are written to allow flexibility in responding to issues during the assessment rather than being overly prescriptive. The intent is to ensure flexibility so as to allow consideration of all likely environmental effects, such that spatial and temporal boundaries are re-established as necessary to encompass any unexpected wider-spread or longer term effects that may arise in the course of conducting the EA.

Other stakeholders expressed concerns about the potential impacts of accidents and malfunctions on the City of Toronto arising from abnormal operation of the facility, or from acts of sabotage and terrorism. These concerns are at the root of the request to expand the study area to include all of the City of Toronto; however, staff notes that the guidelines remain flexible to include any area where there is evidence of unexpected wider-spread effects arising from the project.

One stakeholder noted that the temporal boundaries should be commensurate with the lifespan of radionuclides present in the retubing wastes. For instance PU 239, which has a half-life of 24,000 years, will be present in the wastes produced by retubing the reactors at Pickering B. The stakeholder expressed the view that there should be a discussion of the environmental impacts of the potential scenario in which these wastes remain on site over the long-term if no other waste management option is approved. CNSC staff notes that section 9.2.3 identifies an initial time frame for the assessment based on the duration of the project, the end of service life of the reactors estimated to be 2060. This time frame is considered adequate for the proposal under consideration; that is, the refurbishment and continued operation of the reactor. Long-term management of the waste will occur at separately licensed facilities that have been, or will be, the subject of environmental assessments under the CEEA. If, for example, modeling results demonstrate contaminant dispersion likely to cause environmental effects beyond the time frame identified, adjustments would be made to take into account these effects in the EA, both in terms of direct and cumulative effects.

There is no need to modify the EA Guidelines to include consideration of the effects of thermal discharges, the classification of radioactive waste and the effects of climate change as these are already included in the draft EA Guidelines.

8. EA Project Plan

If the EA Guidelines are approved by the Commission, they will be issued to OPG for use in carrying out the environmental assessment studies required of them. Following completion of these studies, OPG will submit a draft EA Study Report for CNSC staff review. Once the studies are reviewed, and if they are accepted by CNSC staff, Federal Authorities and provincial reviewers, CNSC staff will prepare a draft EA Screening Report. The draft EA Screening Report will be made available for public review and comment. CNSC staff recommends that the EA Screening Report be considered by the Commission in a public hearing. The final EA Screening

Report will be submitted to the Commission for consideration and decision. The public will also have an opportunity to comment and present interventions before the Commission on the final EA Screening Report.

Based on authority given it in subsection 17(1) of the CEEA, CNSC staff recommends that the Commission delegate to OPG the conduct of technical support studies for the environmental assessment (EA) and preparation of an EA study report (EASR). OPG would also be delegated the task of consulting the public on Valued Ecosystem Components (VECs) and keeping the public informed about the project and the results of the technical studies.

CNSC staff would retain the responsibility to consult the public on the federal interpretation of the technical studies, on mitigation measures, on follow-up programs and on the conclusions and recommendations made in the Screening Report. CNSC staff will also consult the public on the potential for impacts to health, which would be facilitated through the conduct of a workshop in the local area.

9. Recommendations

CNSC staff recommends that the Commission:

1. approve the EA Guidelines document entitled *EA Guidelines (Scope of Project and Assessment), Environmental Assessment of the Refurbishment and Continued Operations of Pickering B Reactors at the Pickering B Nuclear Generating Station*, attached as Appendix A to this Commission Member Document: and
2. accept that public consultation for this project not be delegated entirely to Ontario Power Generation but that staff take a more active role in consulting the public with respect to this project.

10. References

1. OPG Letter, D.P. McNeil to T. Schaubel, "Proposed Refurbishment of Pickering B for Continued Operation – Project Description for Environmental Assessment", June 15, 2006. BITS 1307371. With Attachment, "Project Description for the Pickering B Refurbishment for Continued Operations Environmental Assessment" (June 2006).
2. OPG Letter, J. Hankinson to T. Schaubel, "Proposed Refurbishment of Pickering B for Continued Operation Submission", June 28, 2006. BITS 1343073.
3. OPG Document. "Project Description for the Pickering B Refurbishment for Continued Operations Environmental Assessment" (June 2006). BITS 1307371.

APPENDIX A

EA Guidelines (Scope of Project and Assessment),
Environmental Assessment for the Refurbishment and Continued Operation of
Pickering B Reactors at the Pickering B Nuclear Generating Station

**Draft EA Guidelines
(Scope of Project and Assessment)**

**Environmental Assessment for the Refurbishment and
Continued Operation of Pickering B Reactors at the
Pickering B Nuclear Generating Station**

Prepared by the Canadian Nuclear Safety Commission

December 2006

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1.0 PURPOSE

The purpose of this document is to provide guidance on the scope of the environmental assessment (EA) to be conducted in relation to Ontario Power Generation's (OPG) proposal to refurbish Units 5, 6, 7 and 8 of the Pickering B Nuclear Generating Station (NGS) to extend the operating life of the units to the end of the service life of the reactors estimated to be until about 2060. Pickering B is located on the Pickering NGS site in the City of Pickering, within the Regional Municipality of Durham, Ontario, on the north shore of Lake Ontario at Moore Point. The site is about 32 km east-northeast of the City of Toronto (downtown) and 21 km southwest of the City of Oshawa. The site is shared with two other separately licensed facilities, the Pickering A NGS and the Pickering Waste Management Facility (PWMF). OPG has submitted a project description of the proposal to the Canadian Nuclear Safety Commission (CNSC).

A federal EA of the proposed project is required under the provisions of the *Canadian Environmental Assessment Act* (CEAA). Under the CEAA, the scope of the project and the scope of the factors included in the assessment are to be determined by the Responsible Authority that, in this case, is the CNSC.

The EA Guidelines describe the basis for the conduct of the EA, and focus the assessment on relevant issues and concerns. The document also provides specific direction to the proponent, OPG, on how to document the technical EA study which will be delegated to them by the CNSC staff pursuant to subsection 17(1) of the CEAA. The document indicates the necessary information to be submitted by the proponent to the CNSC to facilitate the development of the EA Screening Report. In addition, the EA Guidelines provide a means of communicating the CNSC's EA process to stakeholders.

2.0 BACKGROUND

OPG wrote and provided a project description to the CNSC, indicating their intent to refurbish and to continue to operate the Pickering B Units 5, 6, 7 and 8 with a view of extending their operating lives until about 2060 [References 1, 2 and 3].

Pickering B is currently licensed by the CNSC as a Class I Nuclear Facility under the *Nuclear Safety and Control Act* (NSCA). CNSC authorization of licensed activities at Pickering B is governed by the Power Reactor Operating Licence PROL 08.11/2008, issued to OPG by the CNSC on September 14, 2006, pursuant to subsection 24(2) of the NSCA.

CNSC approval to refurbish and extend the operating life of these units requires an amendment pursuant to subsection 24(2) of the NSCA to their current operating licence. The EA to be completed under the CEAA will provide part of the information that the CNSC will use in considering OPG's proposal. The proposal will also be subjected to a thorough evaluation under the provisions of the NSCA and its regulations. That includes a detailed safety review as part of the CNSC licensing process which provides the public with the opportunity to provide input to the Commission prior to any licensing decision being made on the project.

The licensing application does not pertain to the other separately licensed facilities within the Pickering site, including the Pickering A and the existing on-site PWF.

3.0 APPLICATION OF THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT

Pursuant to paragraph 5 (1)(d) of the CEAA, a federal EA is required before the CNSC can amend the current licence to provide OPG with authorization to refurbish and to continue to operate Units 5, 6, 7, and 8 of the Pickering B NGS. The CNSC is the Responsible Authority under the CEAA for the purposes of the assessment.

There are no other CEAA triggers, such as funding, being a proponent or disposing of an interest in land to support the proposed project, that involve the CNSC.

The proposed licensing action would involve authorization of activities relating to a physical work, namely the refurbishment and continued operation of the Pickering B NGS, and thus there is a project for the purposes of the CEAA. There are no identified exclusions from EA for the project pursuant to section 7 of the CEAA and Schedule I of the *Exclusion List Regulations* of the CEAA. Accordingly, CNSC authorization of the licensing for activities related to the refurbishment and continued operation of Units 5, 6, 7 and 8 of the Pickering B facility including the operations of the Pickering B NGS until about 2060, will require that a federal EA be conducted pursuant to the CEAA.

The project is not of a type identified in the *Comprehensive Study List Regulations* of the CEAA. At this time, CNSC staff is not aware of any potentially significant adverse environmental effects or public concerns associated with this project which would warrant a need to have it referred to a mediator or review panel pursuant to section 25 of the CEAA. Thus, the appropriate stream of assessment is a screening. Therefore, pursuant to subsection 18(1) of the CEAA, the CNSC must ensure that a screening-level EA is completed and that a Screening Report be prepared before the proposed licensing decision can be made pursuant to the NSCA.

4.0 IDENTIFICATION OF OTHER FEDERAL AND PROVINCIAL EXPERT DEPARTMENTS

CNSC is the only Responsible Authority (RA) identified under the CEAA for this screening at this time.

Pursuant to the CEAA *Federal Coordination Regulations*, the CNSC has consulted with a number of federal departments to determine whether they are likely to exercise one of the powers, functions or duties under section 5 of the CEAA and/or whether they possess expert assistance that could be used during the assessment in accordance with subsection 12(3) of the CEAA. These are; Health Canada (HC), Environment Canada (EC), Natural Resources Canada (NRCan), the Department of Fisheries and Oceans (DFO), the Department of Indian Affairs and Northern Development (DIAND) and Transport Canada.

The CNSC has also consulted the Ontario Ministry of the Environment (OMOE) to determine whether there are provincial EA requirements under the *Ontario Environmental Assessment Act* that are applicable to the proposal. The Environmental Assessment and Approvals Branch has confirmed that the *Environmental Assessment Act* does not apply to this project.

5.0 DELEGATION OF ASSESSMENT STUDIES TO ONTARIO POWER GENERATION

Pursuant to subsection 17(1) of the CEAA, the CNSC will delegate to OPG the conduct of technical support studies for the EA, part of the public consultation to be carried out for this project, and the preparation of an EA Study Report.

OPG will submit a draft version of its EA Study Report and technical support studies to the CNSC. CNSC will distribute the draft EA Study Report and supporting documentation to Federal Authorities, and the appropriate provincial authorities, for review and comment. Based on comments received, CNSC may request the proponent to revise its EASR, or request that the proponent produce a final EA Study Report. When the EA Study Report is considered satisfactory to CNSC and Federal Authority technical reviewers, CNSC will prepare an EA Screening Report. A draft version of the EA Screening Report will be made available for review and comment by the public. CNSC will consider comments received, make appropriate revisions and submit a revised EA Screening Report to the Commission for consideration and decision.

6.0 CANADIAN ENVIRONMENTAL ASSESSMENT REGISTRY

The CNSC has established a “*Registry*” for this assessment in accordance with section 55 of the CEAA. The Registry consists of two components: an Internet site and project files.

CSNC staff has posted this project on the Canadian Environmental Assessment Registry (CEAR), which can be accessed on the Internet Web site of the Canadian Environmental Assessment Agency (www.ceaa.gc.ca). The CEAR number for this project is 06-01-21226.

The CEAR will include the following documentation:

- description of the project;
- notices of commencement and termination;
- EA decisions; and
- notices requesting public input.

Interested parties will be able to obtain copies of these documents by accessing the CEAR website and downloading the files.

CNSC staff is also responsible for maintaining the project file for this environmental assessment, which will contain all records produced, collected, or submitted with respect to the EA for this

project. Interested parties may obtain a listing of the documents in the project file, as well as copies of specific documents on the list, from CNSC staff contacts (see section 12.0).

7.0 SCOPE OF THE PROJECT

In determining the scope of a project for an assessment under the CEAA, one must determine which physical works (e.g., facilities) are involved in the proposal and what specific undertaking(s) will be carried out in relation to those physical works. The physical works in this case are the Pickering B Units 5, 6, 7 and 8 and ancillary systems necessary for their operation through to about 2060. The proposed undertakings in relation to the physical works are the refurbishment and continued operation of these units until about 2060.

Decommissioning is not part of the scope of project; however, a description of the preliminary decommissioning plan will be required for this EA. Decommissioning will be subject to the requirements under the NSCA and a determination regarding the application of the CEAA will be made at that time.

The scope of project will consider refurbishment activities, including:

- site and facility preparation in support of refurbishment, including site preparation, temporary facilities and staging areas;
- refurbishment activities at each of the four Pickering B units comprising of the following activities:
 - defuelling and dewatering of the reactor;
 - management of heavy water during refurbishment;
 - replacement of reactor components (fuel channel assemblies and feeder pipes);
 - replacement of steam generators;
 - replacement or upgrade of systems and components for balance of plant;
 - preparation of low and intermediate-level refurbishment waste for storage;
 - transportation of low and intermediate-level refurbishment waste on the Pickering site; and
 - management of non-nuclear waste;
- construction of structures for the interim storage of low and intermediate-level steam generator and fuel assembly refurbishment waste at the Pickering site;
- interim storage of low and intermediate-level steam generator and fuel assembly refurbishment waste at the PWMF or transport off-site to the Western Waste Management Facility (WWMF) for centralized storage;
- transport off-site to the WWMF for centralized storage of low and intermediate-level miscellaneous refurbishment waste;
- refuelling and restarting the reactors;
- normal repair and maintenance of components while each reactor undergoes a major refurbishment outage; and
- Transport of materials, labour force and replacement components to the site.

The scope of project will consider the following activities related to the continued operation of the refurbished power reactors until about 2060, including:

- continued operation, maintenance and generation of power by refurbished reactor units;
- continued management of operating low and intermediate-level radioactive waste;
- continued interim storage of used fuel at the Pickering Used Fuel Dry Storage Facility (PUFDSF) within the PWWF;
- conduct of ongoing maintenance and repair;
- construction of additional storage capacity at the PWWF PUFDSF for the used nuclear fuel to be produced from the proposed continued operation of the Pickering B units;
- interim storage for the additional used nuclear fuel and the refurbishment waste at the PWWF; and
- transport of routine operational low and intermediate-level waste to the WWMF.

In addition, the scope of project for this EA will also include the assessment of all waste management-related activities including waste reduction activities and decontamination.

There are other projects, past, present and future, and activities at the Pickering NGS which do not fall within the scope of the current project. These projects and activities have been the subject of other CNSC licences and include the expansion of low and intermediate waste storage capacity at the WWMF for routine operational and refurbishment wastes. A screening level EA for this increased capacity at the WWMF was completed and received a favourable EA decision from the CNSC on February 15, 2006. It should be noted that the WWMF receives the routine operational wastes from all of Ontario's power reactors, including Pickering, and is also the candidate site to receive for storage the low and intermediate level refurbishment waste from the Pickering B refurbishment waste project.

8.0 FACTORS TO BE CONSIDERED IN THE SCREENING

The scope of the screening EA 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 CNSC requires to be considered.

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

- 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; and
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.

With the discretion allowed for in paragraph 16(1) (e) of the CEAA, the CNSC will also require consideration of:

- the purpose of the project;
- consideration of traditional and local knowledge, where relevant;
- the need for, and requirements of, a follow-up program in respect of the project; and
- 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.

Additional or more specific factors or issues to address in the EA may be identified following consultation with the expert Federal Authorities and stakeholders during the conduct of the EA.

9.0 ASSESSMENT METHODOLOGY

9.1 Structure of the EA Screening Report

CNSC staff will prepare the EA Screening Report under the following section headings, and recommends that the proponent's EA Study Report use a similar structure.

Screening Report Section Headings:

- 1) Introduction
- 2) Application of the CEAA
- 3) Scope of the Project
- 4) Scope of the Assessment
- 5) Project Description
- 6) Spatial and Temporal Boundaries of the Assessment
- 7) Description of the Existing Environment
- 8) Assessment and Mitigation of Environmental Effects
 - description of assessment methodology
 - effects of normal operations, malfunctions and accidents, and effects of the environment on the project
 - decommissioning
- 9) Cumulative Environmental Effects
- 10) Significance of Residual Effects
- 11) Stakeholder Consultation
- 12) Follow-up Program
- 13) Conclusions and Recommendations for Decision
- 14) References

The recommended structure serves as a framework for explaining how the assessment factors required by subsection 16(1) of the CEAA are to be considered systematically in the screening-level EA Study Report. In the EA Study Report, information about the project and the existing environment is necessary to permit such a systematic consideration. The results of the EA Study Report will be documented in the subsequent EA Screening Report to be prepared by CNSC staff.

The parts of the assessment that are to be delegated to OPG, in accordance with subsection 17(1) of the CEAA, are to be documented in the form of a technical EA Study Report (EASR) in a manner consistent with this structure. OPG's EA Study Report will be used by CNSC staff to draft the EA Screening Report.

9.2 Specific Information Requirements

9.2.1 Purpose of the Project

The EA Study Report should include a clear and comprehensive statement of the purpose of the project. In this case, the purpose of the project is to ensure continued contribution by Pickering B, to a reliable and stable electricity supply for industrial, commercial and residential consumers in Ontario.

The purpose of the screening is to determine if the proposed:

- refurbishment of Pickering B Units 5, 6, 7 and 8; and
- extended operation of these units until about 2060

is likely to cause significant adverse environmental effects.

The need for the electricity to be generated by OPG would involve consideration of broader public policy issues that are under the authority of the Province of Ontario and over which the CNSC has no regulatory authority. Consequently this issue is not within the scope of this EA.

Similarly, the separate questions of "alternatives to" the project for generating electricity such as by building a hydroelectric facility or conserving energy are matters under the authority of the Province of Ontario and are beyond the CNSC's legislated mandate and control under the NSCA. Furthermore, this is an EA for a specific project, rather than for a policy direction. "Alternative means" of carrying out the project such as location, or alternative means of refurbishing components are not relevant given Pickering B NGS is an existing facility of a particular design.

9.2.2 Project Description

An adequate description of the project is necessary to permit a reasonable consideration in the screening of the environmental effects of the project. The main objective of the project description is to identify and characterize those specific components and activities of the project that have the potential to interact with, and thus result in a likely change or disruption to the surrounding environment, during normal operations and during malfunctions and accidents.

The description of the project will include and elaborate upon, the items identified in the project scope, supported with appropriate maps and diagrams.

The description of the project will include a proposed schedule for the staged restart and return to service of the Pickering B Units 5, 6, 7 and 8. To ensure a conservative assessment approach, it

should be assumed that all four Pickering B reactor units will continue operating through to about 2060. The maximum effects of operation would therefore be assessed even though all units may not be actually operating simultaneously during the entire period.

The Pickering B NGS is an existing licensed facility with an operating history. Actual environmental performance information, in addition to future performance predictions, will therefore be considered in describing the characteristics of the project to the extent that it is relevant to the assessment.

The following information addressing the refurbishment and the continued operation phases of the project will be provided in summary form; where applicable, reference may be made to more detailed information.

General Information, Design Characteristics and Normal Operations:

- the location of the project;
- the planned operational life (justified on a unit-by-unit basis where applicable);
- the basic configuration, layout, shape, size, design and operation of the facility;
- the key operational components of the plant (following completion of refurbishment work), including a discussion of component age and wear issues where relevant to future environmental performance and reliability;
- the key components of the plant and its physical security systems (excluding prescribed information), designed specifically to isolate the project from the surrounding environment, or to prevent, halt or mitigate the progress or results of malfunctions and accidents;
- identify and describe engineered and administrative controls, including use of an approved margin of subcriticality for safety, which would assure that the entire process will be subcritical under normal and credible abnormal conditions – accidents or accident sequences – that have frequency of occurrence equal to or greater than one in a million years;
- a discussion of other past events that are relevant to the assessment of future environmental performance and reliability;
- the stored inventories of radioactive and other hazardous materials used as part of the project, including locations and storage methods, and criticality control plans;
- the estimated activity in Bq of the waste that will be generated and stored at each of the waste management areas as a result of refurbishment;
- the sources, types and quantities of radiological and non-radiological waste, including hazardous waste, predicted to be generated by the project;
- the on-site processes for the management of radioactive and non-radioactive waste, including hazardous waste, such as collection, handling and transportation, to be generated by the project;
- the sources, quantities and points of release from the project of routine radiological and non-radiological emissions and effluents, including thermal (heat) releases;
- the predicted doses to workers, including doses to contract workers, involved with the operations and activities that are within the scope of this project;
- the sources and characteristics of any fire hazards;

- the sources and characteristics of any noise, odour, dust and other likely nuisance effects from the project;
- results of past emission and effluent monitoring at the Pickering B NGS site as relevant to establishing a pre-project environmental baseline and making future predictions of environmental performance. Limitations in the coverage and/or accuracy of past monitoring information should be discussed;
- the predictions of future emissions and effluents from the project under normal operating conditions;
- the sources and characteristics of any potential risks (including radiological risks) to workers, the public or the environment from the project;
- key operational procedures relevant to protection of workers, the public and the environment relating to the project, including the criticality control program; and
- a description of the relevant organizational and management structure, and staff qualification requirements with emphasis on safety and environmental management programs.

Malfunctions and Accidents

Information on project malfunctions and accidents is also necessary to permit consideration of relevant 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 Screening Report, and will include:

- an identification and discussion of any past abnormal plant operations, accidents and spills to the extent that they are relevant to the current assessment;
- a description of specific criticality events and a demonstration that consequences of the events do not violate criteria established by international standards [Reference 4] and national guidance [Reference 5] as a trigger for a temporary public evacuation;
- a description of any contingency, clean-up or restoration work in the surrounding environment that would be required during, or immediately following, the postulated malfunction, accident and criticality events.

Early in the conduct of the EA studies, the malfunctions and accidents to be considered in the EA will be reviewed and must be accepted by CNSC staff.

Preliminary Decommissioning Plan

A preliminary decommissioning plan for the facility will be included in the assessment. The preliminary plan will document the preferred decommissioning strategy, including a justification of why this is the preferred strategy. It will also include end-state objectives, the major decontamination, disassembly and remediation steps; the approximate quantities and types of waste generated; and an overview of the principal hazards and protection strategies envisioned for decommissioning.

9.2.3 *Spatial and Temporal Boundaries of the Assessment*

The consideration of the environmental effects in the screening needs to be conceptually bounded in both time and space. This is more commonly known as defining the *study areas* and *time frames*, or spatial and temporal boundaries, of the screening assessment.

The geographic study areas for this screening must encompass the areas of the environment that can reasonably be expected to be affected by the project, or which may be relevant to the assessment of cumulative environmental effects. Study areas will encompass all relevant components of the environment including the people; non-human biota; land; water; air and other aspects of the natural and human environment. Study boundaries will be defined taking into account ecological, technical and social/political considerations.

The following geographic study areas are suggested:

- Site Study Area*: The Site Study Area includes the facilities, buildings and infrastructure at the Pickering B facility and the area within the 914 metre exclusion zone for the site which encompasses both land surface and part of Lake Ontario water surface. This area is illustrated on Figure 2.1 of OPG's Project Description [Reference 3].
- Local Study Area*: The Local Study Area is comprised of an area which lies outside of the Site Study Area. It is defined as an area which includes lands within the City Of Pickering, the Town of Ajax, and the eastern part of the Greater Toronto Area (Scarborough). This study area also includes a portion of Lake Ontario abutting the property and used by those communities for activities such as recreation and community water supply and waste water discharge. The spatial coverage of this study area is generally illustrated on Figure 1.1 of OPG's Project Description [Reference 3].
- Regional Study Area*: The Regional Study Area extends beyond the Local Study Area and can be defined as the area within which there is the potential for cumulative and socio-economic effects. This area generally extends from the Darlington NGS in the east, the eastern part of the City of Toronto to the west and includes the municipalities in the Regional Municipality of Durham north of the Pickering site.

The temporal boundaries for this assessment must establish over what period of time the project-specific and cumulative effects are to be considered. The initial time frame for the assessment will be the duration of the project; that is, the planned operational life of Pickering B through to the end of the service life of the reactors estimated to be about 2060 and the decommissioning based on a preliminary decommissioning plan even though decommissioning is not included as part of the scope of the project. Where the effects of the project are anticipated to continue beyond the operation of the facility (for example, as a result of environmental contamination from the project), then a time frame appropriate for describing and taking into account potentially longer-term residual effects will be used.

Both the study areas and time frames will remain flexible during the assessment to allow the full extent of likely environmental effects to be considered in the screening. For instance, should the results of modelling demonstrate that there is dispersion of a contaminant that is likely to cause an environmental effect beyond the boundaries identified above, adjustments to the study areas or time frames will be made to take into account these effects in the EA.

9.2.4 *Description of the Existing Environment*

A description of the existing environment is needed to determine the likely interactions between the project and the surrounding environment and, conversely, between the environment and the project. Both the biophysical environment and the socio-economic (human, cultural) environment are to be considered.

Present physical security systems must be included in the description (excluding prescribed information).

An initial screening of likely project-environment interactions will be used in identifying the relevant components of the environment that need to be described. In general, the environmental components that are typically described in the various study areas include, but are not necessarily limited to:

- human health;
- surface water;
- atmosphere;
- aquatic environment;
- geology and hydrogeology;
- terrestrial environment;
- land resources;
- cultural heritage;
- The current use of lands and resources for traditional purposes by aboriginal persons; and
- socio-economic conditions.

These environmental components should be further divided into environmental sub-components.

Valued Ecosystem Components (VECs) in the existing environment will be identified and used as specific assessment end-points. VECs are environmental attributes or components identified as having a legal, scientific, cultural, economic or aesthetic value. VECs should be identified following consultations with the public, First Nations, federal and provincial government departments and other relevant stakeholders. The VECs proposed in the EA methodology for this project will be reviewed and accepted by CNSC staff in the early phases of the EA study.

The required level of detail in the description of the existing environment will be less where the potential interactions between the project and various components of the environment are weak, or remote in time and/or space.

Relevant existing information, including traditional knowledge, may be used to describe the environment. Where that information is significantly lacking, additional research and field studies may be required to complete the screening assessment. CNSC staff will review any work done by OPG to fill identified gaps in information as progress is being made.

9.2.5 *Assessment and Mitigation of Environmental Effects*

The consideration of environmental effects in the screening should be done in a systematic and traceable manner. The assessment methodology will be summarized. The results of the assessment process should be clearly documented using summary matrices and tabular summaries where appropriate.

Assessment of Effects Caused by the Project

The assessment will be conducted in a manner consistent with the following general method:

- 1) ***Identify the potential interactions between the project activities and the existing environment during construction and normal operations, and during identified relevant malfunctions and accidents.***

Specific attention will be given to interactions between the project and the identified VECs. In this step, the standard design and operational aspects from the project description that prevent or significantly reduce the likelihood of interactions occurring with the environment should be reviewed. Opportunities for additional impact mitigation measures are addressed in step 3 below.

- 2) ***Describe the resulting changes that likely would occur to the components of the environment and VECs as a result of the identified interactions with the project.***

Each environmental change must be described in terms of whether it is direct or indirect, and positive or adverse.

Identified changes in socio-economic conditions and various aspects of culture, health, heritage, archaeology and traditional land and resource use may be limited to those that are likely to result from the predicted changes that the project is likely to cause to the environment. The consideration of public views, including any perceived changes attributed to the project, should be recognized and addressed in the assessment methodology.

For each identified effect, the predicted magnitude, duration, frequency, timing, probability of occurrence, ecological and social context, geographic extent, and the degree of reversibility, should be considered in determining if it is a likely adverse effect.

Quantitative as well as qualitative methods may be used to identify and describe the likely adverse environmental effects. Professional expertise and judgment may be used in interpreting the results of the analyses. The basis of predictions and interpretation of results, as well as the importance of remaining uncertainties, will be clearly documented in the EA study report.

3) *Identify and describe mitigation measures that may be applied to each likely adverse effect (or sequence of effects), and that are technically and economically feasible.*

Mitigation strategies should reflect avoidance, precautionary and preventive principles; that is, emphasis should be placed on tempering or preventing the cause or source of an effect, or sequence of effects, before addressing how to reverse or compensate for an effect once it occurs.

Where the prevention of effects cannot be assured, or the effectiveness of preventive mitigation measures is uncertain, further mitigation measures in the form of contingency responses, including emergency response plans, will be described.

Where cost/benefit analyses are used to determine economic feasibility of mitigation measures, the details of those analyses will be included or referenced.

4) *Describe the significance of the residual environmental effects that likely will occur as a result of the project, having taken into account the implementation of the proposed mitigation measures.*

The criteria for judging and describing the significance of the residual (post-mitigation) effects will include: magnitude, duration, frequency, timing, and probability of occurrence, ecological and social context, geographic extent, and degree of reversibility. Specific assessment criteria proposed in the EA methodology for this project will be submitted to CNSC in the early phases of the EA study for review and acceptance. Existing regulatory and industry standards and guidelines are relevant as points of reference for judging significance. However, professional expertise and judgement should also be applied in judging the significance of any effect. All applicable federal and provincial laws must be respected.

The analysis must be documented in a manner that readily enables conclusions on the significance of the environmental effects to be drawn. The CNSC, as the RA for the EA project, must document in the screening report a conclusion, taking into account the mitigation measures, as to whether the project is likely to cause significant adverse environmental effects.

Assessment of Effects of the Environment on the Project

The assessment must also take into account how the environment could adversely affect the project, for example, from severe weather or seismic events. The assessment must also take into account any potential effects of climate change on the project, including an assessment of

whether the project might be sensitive to changes in climate conditions during its life span, taking into consideration guidance provided in the Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment publication “*Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners*” [Reference 6].

This part of the assessment will be conducted in a step-wise fashion, similar to that described for the foregoing assessment of the project effects. The possible important interactions between the environment and the project will be first identified, followed by an assessment of the effects of those interactions, the available additional mitigation measures, and the significance of any remaining residual environmental effects.

9.2.6 *Assessment of 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 same geographic area and time). These are referred to as *cumulative environmental effects*.

An identification of the specific projects and activities considered in the cumulative effects will be included in the EA. In general, the cumulative effects assessment will consider the combined effects of the project with the neighbouring or regional industries and other developments.

The information available to assess the environmental effects from other projects can be expected to be more conceptual and less detailed as those effects become more remote in distance and time to 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 that considered in the assessment of the direct project-environment interactions.

Where potentially significant adverse cumulative effects are identified, additional mitigation measures may be necessary.

9.2.7 *Assessment of the Effects on the Capacity of Renewable and Non-renewable Resources*

The assessment must also take into account whether the likely project-related environmental effects will have an impact on the capacity of natural and non-renewable resources to meet the needs of the present and those of the future.

The potential interactions between the project and the environment will be identified and assessed in order to determine the likelihood of interactions between the project and resource sustainability.

Three environmental aspects are associated with renewable resources that may be affected by the project: the terrestrial environment, surface water and groundwater resources, and the aquatic environment, including resources.

9.2.8 *Significance of the Residual Effects*

The preceding steps in the screening will consider the significance of the environmental effects of: the project on the environment; the natural hazards on the project; project malfunctions and accidents; and other projects and activities that could cause cumulative effects.

The screening will consider all of these effects in coming to a final conclusion as to whether the project, taking into account the mitigation measures, will likely cause significant adverse environmental effects. The CNSC, as the RA, will document this conclusion in the Screening Report.

9.2.9 *Stakeholder Consultation*

The assessment will include notification of, and consultation with, the potentially affected stakeholders, including the local public. Various media will be used to inform and engage individuals, communities, interest groups, local governments and other stakeholders in the assessment. OPG is expected to hold appropriate public consultation meetings. The proponent's stakeholder consultation program will be monitored by the CNSC throughout the EA process.

Throughout the EA process, various stakeholders, including the following, will be consulted:

- federal government
- provincial government
- local government
- established committees
- OPG employees
- general public
- First Nations and aboriginal communities
- neighbouring residents
- local businesses
- non-government organizations and interest groups

Based on the authority given it in subsection 17(1) of the CEEA, OPG is delegated the responsibility to consult the public on Valued Ecosystem Components (VECs) and keeping the public informed about the project and the results of the technical studies. CNSC staff are responsible to consult the public on the federal interpretation of the technical studies, mitigation measures, and follow-up programs. CNSC staff will also conduct a workshop with the purpose of consulting the public on the potential for impacts to health.

The EA Screening Report will contain a summary review of the comments received during this EA process. The EA Screening Report will indicate how issues identified have been considered in the completion of the assessment, or where relevant, how they may be addressed in any subsequent licensing and compliance process.

Opportunities will be provided to comment and present interventions before the Commission on the EA Guidelines before they are finalized and later in the process on the final EA Screening Report before the Commission renders its decision on the EA in accordance with section 20 of the CEEA.

OPG has provided a draft version of its “Community and Stakeholder Consultation and Communication Plan”. This plan is outlined in Appendix A of the document entitled “Project Description for the Pickering B Refurbishment for the Continued Operations Environmental Assessment (June 2006) [Reference 3]. CNSC staff is currently conducting a review of the plan for its acceptability.

9.2.10 Follow-up Program

A preliminary design and implementation plan for a follow-up program will be included in the EA Study Report.

The purpose of the follow-up program is to assist in determining if the environmental and cumulative effects of the project are as predicted. It is also to confirm whether the impact mitigation measures are effective, and to determine if any new or modified mitigation strategies may be required. The design of the program will be appropriate to the scale of the project and the issues addressed in the EA.

If an amendment to the Pickering B NGS operating licence is granted to OPG under the NSCA, the CNSC licensing and compliance program will be used as the mechanism for ensuring the final design and implementation of any follow-up program and the reporting of program results. The follow-up program would be based on the regulatory principles of compliance, adaptive management, reporting and analysis.

10.0 ENVIRONMENTAL ASSESSMENT PROCESS

The following points indicate the key steps likely to be followed by CNSC staff during the environmental assessment process.

- Determination of the application of the CEAA to the project; application of the CEAA Federal Coordination Regulations; establishment of the Canadian Environmental Assessment Registry, consisting of internet and project files; and stakeholder notification;
- Preparation and distribution of draft EA Guidelines for review by proponent, federal and provincial authorities; CNSC staff review and disposition of comments received;
- Distribution of draft EA Guidelines to the public for review;
- Review and disposition of comments received;
- Revision draft EA Guidelines, taking into consideration comments received and submission to the Commission for consideration at a public hearing;
- CNSC issuance of EA Guidelines and delegation of certain public consultation and the technical studies to the proponent;
- Receipt of draft EA Study Report from the proponent, OPG;
- Distribution of the draft EA Study Report to a review team (CNSC, federal and provincial authorities);
- CNSC-led public consultation on the federal review of the AESR and on health effect;
- Revision by the proponent, as appropriate, of the EA Study Report;
- Acceptance of the EA Study Report;

- Preparation of the draft EA Screening Report;
- Public review and comment on the draft EA Screening Report;
- Review and dispositioning of public comments;
- Completion of the EA Screening Report;
- Submission of final EA Screening Report to Commission for consideration and decision in accordance with section 20 of the CEEA.

11.0 CONCLUSIONS AND RECOMMENDATIONS FOR DECISION

The EA Screening Report will present a conclusion by CNSC staff as to whether the project is likely to cause significant adverse environmental effects, taking into account the appropriate mitigation measures. CNSC staff will make recommendations to the Commission regarding the EA decision and on project-related public concerns, consistent with section 20 of the CEEA. The Commission will make its decision on the EA Screening Report following consideration of the said report. If the Commission concludes that the project is not likely to cause significant adverse environmental effects, taking into account the appropriate mitigation measures, it may proceed with consideration of OPG's application for approvals and associated amendment to its operating licence, under the provision 24(2) of the NSCA.

12.0 CONTACTS FOR THE ASSESSMENT

Anyone wishing to obtain additional information or provide comments on any aspect of the environmental assessment being conducted on the proposed refurbishment and continued operation of Pickering B reactor Units 5, 6, 7 and 8 may do so through the following CNSC staff contacts:

Claude David Environmental Assessment Specialist Environmental Assessment and Protection Division Canadian Nuclear Safety Commission 280 Slater Street, P.O. Box 1046 Ottawa, Ontario K1P 5S9 Phone: 1-800-668-5284 Fax: (613) 995-5086 Internet: ceaainfo@cnsccsn.gc.ca	T.E. Schaubel Director Pickering Regulatory Program Division Canadian Nuclear Safety Commission 280 Slater Street, P.O. Box 1046 Ottawa, Ontario K1P 5S9 Phone: 1-800-668-5284 Fax: (613) 995-5086 Internet: ceaainfo@cnsccsn.gc.ca
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13.0 REFERENCES

1. OPG Letter, D.P. McNeil to T. Schaubel, “Proposed Refurbishment of Pickering B for Continued Operation – Project Description for Environmental Assessment”, June 15, 2006. BITS 1307371. With Attachment, “Project Description for the Pickering B Refurbishment for Continued Operations Environmental Assessment” (June 2006).
2. OPG Letter, J. Hankinson to T. Schaubel, “Proposed Refurbishment of Pickering B for Continued Operation Submission”, June 28, 2006. BITS 1343073.
3. OPG Document. “Project Description for the Pickering B Refurbishment for Continued Operations Environmental Assessment” (June 2006). BITS 1307371.
4. Food and Agriculture Organization of the United Nations, International Atomic Energy Agency, International Labour Organization, OECD Nuclear Energy Agency, Pan American Health Organization, United Nations Office for the Co-Ordination of Humanitarian Affairs, World Health Organization, “Preparedness and Response to Nuclear or Radiological Emergency, Safety Requirements”, Safety Standards Series No. GS-R-2, IAEA, Vienna, Austria, 2002.
5. Health Canada, Canadian Guidelines for Intervention during a Nuclear Emergency”, Document H46-2/03-32E, Ottawa, Ontario, November 2003.
6. Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment. “Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners”, November 2003.

14.0 GLOSSARY OF TERMS

1. 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.
2. Decommissioning means those actions taken, in the interest of health, safety, security and protection of the environment, to retire a licensed activity/facility permanently from service and render it to a predetermined end-state condition.

APPENDIX B

Dispositioning of Comments from Federal Authorities and the
Ontario Ministry of the Environment

Pickering B Refurbishment Draft EA Guidelines

FEDERAL AUTHORITIES - DISPOSITION TABLE – COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	Response
INAC-1 ¹	INDIAN AND NORTHERN AFFAIRS CANADA	Indian and Northern Affairs Canada (INAC) is not likely to require an environmental assessment of this project under s. 5 of the Canadian Environmental Assessment Act.	Noted. No changes to the EA Guidelines required.
INAC-2 ¹		<p>Section 4.4 of the Project Description indicates that the proponent has identified six First Nation communities that “could have an interest in the Project”. It is Indian and Northern Affairs Canada’s (INAC) recommendation that the proponent continue to keep these First Nations, and other mentioned organizations, informed of the project's progress. The proponent can contact and advise them accordingly, at the following addresses:</p> <ul style="list-style-type: none"> • Alderville First Nation; • Curve Lake First Nation; • Hiawatha First Nation; • Mississaugas of Scugog Island; • Chippewas of Georgina Island; • Mississaugas of the New Credit; and • Metis Nation of Ontario. 	<p>All of these First Nation community leaders have been notified of this proposal and provided with a copy of the project description and of the draft Environmental Assessment (EA) Guidelines with an invitation to comment on the proposal and on the draft guidelines.</p> <p>CNSC staff will ensure that the First Nations communities continue to be consulted and keep informed of the progress of this EA.</p> <p>No changes to the EA Guidelines required.</p>
TC-1 ²	TRANSPORT CANADA	Transport Canada has determined that the proposed works will not likely require an approval under subsection 6 (4) or paragraph 5 (1) (a) of the Navigable Waters Protection Act.	Noted. No changes to the EA Guidelines required.
TC-2 ²		Any work, including, any bridge, boom, dam, wharf, dock, pier, tunnel or pipe and the approaches or other works necessary or appurtenant thereto, any dumping of fill or excavation of materials from the bed of a navigable water, any telegraph or power cable or wire, or any structure, device or thing, whether similar in character to anything referred to in this definition or not, that may interfere with navigation must be reviewed by Transport Canada’s Navigable Waters Protection Program to determine if the work is likely to cause a substantial interference with navigation. If this is found to be the case, the project may not proceed until an NWPA approval is granted. The need for an approval under section 5(1) or 6(4) of the NWPA triggers the requirement for an environmental assessment in accordance with the CEAA Law List Regulations. Before Transport Canada can issue an approval under the NWPA, a CEAA EA must be conducted.	<p>This information has been passed on to the proponent, Ontario Power Generation (OPG).</p> <p>No changes to the EA Guidelines required.</p>
TC-3 ²		<p>OPG is advised to consult the following websites:</p> <ul style="list-style-type: none"> • NWPP website: <http://www.tc.gc.ca/marinesafety/Ships-and-operations-standards/nwp/menu.htm> • Transport Canada’s Proponents' Guide for Environmental Assessment 	<p>This information has been passed on to the proponent OPG.</p> <p>No changes to the EA Guidelines required.</p>

FEDERAL AUTHORITIES - DISPOSITION TABLE – COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	Response
		<p>http://www.tc.gc.ca/programs/environment/environmentalassessments/guide/menu.htm</p> <ul style="list-style-type: none"> and for more information on the NWPA and CEAA please refer to: http://www.tc.gc.ca/programs/Environment/environmentalassessment/guide/module5.htm 	
TC-4 ³		<p>TC's Civil Aviation Safety in the Ontario Region has confirmed no concerns with the present operation of the Pickering Nuclear Generating Station. During the recent enactment of the Pickering Airport Site Zoning Regulations (PASZR), some members of the public raised concerns about the proximity of the nuclear generating station and a possible future airport at Pickering. However, TC understands that the nuclear generating station is well insulated with thick concrete walls and well protected from all foreseeable disasters such as earthquakes and could even withstand the impact resulting from a collision with a large aircraft.</p> <p>TC Civil Aviation's main concern during refurbishment would be the possibility of escaping steam, gases, or other obscuring phenomena that would affect the vision of pilots. A cursory review of the project description does not raise any concerns in that area. It appears that all waste products and vapours are contained and stored and would not pose a danger to aviation safety.</p> <p>If a decision is made to build an airport at Pickering, the Greater Toronto Airports Authority (GTAA) would be the airport operator. We recommend that the Canadian Nuclear Safety Commission include the GTAA in its consultations.</p>	<p>The information provided has been passed on to the proponent, Ontario Power Generation (OPG).</p> <p>No changes to the EA Guidelines required.</p>
NRCan-1 ⁴	NATURAL RESOURCES CANADA	Natural Resources Canada does not have a responsibility under section 5 of the Canadian Environmental Assessment Act	Noted. No changes to the EA Guidelines required.
NRCan-2 ⁴		In the context of subsection 12(3) of the CEAA, NRCan has expertise in specific areas that may apply to the project.	Noted. No changes to the EA Guidelines required.
NRCan-3 ⁵		With regards to the Draft EA Guidelines (scope of project and scope of assessment) as well as the Project Description for the Pickering B Refurbishment for Continued Operation, Natural Resources Canada does not have any comments at this time.	Noted. No changes to the EA Guidelines required.
HC-1 ⁶	HEALTH CANADA	Health Canada confirms [...] that it is not a responsible authority in accordance with the CEAA.	Noted. No changes to the EA Guidelines required.
HC-2 ⁶		Health Canada could provide assistance by way of expert knowledge and information in accordance with subsection 12(3) of the CEAA.	Noted. No changes to the EA Guidelines required.

FEDERAL AUTHORITIES - DISPOSITION TABLE – COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	Response
HC-3 ⁶		The responsibility for health lies primarily with the Ontario Ministry of Health and Long-Term Care, and therefore, we trust that the appropriate provincial authorities will be involved in addressing any related issues and concerns.	Involvement from the Ontario Ministry of Health and Long-Term Care, the Durham Region Health Department, including the Commissioner and Medical Officer of Health and various community health committees has been sought. No changes to the EA Guidelines required.
AECL ⁷		Further to the CEEA’s <i>Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements</i> AECL hereby confirms the following with respect to the project: a) AECL has determined that it is not likely to require an EA of the project under section 5 of the CEEA; and b) AECL has determined that it possesses specialist and expert information and knowledge that could be of assistance for the completion of this environmental assessment. AECL is not intending to comment on the draft EA Guidelines.	Noted. CNSC Staff has determined that it will not seek expert advice from AECL because of potential conflict of interest given that AECL may be involved as a contractor in the refurbishment work. No changes to the EA Guidelines required.
EC-1 ⁸	ENVIRONMENT CANADA	The following comments are provided on behalf of EC as a specialist expert department pursuant to section 12(3) of the CEEA Please be advised that EC does not have any obligations as a Responsible Authority under CEEA for this proposal.	Noted. No changes to the EA Guidelines required.
EC-3 ⁸		<u>Draft EA Guidelines (Scope of Project and Assessment)</u> 7.0 Scope of the Project Environment Canada suggests that the scope of the project include site preparation, temporary facilities and staging areas under the ‘site and facility preparation in support of refurbishment section.’	Agree. The EA Guidelines will be modified to include the words “including site preparation, temporary facilities and staging areas” under “Site And Facility Preparation in Support of Refurbishment” in section 7.
EC-4 ⁸		Environment Canada also recommends that the on-going maintenance and repair that may occur during the major refurbishment outages (as per section 3.2.1.4 <i>Balance of Plant Repair and Maintenance</i> in the Project Description) be included as an activity under refurbishment activities at each of the four Pickering B units.	Agree. The EA Guidelines will be modified to include the words “normal repair and maintenance of many components while each reactor undergoes a major refurbishment outage” under ‘Site And Facility Preparation in Support of Refurbishment’ in section 7.
EC-5 ⁸		9.1 Structure of the EA Screening Report The second bullet under heading 8, Assessment and Mitigation of Environmental Effects, says ‘effects of normal operations, malfunctions and	Agree. The EA Guidelines will be modified to delete the term

FEDERAL AUTHORITIES - DISPOSITION TABLE – COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	Response
		accidents, and natural hazards.’ Environment Canada suggests replacing natural hazard with ‘effects of the environment on the project’ as this terminology is consistent with the text in section 9.2.5 <i>Assessment of the Effects of the Environment on the Project</i> , and incorporates effects such as climate change, entrainment of attached algae on water intakes, and other potential modes of failure.	“natural hazards” and replaced with “effects of the environment on the project”.
EC-6 ⁸		9.2.2 Project Description - General Information, Design Characteristics and Normal Operations: Bullet 8: ‘The stored inventories of radioactive and other hazardous materials used as part of the project including locations and storage methods, and criticality control points.’ Environment Canada recommends that, where possible, the quantities of hazardous materials also be included in this inventory.	Comment noted. The term “inventory” implies that quantities would be provided, therefore, staff expects OPG to provide quantities relating to hazardous materials in the project description section of its EA Study Report. No changes to the EA Guidelines required.
EC-7 ⁸		Bullet 10: ‘The on-site processes for the management of radioactive and non-radioactive waste, including hazardous waste, such as collection, handling and transportation, to be generated by the project.’ Environment Canada suggests that the project description section also include the methods of disposal for radioactive and non-radioactive waste.	Waste disposal is not part of the project description. OPG is expected to discuss methods of disposal for non-radioactive waste in the project description section of its EA Study Report. No changes to the EA Guidelines required.
EC-8 ⁸		It was not clear from the Pickering B Refurbishment for Continued Operation Project Description whether there will be new storage facilities constructed that have not been previously assessed under CEAA. Environment Canada recommends that this section describe, at the level of detail available at this time, any new storage facilities likely required over the continued operation lifetime of the Pickering B reactors.	Please refer to section 7, “Scope of project” of the EA Guidelines for more details regarding previous environmental assessments carried out for storage facilities and for a description of additional storage capacity which will be required in order to continue to operate the reactors. No changes to the EA Guidelines required.
EC-9 ⁸		9.2.4 Description of the Existing Environment Environment Canada can assist in the identification of Valued Ecosystem Components (VECs) for this project, at CNSC’s request, prior to or during the preparation of the Environmental Assessment Study Report.	Noted. No changes to the EA Guidelines required.
EC-10 ⁸		9.2.5 Assessment and Mitigation of Environmental Effects Under Section 4 – ‘Describe the significance of the residual environmental effects that will likely occur as a result of the project, having taken into account the implementation of the proposed mitigation measures,’ Environment Canada recommends that the identification of the potential interactions between the project activities and the existing environment should also address significant effects that may result from a combination of effects that individually are not judged to be significant.	Potential effect on VECs that may be exposed to more than one stressor will be taken into consideration in this assessment No changes to the EA Guidelines required.

FEDERAL AUTHORITIES - DISPOSITION TABLE – COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	Response
EC-11 ⁸		We recommend that the EA report explicitly consider the effect of thermal plumes in terms of water quality (e.g. compliance with federal and provincial water quality guidelines and objectives) as well as in terms of aquatic biota and habitat.	Section 9.2.2 “ <i>Project Description</i> ” of the EA Guidelines, subheading “ <i>General Information, Design Characteristics and Normal Operations</i> ”, bullet 11, requires that information and reads as follows: ... <i>the sources, quantities and points of release from the project of routine radiological and non-radiological emissions and effluents, including thermal (heat) releases;</i> ”. No changes to the EA Guidelines required.
EC-12 ⁸		9.2.10 Follow-up Program Environment Canada suggests that the preliminary design and implementation plan for the follow-up program identify which EA predictions are going to be verified for accuracy and identify how the effectiveness of measures taken to mitigate the adverse environmental effects of the project will be determined. We also recommend that the EASR identify which expert departments and agencies will likely be requested to be involved in the review of the design and implementation of the follow-up plan and its outcomes.	Staff agrees with the statement that the preliminary design and implementation plan for the follow-up program identify which EA predictions are going to be verified for accuracy. Staff further notes that, if an amendment to the Pickering B NGS operating licence is granted to OPG under the NSCA, the CNSC licensing and compliance program will be used as the mechanism for ensuring the final design and implementation of any follow-up program and the reporting of program results. Requirement for expert departments and agencies input or assistance in the development and implementation of the follow-up program would be determined at that time. No changes to the EA Guidelines required.
EC-13 ⁸		<u>Project Description for the Pickering B Refurbishment for Continued Operation Environmental Assessment</u> 3.3 Generation of Toxic and Hazardous Materials This section states that Ozone Depleting Substances (ODS) such as Freon-11, -12 and -22 are used during routine operation at PNGS B and that Freon use is monitored to ensure it complies with the federal and provincial ODS regulations. However, there is no mention of the Federal Halocarbon Regulation (FHR). The FHR 2003 applies to refrigeration and A/C systems, fire extinguishing systems and solvent systems, containing halocarbons, owned by the “federal house” which includes nuclear facilities or facilities located on federal or aboriginal land.	Noted. OPG is instructed to provide information regarding the application of <i>Federal Halocarbon Regulations</i> as it applies to its operations. No changes to the EA Guidelines required.
EC-14 ⁸		The Pickering B Nuclear Generating Station EASR should address whether the management of Freon -11, -12 and -22 and the refrigeration and A/C systems, fire extinguishing systems and solvent systems containing these	Noted. OPG is instructed to provide information regarding the application and compliance with the <i>Ozone Depleting Substances Regulations</i> as it applies to its operations.

FEDERAL AUTHORITIES - DISPOSITION TABLE – COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	Response
		<p>halocarbons will comply with the requirements under the ODSR 1998 and FHR 2003.</p>	<p>No changes to the EA Guidelines required.</p>
OMOE ⁹	<p>ONTARIO MINISTRY OF THE ENVIRONMENT</p>	<p>The ministry has reviewed the project description for the proposal by OPG and would like to confirm that Ontario’s <i>Environmental Assessment Act</i> does not apply to nuclear facilities.</p> <p>There may be other approvals or permits under Ontario’s <i>Environmental Protection Act</i> and/or the <i>Ontario Water Resources Act</i> administered by the ministry which may apply to this proposal. You may wish to speak to the District Manager, York-Durham District Office of the ministry who may be able to assist you in determining if any approvals or permits will be required. You may also wish to speak to the Ministry of Natural Resources (MNR) about any approvals or permits they may require.</p> <p>We have reviewed the Draft EA Guidelines, and at this time we have no comments.</p>	<p>CNSC staff notes confirmation that Ontario’s <i>Environmental Assessment Act</i> does not apply to this project.</p> <p>Staff has provided the OMOE District Manager with an opportunity to comment on the draft EA Guidelines as has an official from the Ministry of Natural Resources in Peterborough.</p> <p>OMOE and Emergency Management Ontario are likely to have an interest in participating in the technical review of the federal EA for this project. OMOE regulates the discharge of non-radioactive substances through Certificates of Approval. Liquid effluent releases under the Municipal Industrial Strategy for Abatement (MISA). Lake Ontario water use is governed through a Permit to Take Water.</p> <p>OPG also holds a Municipal Certificate of Approval with respect to operation of PNGS B. Municipal codes and standards are observed, as applicable.</p> <p>No changes to the EA Guidelines required.</p>
DFO ¹⁰	<p>FISHERIES AND OCEANS CANADA</p>	<p>As an expert of federal authority, pursuant to subsection 12(3) of the <i>Canadian Environmental Assessment Act</i> DFO limited its review to impacts on fish and fish habitat.</p> <p>Please ensure that in addition to the effects of discharges on the Aquatic Environment identified in the Project-Environmental Interaction table (Table 5.1) that the Environmental Assessment Study Report (EASR) characterizes the environmental effects associated with the nuclear generating station’s water intakes. This should include, but not be limited to:</p> <ol style="list-style-type: none"> 1. An analysis of fish attraction, impingement, entrainment and mortality rates for all lifestages. 2. Ontario Power Generation should identify in the EASR technically and economically feasible mitigation measures to address the effects 	<p>Noted. The information has been passed on to the proponent, Ontario Power Generation (OPG).</p>

FEDERAL AUTHORITIES - DISPOSITION TABLE – COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	Response
		<p>of fish attraction, impingement, entrainment and mortality.</p> <p>3. The spatial boundary for the Aquatic Environment in the EASR’s Cumulative Effects Assessment should be such that it captures the cumulative effects of the Darlington cumulative effects on the Aquatic Environment of the Pickering B NGS’s operation, following mitigation, with those of the Darlington NGS, and discuss additional mitigation if necessary.</p> <p>4. The follow-up monitoring program should determine if the environmental and cumulative environmental effects of the project on fish and fish habitat are as predicted, with the implementation of technically and economically feasible mitigation measures.</p> <p>Please note that this advice is provided to satisfy the requirements of subsection 12(3) of the <i>Canadian Environmental Assessment Act</i> and should not be taken to imply approval in accordance with the habitat protection provisions of the <i>Fisheries Act</i> or any other federal or provincial legislation.</p>	<p>No changes to the EA Guidelines required.</p>

¹ Letter, R. Speller to C. David, “CEAA Determination and Notification of a Proposed by Ontario Power Generation to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, Pickering, Ontario, and Request for Comments on Draft EA Guidelines”, September 14, 2006, BITS #1377507.

² Email, S. Homer to C. David, “FCR Response: Pickering B Nuclear GS, Pickering ON”, October 2, 2006, BITS #1382681.

³ Email, S. Homer to C. David, “FCR Response: Pickering B Nuclear GS, Pickering ON”, October 12, 2006, BITS #1383255.

⁴ Letter, M. Turpin to C. David, “Power Generation to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, Pickering, Ontario”, September 13, 2006, BITS #1348504.

⁵ Email, L. Knowles to C. David, “Pickering B Nuclear Generating Station”, October 2, 2006, BITS #1382680

⁶ Email, K. Ma to C. David, “RE: CEAA Pickering B Refurbishment – HC Comments on Draft EA Guidelines”, October 11, 2006, BITS #1371794.

⁷ Letter, K. Dormuth to C. David, “CEAA Determination and Notification of a Proposal by Ontario Power Generation (OPG) to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, Pickering, Ontario, and Request for Comments on Draft EA Guidelines”, October 13, 2006, BITS #1348994.

⁸ Letter, L. Sealock to C. David, “CEAA Determination and Notification of a Proposal by Ontario Power Generation (OPG) to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, Pickering, Ontario, and Request for Comments on Draft EA Guidelines”, October 2, 2006, BITS #1348901.

⁹ Letter, A. Dominski to C. David, “Response to Regarding Notice of Environmental Assessment Required for the Proposal by OPG to Refurbish Units 5, 6, 7 and 8 at the Pickering B Nuclear Generating Station”, October 20, 2006, BITS #1372268.

¹⁰ Letter, L. Matos to C. David, “Response to RA to subsection 12(3) CEAA request for project review for expert or specialist information/knowledge”, October 18, 2006, BITS #1377985.

APPENDIX C

List of Stakeholders Solicited to Comment on the Draft EA Guidelines

Appendix C

Distribution Libraries

Scugog Public Library

Mr. Ian Ross
Whitby Public Library

Ms. Cynthia Mearns
Pickering Public Library

Mr. Geoff Nie
Ajax Public Library

Mr. Ian Heckford
Oshawa Public Library

Mr. Alex Hartmann
Uxbridge Library

Ms. Joan brownness
Brock Library

Provincial Authorities

Dr. Sheela Basrur
Chief Medical Officer of Health
Ontario Ministry of the Environment

Mr. Cameron Mack
Director, Fish & Wildlife Branch
Ministry of Natural Resources

Mr. Cedric Jobe
Director
Supply Mix Branch
Ministry of Energy

Mr. Peter Balaban
District Manager, York-Durham
District Office
Ontario Ministry of the Environment

DISTRIBUTION - STAKEHOLDERS

Mr. Mark Holland MP – Ajax-Pickering	The Honourable Dan McTeague MP – Pickering-Scarborough East
Mr. Derek Lee MP – Scarborough-Rouge River	The Honourable Jim Flaherty MP – Whitby-Oshawa
Mr. Wayne Arthurs MPP – Pickering-Ajax-Uxbridge	The Honourable Mary Ann Chambers MPP – Scarborough East
Ms. Christine Elliott MPP – Whitby-Ajax	Mayor Dave Ryan Mayor of Pickering
Mayor Steve Parish Mayor of Ajax	Mayor Marcel Brunelle Mayor of Whitby
Mayor Gerri Lynn O'Connor Mayor of Uxbridge	Mr. Paul Ainslie City Councillor – Ward 41 Scarborough-Rouge River
Ms. Gay Cowbourne City Councillor – Ward 44 Scarborough East	Mr. Raymond Cho City Councillor – Ward 42 Scarborough-Rouge River
Mr. Roger Anderson Regional Chair Region of Durham	Dr. Robert Kyle Commissioner and Medical Officer of Health Durham Region Health Department
Ms. Norma Drummond Public Members – Ajax Durham Nuclear Health Committee	Mr. Alexander J. Heydon Public Members – Ajax Durham Nuclear Health Committee
Dr. Barry C. Neil Public Members – Ajax Durham Nuclear Health Committee	Dr. Gerald Gold Public Members – Pickering Durham Nuclear Health Committee
Dr. Youssef Mroueh Public Members – Pickering Durham Nuclear Health Committee	Mr. Gord Perks Toronto Environmental Alliance
Mr. Ken Gorman Director, Environmental Health Division Durham Region Health Department	Ms. Mary-Anne Pietrusiak Epidemiologist Durham Region Health Department
Mr. Brian Devitt Secretary Durham Nuclear Health Committee	Director Durham Catholic District School Board
Mr. David Steele Pickering Ajax Citizen's Together (PACT)	Ole Hendrickson Concerned Citizens of Renfrew County

Director Durham District School Board	Mr. Don Mackinnon President Power Workers' Union
Mr. Paul Kelland Vice Principal Pickering East Shore Community Association	Club President Pickering Field Naturalists
Save the Rouge Valley System (SRVS)	Chief Jim Bob Marsden Alderville Ojibwas First Nations
Chief Brett Mooney Chippewas of Georgina Island First Nations	Chief Keith Knott Curve Lake First Nations
Metis Nation of Ontario	Chief Gregory Cowie Hiawatha First Nations
Chief Tracey Gauthier Mississaugas of Scugog Island First Nation	Chief Kris Nahrgang Kawartha Nishnawbe First Nation
Mr. Michael McGuire President Ontario Metis Aboriginal Association	Mr. Tony Belcourt President Metis Nation of Ontario
Mr. Ken Ogilvie Executive Director Pollution Probe	Mr. Robert Mitchell Board of Directors Sierra Legal Defence Fund
Mr. Kyle Ferguson Office Coordinator Sierra Club of Eastern Canada	The Society of Energy Professionals
Ms. Linda Robinson President West Rouge Community Association	B.J Skinner CAO Durham Nuclear Health Committee
Ms. Angela Rickman Senior Policy Advisor – Health and Environment Sierra Club of Canada	Ontario Chapter Sierra Club of Canada
Ms. Katie Albright Communication Coordinator Sierra Club Canada	Ms. Susan Paul National Operations Director Sierra Club of Canada
Mr. Jack Gibbons Chair Ontario Clean Air Alliance	Mr. Jonathan Guss CEO Ontario Medical Association

F. Wu CAO Durham Nuclear Health Committee	T. Quinn General Manager Durham Nuclear Health Committee
R.A Claringold Administrator Durham Nuclear Health Committee	A.J Grant CAO Durham Nuclear Health Committee
Mr. Brenda Griffiths President Altona West Community Association	Mr. Paul White Fairport Beach Neighbourhood Association
Ms. Michelle Pongrazz Frenchman's Bay Environmental Watch Committee Frenchman's Bay Rehabilitation Project	Ms. Gail Clow Liverpool West Community Association
Ms. Tracy Paterson President Ajax Pickering Board of Trade	Mr. Adam White President Association of Major Power Consumers in Ontario
Association of Power Producers of Ontario	Canadian Coalition for Nuclear Responsibility
Ms. Michelle Swenarchuk Executive Director Canadian Environmental Law Association	Ms. Anne Mitchell Executive Director Canadian Institute for Environmental Law and Policy
Mr. Murray Elston Canadian Nuclear Association	D. Shier Canadian Nuclear Workers Council
S. Kleinau Coordinator Citizens for Renewable Energy	Mr. Mark Susan Clean Affordable Energy Alliance (CAE)
Mr. Tim Rendell CEO David Suzuki Foundation	Durham Nuclear Awareness
Mr. Doug Lindeblom Durham Strategic Energy Alliance	Ms. Brigitte Dignard Manager Energy Council of Canada
Mr. Norman Rubin Director, Nuclear Research Energy Probe	Dr. Rick Smith Executive Director Environmental Defence Canada

Mr. Derek Stack Executive Director Great Lakes United	Mr. John Doherty Chair Greenpeace
Ms. Glenna Carr Chair & CEO Independent Electricity System Operator (IESO)	Ms. Karen Vigmostad Great Lakes Regional Office International Joint Commission
Mr. Mark Mattson Lake Ontario Water Keepers	Ms. Brennain Lloyd Northwatch
Mr. Robert Nornung Pembina Institute	

APPENDIX D

Dispositioning of Comments from Stakeholders
Refurbishment and Continues Operation of Pickering B
Nuclear Generating Station Draft EA Guidelines

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
CFRE – 1	Citizens For Renewable Energy (CFRE) ¹	We find that a project of this magnitude is not sufficiently served by a Screening EA and demand that it be bumped up at least to a Comprehensive type EA.	<p>The level of assessment is established by the <i>Canadian Environmental Assessment Act</i> (CEAA) and its Regulations. OPG’s proposal is not included on the Comprehensive Study List Regulations; therefore the proposal is subject to a screening-level environmental assessment in accordance with the CEAA.</p> <p>No changes to the EA Guidelines required.</p>
CFRE – 2		There is a definite urgency to investigate the need in light of a host of clean and safe alternatives to conventional energy generation. Costs must be investigated as already OPG’s Board of Directors has found the refurbishment of # 2 and # 3 reactors too expensive an investment.	<p>As noted in section 9.2.1 of the EA Guidelines, the question of producing electricity using alternative means is a broader policy matter outside of the mandate of the CNSC. These choices are energy policy decisions made by provincial jurisdictions and are outside the scope of a project specific EA. In addition, financial aspects (other than financial guarantees) are outside the CNSC’s legislated mandate provided under the NSCA.</p> <p>No changes to the EA Guidelines required.</p>
CFRE – 3		The local study area has to include all of Metro Toronto because of the proximity to the nuclear plant. Effects on Lake Ontario and on the near-shore residents on both sides of the border must be investigated.	<p>Section 9.2.3 of the draft EA Guidelines specifies that geographic study areas identified for this project encompass the areas of the environment that can reasonably be expected to be affected, or which may be relevant to the assessment of cumulative environmental effects. The proponent is instructed though the EA Guidelines to broaden the study areas to include unexpected wider-spread effects arising from the project, leaving flexibility to expand study area boundaries, as required, should studies show likely effect beyond a particular boundary. The study areas and time frames identified will remain flexible to allow the full extent of the likely environmental effects of the proposal to be considered in the screening.</p> <p>No changes to the EA Guidelines required.</p>
CFRE – 4		The Nuclear Liability Act (NLA) has to be looked at with its outdated coverage for radiation connected accidents.	<p>As previously stated, the guidelines require consideration of malfunctions and accidents that have a reasonable possibility of occurring during the life of the project. The guidelines also require that the assessment contain a description of any contingency, clean-up or restoration work in the surrounding environment that would be required during, or immediately following, the postulated malfunction, accident and criticality events.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			No changes to the EA Guidelines required.
CFRE – 5		Security, especially restricted water access, must be included.	<p>Section 9.2.2 of the EA Guidelines requires that information of a general nature be included in the EA Study Report, as to systems and facilities for maintaining the security of the station, with the exception of Prescribed Information. Prescribed Information under the <i>Canadian Nuclear Safety and Control Regulations</i> is defined as information which contains security arrangements, equipment, systems and procedures established by a licence in accordance with the NSCA. Disclosure of such information is prohibited. Accordingly, the description of security systems will be limited and of general nature.</p> <p>The CNSC has a clear regulatory framework in place for physical protection of the facility and nuclear materials that the licensee is required to implement. Assurance is obtained by verification of compliance and assessment of response measures.</p> <p>No changes to the EA Guidelines required.</p>
LOW1-1	LAKE ONTARIO WATERKEEPER (1 ST LETTER) ²	<p>As the project requires amendments to waste management licences on the Pickering site, we would like copies of the existing licences for those facilities as follows:</p> <ul style="list-style-type: none"> • Pickering WMF: WFOL-W4-350.02/2008. • Nuclear Power Operating Licence: PROL 08.10/2008 • Western Waste Management Facility licence: WFOL-W4-314.05/2007 	<p>Staff has provided copies of the Pickering B power reactor operating licence and of the waste management operating licences for the Pickering Waste Management Facility and the Western Waste Management Facility.</p> <p>CNSC staff has also provided Environmental Assessment Study Report (with supporting technical documents) as well as a copy of the draft EA Screening report prepared by CNSC staff.³</p> <p>No changes to the EA Guidelines required.</p>
LOW1-2		We also request that you send along with the CNSC licences for all of the above, any documents listed in an appendix to the licences containing any conditions incorporated by the licence, for example operating manuals.	<p>These above-noted licenses reference a considerable number of supporting documents. CNSC staff suggests that the requester examine the licenses so as to narrow its request for documents which you deem will be of most assistance to you.³</p> <p>No changes to the EA Guidelines required.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
LOW1-3		The Project Description also mentions approvals for two additional dry storage buildings, and we would like copies of these approvals along with any conditions.	Staff has provided this information. No changes to the EA Guidelines required.
LOW1-4		We would also like a copy of the following background information about the Pickering and Western WMFs. <ol style="list-style-type: none"> 1. OPG (2005) Western Waste Management Facility Refurbishment Waste Storage Project Environmental Assessment Study report. 2. OPG (2003b) Pickering Waste Management Facility Phase II Final Environmental Assessment Study Report. 3. OPG (2000b) Pickering Waste Management Facility Phase I Final Environmental Assessment Study Report. 	Staff has provided: <ol style="list-style-type: none"> 1. OPG (2005) Western Waste Management Facility Refurbishment Waste Storage Project Environmental Assessment Study report; 2. Pickering Waste Management Facility Phase II, Final Environmental Assessment Study Report, Maim Report, prepared by OPG, December 2003, supporting technical documents (CD format).⁴ 3. Pickering Used Fuel Dry Storage Facility – Stage II, Screening Environmental Assessment prepared by Ontario Hydro, September 1998, the Pickering Used Fuel Dry Storage Facility – Stage II Screening Report prepared by AECB staff dated May 1999 and a copy of the Federal Environmental Assessment Index notice posted on the Canadian Environmental Assessment Agency website. No changes to the EA Guidelines required.
LOW1-5		The draft scope (3.0) says that the project is not covered by the CEAA’s Comprehensive Study Regulations (CSL regulations). An explanation or elaboration of why the facility might not be captured by s.19 and s.32 of the CSL regulations would be helpful. In particular with regard to part 3 of the Draft Scope.	Both sections 19 and 32 of the CSL regulations only apply to the undertakings identified in these provisions, namely, <i>the proposed construction, decommissioning or abandonment, or an expansion that would result in an increase in production capacity of more than 35 per cent.</i> OPG application involves a “refurbishment” without change to the rated production capacity of the units and so these provisions do not apply in respect of this application. No changes to the EA Guidelines required.
LOW1-6		What is the estimated Bq of the waste that will be generated and stored in the WMF as a result of refurbishment?	Estimates of the type and characteristics of radioactive waste is part of the information that the EA will be required to determine. The following statement will be added in section 9.2.2 under the heading <i>General Information, Design Characteristics and Normal Operations</i> of the EA Guidelines for this project: “ <i>the estimated activity in Bq of the waste that will be generated and stored at each of the</i>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
LOW1-7		(9.2.1) of the draft scope notes that the consideration of alternatives is outside the scope of the CNSC under the NSCA but makes no mention of the legislated requirements of the CNSC under the CEAA. Does this section propose to exclude the consideration of alternatives altogether? Clarification would be helpful.	<p><i>WMAs as a result of refurbishment.”</i></p> <p>The CNSC is required to consider applications and project descriptions as they are put forward by a proponent. The NSCA confers powers to the CNSC in areas that include protection of health and the environment, and security and safety aspects.</p> <p>This being said, consideration of “<i>alternatives to the project</i>” such as conservation or the use of renewable resources to meet energy needs lie outside the legislative mandate of the CNSC. These choices are energy policy decisions made by provincial jurisdictions and clearly lie within these jurisdictions. (Also see CFRE-2 for more information.)</p> <p>Consideration of “<i>alternative means of carrying out the project</i>” such as site selection is not considered warranted in this case due the nature of the proposal which involves the refurbishment of an existing facility.</p> <p>No changes to the EA Guidelines required.</p>
LOW2-1	LAKE ONTARIO WATERKEEPER (2ND LETTER) ⁵	<p>Summary LOW recommends that the Draft Scope be amended in the following ways:</p> <ol style="list-style-type: none"> 1. The EA should be referred to a Review Panel; 2. Alternatives to the project and the need for the project should be included; 3. Broader spatial and temporal boundaries should be included; 4. Cumulative effects of all aspects of the project should be included. <p>Grounds</p> <ol style="list-style-type: none"> A. The project is too significant and too important to be assessed without the oversight of a review panel. B. The failure to include alternatives and need purely on the grounds of jurisdiction is an error of law. C. A complete overview of cumulative effects and temporal and spatial effects is necessary to ensure that appropriate mitigation measures are taken. <p>Submission</p> <ol style="list-style-type: none"> A. The project is too significant and too important to be assessed without the oversight of a review panel. <p>Pickering B rests on the shores of Lake Ontario. Six million people get their</p>	<ol style="list-style-type: none"> 1. At this stage of the EA, CNSC staff does not consider that a recommendation for referral to mediation or panel review is warranted or has been justified on the basis of potential environmental effects or identified public concerns. The screening EA process will be thorough, including a thorough assessment of the effects of malfunctions and accidents and involve wide and meaningful consultation with interested parties. <p>The Commission retains the ability to request the project be referred to a review panel at any time during the Screening EA should the information on the effects and nature of public concern warrant. CNSC staff will be monitoring the process.</p> <p>OPG recently completed a round of four Open Houses in the local area. While Open Houses were attended by CNSC staff, they did not identify a “high degree of</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		<p>drinking water from Lake Ontario. The stakes involved in the continued operation of the Pickering B facility cannot be overstated. Extensive operational, safety and technical deficiencies have been identified at the Pickering facility over the last decade. From 1983-1997 several serious accidents occurred at Pickering A culminating in a damning Integrated Independent Performance Assessment and shutdown in 1997. In 2001 a CNSC official told the Senate Standing Committee on Energy, Environment and Natural Resources that it was not satisfied with the operation of Ontario's nuclear power plants.</p> <p>The Senate Committee recommended in 2001 that comprehensive studies be conducted for any future refurbishment and start-up operation at a nuclear power plant. Further, the Senate Committee criticized the CNSC and OPG for being unsupportive of referral to a panel review in the case of the Pickering A refurbishment. In its review of the Pickering A refurbishment and startup, the Senate committee noted several features of the process that were deficient. These deficiencies included narrow scoping, exclusion of nuclear accidents and comment periods of only 30 days.</p> <p>LOW respectfully submits that the CNSC can do better. The proposed draft scope repeats many of the mistakes of the past and fails to address many of the recommendations of the Senate Committee in 2001.</p> <p>Consideration by a review panel would go to great lengths to ensure that the scope, content, and completeness of the environmental assessment for the Pickering B project are properly conducted and comprised of the best available evidence. Conducting a panel review would allow interested interveners to conduct their own, fully independent, expert assessments of the serious issues raised by the continued operation of Pickering B.</p> <p>Section 25 of CEAA permits the CNSC to refer the EA to the Minister for a panel review on the basis of public concern. Public concern is demonstrated by not only the number of people who raise their voices in the assessment process, but by the interests at stake. In making the determination about a review panel, the CNSC has an obligation to be open and transparent about the way in which it exercises its discretion. Merely claiming that the CNSC is not aware of any public concern at this time is an inadequate explanation for why Ontarians deserve less than the best process available under CEAA.</p> <p>Accidents at Pickering B could affect millions of people. The risk of a serious core accident in a nuclear reactor in Ontario has never been adequately</p>	<p>public concern". (Bits 1374795 and Bits 1374404) The EA process is in full compliance with CEAA requirements and provides for public consultation steps that are additional to CEAA requirements.</p> <p>No specific changes to the Guidelines are proposed as a result of this comment.</p> <p>2. See response to CFRE-2 and LOW1-7. The screening report will include a clear statement of the purpose of the project. In this case, the purpose of restarting the Pickering B is to provide additional capability to generate electrical power for sale to consumers of electricity. Issues related to that purpose, such as the need for OPG to generate the electricity, the alternatives to generating the electricity, and the alternative methods of generating the electricity, are not factors that must be considered in the screening of a specific project. The purpose of the screening is to determine if the proposed refurbishment and restart of the existing Pickering B reactors is likely to cause significant environmental effects. Responding to the question of the need for the electricity to be generated would involve consideration of broader public policy issues over which CNSC has no regulatory authority, and other political and economic processes exist to address this matter. It is also not a mandatory requirement that an assessment under the CEAA address the issue of the need for the project. Similarly, the separate questions of alternatives to generating that electricity, or alternative methods of generating that electricity, are matters beyond the mandate and control of the CNSC and are not required to be assessed in a project specific assessment under the CEAA.</p> <p>3. See response to CFRE-3.</p> <p>4. All the requirements of a cumulative effects assessment, in accordance with the requirements of subsection 16(1) of the CEAA, will be included in the EA.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		<p>assessed in an environmental assessment. Risk assessments are about more than quantifying the risk of an accident. Such a determination warrants full disclosure to the public, and an opportunity for the public to test evidence to ensure that it is accurate and complete. More than this, an adequate risk assessment requires meaningful and transparent determination of what is acceptable, a task best suited to a level of public involvement that is not possible in a screening report alone.</p> <p>Assessment of the impacts of nuclear undertakings through an independent panel will improve understanding of the project. Leaving the assessment to officials of CNSC, governments, and nuclear utility companies is wrong.</p> <p>The most recent experience with an independent panel review of a nuclear undertaking -the so-called "Seaborn Panel" review showed that such panel reviews have the potential to make rather large steps away from nuclear establishment's approach and toward the kind of wisdom that we must develop to deal properly with nuclear materials. A federal review panel would bring the assessment of Pickering B up to the basic provincial standards of assessment for major public projects. Ontarians deserve no less than the best available process.</p> <p>A review panel for the Pickering B refurbishment is necessary because the level of public concern about nuclear expansion in Ontario warrants one. A review panel for the Pickering B refurbishment is necessary because without it, this major step in creating a nuclear power system that Ontarians will rely on for decades will be pursued without meaningful public participation.</p> <p style="text-align: center;">B. B. The failure to include alternatives and need purely on the grounds of jurisdiction is an error of law.</p> <p>The role that jurisdiction plays in the scoping of CEAA assessments is well settled by the courts. A responsible authority cannot decline to exercise its discretion regarding the scope of an assessment under s.16(1) by claiming that aspects of the assessment would be outside its jurisdiction. Accordingly the Draft Scope, which omits consideration of alternatives and need on this basis, commits a reversible error of law.</p> <p>The costs of refurbishing Pickering B are too great to consider in isolation from the benefits and accordingly the need for the project must be considered in this assessment. OPG is conducting a feasibility study outside of the EA process. The feasibility study must be made public and integrated into the EA process. Consideration of the interm findings of the Ontario Integrated</p>	<p>No changes to the EA Guidelines required.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		<p>Power System Plan are fundamental to the cost/benefit analysis undertaken by the CNSC in the CEAA process. Without this information, how can the CNSC determine whether Pickering B refurbishment is "justified in the circumstances"?</p> <p>The scope of the EA for Pickering B refurbishment must include a complete consideration of alternatives, including decommissioning Pickering B, and alternative short-term and long-term waste disposal options. Pickering B is over two decades old, and there have been numerous reported problems including but not limited to emergency shutdown problems (manual shutdown required) during the 2002 blackout, failed toxicity tests, as well as the managerial and technical problems identified in the 1997 Integrated Independent Performance Assessment.</p> <p>C. A complete overview of cumulative effects and temporal and spatial effects is necessary to ensure that appropriate mitigation measures are taken</p> <p><u>Cumulative Effects</u> The operation of Pickering B after its refurbishment presents the potential for many complex environmental impacts. LOW is extremely concerned about the ongoing operation of the reactor and waste sites and the potential for continued pollution of Lake Ontario. LOW respectfully submits that the contamination of Lake Ontario with radioactive substances contributes to the overall degradation of drinking water and fish habitat for millions of people. The Pickering facilities have a long history of discharging toxic substances into Lake Ontario and local groundwater, particularly tritium, which as been found in the drinking water of Burlington and Belleville. Measurements of Tritium along the Lakeshore in front of Pickering have been as much as 40% higher than in the Lake as a whole. The Draft Scope indicates that "specific projects and activities" will be identified at some later stage for consideration of cumulative effects. LOW notes that all aspects of the project, including post-refurbishment operation of Pickering B and the risk of serious accidents must be included in the cumulative effects analysis.</p> <p><u>Spatial and Temporal Scope</u> The regional study area proposed in the Draft Scope fails to reflect the actual impact area of the Pickering B refurbishment project. First; although the scope of the assessment claims to include the transportation of waste to the Western Waste Management Facility ("WWMF"), transportation corridors to and from WWMF are not included in the study area. Second, the regional study area fails to include areas impacted by drinking water contamination</p>	

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		<p>west of the facility. Third, the regional study area clearly fails to reflect the area that would be impacted by a serious accident. The spatial scope of the assessment is far too limited to provide a reasonable assessment of the environmental impacts of the refurbishment of Pickering B.</p> <p>The temporal scope is limited to the expected operation of the facility and fails to reflect the length of time that the spent fuel rods and low-level refurbishment waste will have to be stored. LOW notes that the Bruce Deep geologic repository environmental assessment is not yet complete and has not been licensed and therefore cannot be taken for granted as being 'taken care of' in the scope of this assessment.</p> <p>Conclusion LOW would like to thank the CNSC for the opportunity to comment on the Draft Scope. Without a screening report reflecting the true scope of the project and its cumulative effects, important mitigation measures may fall through the cracks, and important adverse effects on the environment of millions of people may be overlooked. A panel review will ensure that the scope of the review is appropriate and complete and is the best available way to ensure that the shift in Ontario's energy policy implemented by the Pickering B refurbishment is given the thorough and independent analysis that Ontarians deserve.</p> <p>Accordingly LOW respectfully submits that the Draft Scope be amended in the following ways:</p> <ol style="list-style-type: none"> 1. The EA should be referred to a review panel 2. Alternatives to the project and the need for the project should be included 3. Broader spatial and temporal boundaries should be included 4. Cumulative effects of all aspects of the project should be included 	
TOA-1	TOWN OF AJAX ⁶	<p>The Draft Environmental Assessment Guidelines, as prepared by the Canadian Nuclear Safety Commission, appear to be sufficiently broad in scope to consider the issues that are of a concern to the Town. These issues include, but are not necessarily limited to the following:</p> <ol style="list-style-type: none"> 1. the implications of storing additional nuclear waste on site that is produced from the subject reactors beyond 2015 (which is the anticipated current life of the reactors) to the year 2060; 2. the implications of transporting the additional nuclear waste to a permanent storage facility on the surrounding community; and 3. the possible impacts of the warm water discharge from the Generating Station into Lake Ontario and its affects on algae growth resulting in potential impacts on the Town's Rotary Park beach. 	<p>Noted.</p> <p>No changes to the EA Guidelines required.</p>

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Number	Name and Organization	Summary of Comment	CNSC Response
TOA-2		As a waterfront community, the Town needs assurance that the continued operation of the Pickering B Nuclear Generating Station and the resulting warm water discharge into Lake Ontario will not contribute toward additional algae growth. This issue is also being addressed with the Region of Durham through their proposal to expand the capacity of the adjacent waste water treatment facility.	<p>The draft EA Guidelines specify that the effects of the project on the water quality and aquatic life in Lake Ontario will be included. The Towns specific concern about algae is noted.</p> <p>No changes to the EA Guidelines required.</p>
GP1-1	GREENPEACE ⁷	As noted in a recent letter to CNSC president Linda Keen ⁸ , Greenpeace Canada is deeply concerned that the CNSC is not exercising proper procedure and rigour in overseeing the environmental assessment requirements for the proposed life extension of Pickering B nuclear station.	<p>CNSC is applying the CEAA rigorously and is going beyond what is required for a screening EA. Also see GP2-21 for a response regarding consultation process.</p> <p>No changes to the EA Guidelines required.</p>
GP1-2		Specifically, Greenpeace is deeply concerned by the lack of detail and notable errors contained in the OPG's project description as accepted by the CNSC and by the seeming readiness of the CNSC to override its own procedures to fast track the approval of OPG's environmental assessment guidelines in order to meet the business planning of OPG.	<p>The project description was sufficient for the purpose of determining the application of CEAA to the project and for initiating the required Federal Coordination. As noted in the draft EA Guidelines, more specific details of the project components and their potential to interact with the environment will be required in the early stages of the assessment. If the project proceeds to licensing under the NSCA, further extensive detailed design information in support of an Integrated Safety Review will be required.</p> <p>The Commission is going beyond its normal procedure by holding a one-day public hearing on the EA Guidelines. The Commission's normal process is to not hold public hearings on the EA Guidelines and to only hold public hearings on Screening Reports where it deems it in the public interest to do so.</p> <p>No changes to the EA Guidelines required.</p>
GP1-3		Greenpeace intends to make both a formal written submission and an oral presentation at the hearing for these guidelines.	No changes to the EA Guidelines required.
GP1-4		<p>1. CNSC OVERSIGHT OF LIFE-EXTENSION</p> <p>After closely observing the CNSC's handling of the life-extension of the Point Lepreau, Gentilly-2 and Bruce nuclear stations, it is apparent to Greenpeace Canada that the CNSC has a pattern of behaviour that prioritizes aiding nuclear industry licensees lower their "regulatory risk" over proper and transparent regulation in the public interest. To this effect, Greenpeace filed a complaint with the Auditor General of Canada in June regarding the CNSC's failure to pro-actively acknowledge the lack of federal regulations and policies governing the life-extension of nuclear reactors in Canada.</p>	No changes to the EA Guidelines required.

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
GP1-5		The day before the CNSC was to hold hearings for the licence renewal and refurbishment of the Point Lepreau Nuclear Station, the CNSC published for consultation the Draft Regulatory Guide on the Life Extension of Nuclear Reactors. It goes without saying that the process of regulatory requirements for the life-extension of Point Lepreau had already been predetermined.	No changes to the EA Guidelines required.
GP1-6		Indeed, it must be noted that Ian Grant, Director General of Power Reactor Regulation, admitted that the content of this guide was a fait accompli during the hearings on the relicensing of Point Lepreau on May 18 2006, stating: “Realize that staff’s commitment, it is a guide that articulates and formalizes, codifies the practices that have been followed up to this point.” Mr. Grant also stated these practices are a “...result of the public hearing process.”	No changes to the EA Guidelines required.
GP1-7		The licensing process is not an appropriate forum for developing a broader policy framework or consulting on broader policy or regulatory requirements. Indeed, when Greenpeace has raised the role bad precedents have played in determining regulatory policy at the CNSC, the Commission has refused to acknowledge the issue.	No changes to the EA Guidelines required.
GP1-8		Greenpeace Canada therefore does not accept the legitimacy of Draft Regulator Guide on the Life Extension of Nuclear Reactors. Here, I will cite the submission Greenpeace Canada made on the guide: “Because regulatory Guide 360 is based on unaccountable decisions of CNSC staff and nontransparent decisions made by the Commission through the licensing process, this guide precludes the possibility of any meaningful and substantive discussions on the CNSC administration of life-extension. Greenpeace Canada, therefore, refuses to accept the legitimacy Regulatory Guide 360.	No changes to the EA Guidelines required.
GP1-9		It should be noted that the Standing Senate Committee on Energy, the Environment and Natural Resources recommended in 2001: ... that the Comprehensive Study List Regulations of the CEAA be amended to include the restart of a nuclear power reactor following the prolonged shut down of the reactor or significant modification to the reactor and/or the station.	The CNSC determination that an environmental assessment screening is required is based on application of the current regulations in forced under the CEAA. See response to CFRE-1. No changes to the EA Guidelines required.
GP1-10		Greenpeace Canada agrees with the Committees recommendation that any “significant modification to the reactor and/or the station,” such as retubing for life-extension, should trigger a comprehensive review under the Canadian Environmental Assessment Act.	See response to GP1-9 above. No changes to the EA Guidelines required.

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
GP1-11		Again, Greenpeace Canada does not accept the legitimacy of draft regulatory guide G-360. It is obvious by the CNSC’s handling of the life-extension of Point Lepreau, Gentilly-2 and the Bruce nuclear station that the CNSC prioritizes aiding nuclear industry licensees lower their “regulatory risk” over proper and transparent regulation in the public interest.	No changes to the EA Guidelines required.
GP1-12		It is notable that the environmental assessment on the restart of Pickering A (a significant modification to the station) was conducted at a level equivalent to a comprehensive study. Greenpeace Canada believes that, at a minimum, the environmental assessment of the life-extension of Pickering B should be conducted at the level of a comprehensive review under the Canadian Environmental Assessment Act.	<p>The environmental assessment completed for the restart of Pickering A was a screening, in accordance with the <i>Canadian Environmental Assessment Act</i>, as registered on the Canadian Environmental Assessment Agency’s Federal Environmental Assessment Index under number 18822.</p> <p>Because a project is subject to a screening under the CEEA does not mean that the assessment of the effects will be less thorough. As with the Pickering A return to service EA referred to by the commenter, the EA for the refurbishment of Pickering B will involve a thorough examination of the potential environmental effects of that project.</p> <p>See response to CFRE-1.</p> <p>No changes to the EA Guidelines required.</p>
GP1-13		<p>2. CATASTROPHIC ACCIDENTS</p> <p>Just 30 km from downtown Toronto, Pickering is closer than any other nuclear reactor to a major population centre in the world. Unlike other stations, the Pickering nuclear station has a greater risk of accident because the containment and Emergency Core Cooling System are shared between all 8 reactors at the A and B stations. The four Pickering “A” reactors are the oldest commercial reactors in the country and because of their age are the only reactors in the western world with only one emergency shutdown system.</p> <p>Given the inherent danger of Pickering to Canada’s largest population centre, Greenpeace Canada believes that there must be an analysis of the potential environmental and human health effects of a catastrophic nuclear accident at the Pickering station.</p> <p>It should be noted that the above change must be made for the EA guidelines to respect section 16(1)(a) of the Canadian Environmental Assessment Act, which states that every screening, comprehensive study or panel review must include “...the environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur [emphasis added] in connection with the project...”.</p>	<p>Section 9.2.2 includes the requirement to provide information on project malfunctions and accidents. As stated in the Draft EA Guidelines, the malfunctions and accidents to be considered in the EA will be reviewed and must be accepted by CNSC staff. In addition, if the project proceeds to licensing, OPG’s proposal for the refurbishment and continues operation will be subjected to a thorough evaluation under the provisions of the Nuclear Safety and Control Act (NSCA) and its regulations, including a detailed safety review.</p> <p>No changes to EA Guidelines required.</p>

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Number	Name and Organization	Summary of Comment	CNSC Response
GP1-14		<p>2.1 SECURITY AND INCIDENTS CAUSED BY TERRORISM In the post September 11th world it is unacceptable that environmental impacts that may occur due to terrorism are not identified in the current EA guidelines. For example, a catastrophic accident precipitated by a terrorist attack would have serious consequences on the environment and communities, both near and far.</p>	<p>While accidents and malfunctions must be considered in the EA, Acts of terrorism and sabotage are not specifically required to be included in environmental assessments under the CEAA. After reviewing the current security requirements, including additional measures required by the CNSC to be put in place following events of September 11, 2001, CNSC staff concluded that security issues are being appropriately managed by the ongoing regulatory process and further, that they do not warrant special consideration in the environmental assessment.</p> <p>The proposed scope of project includes “facilities and systems for maintaining the security of the site (excluding prescribed information)”. Security is reviewed by the CNSC for all licensing decisions and the CNSC will not amend a licence unless it is satisfied that the applicant will make adequate provision for the maintenance of security.</p> <p>The specific details of security systems is prescribed information that may not be revealed in public documents.</p> <p>No changes to the EA Guidelines required.</p>
GP1-15		<ul style="list-style-type: none"> • Security measures – fencing, barriers, lighting etc - impact the environment and should be explicitly discussed in the assessment with recommended mitigation measures. Post September 11th, a number of new security requirements were initiated at all of Canada’s commercial nuclear reactors. Any environmental assessment on Pickering B’s life-extension project should also include a discussion of past trends toward increasing security precautions and protocols at the Pickering nuclear facility. It should also include a discussion of the environmental impact of these programs. 	<p>The CNSC required enhanced nuclear security provisions at major nuclear facilities of which Pickering Nuclear Generating Station was one. The CNSC also moved to a risk-based approach in assessing security at such facilities. Enhanced measures are now being replaced with cost effective long term measures to ensure the health, safety and national security requirements are maintained. Potential threats are constantly monitored in close collaboration with the Canadian Security Intelligence Service, the Royal Canadian Mounted Police, Public Safety and Emergency Preparedness Canada, licensees, international agencies and other regulators, especially the Nuclear Regulatory Commission of the United States. The CNSC conducts frequent inspections and audits to ensure compliance and to ensure that the requirements of the Nuclear Security Regulations.</p> <p>The specific details of security systems is prescribed information that may not be unveiled in public documents.</p> <p>No changes to the EA Guidelines required.</p>

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Number	Name and Organization	Summary of Comment	CNSC Response
GP1-16		<ul style="list-style-type: none"> • There should be a discussion of the likelihood and the severity of an airplane crash at the Pickering B facility. 	<p>Canadian nuclear power plants have been designed and built with layers of safety features to protect the health and safety of the public in accordance with an approach known as ‘defence in depth.’ The containment buildings are extremely resistant structures, designed to withstand extreme events such as earthquakes and tornadoes. However, nuclear power plants, like other public infrastructure, are not required to be designed to withstand this type of event.</p> <p>CANDU reactors are also designed with redundant safety systems, such as diverse and separate cooling systems, in order to ensure continuous cooling of the reactor in the event of an incident. Diverse and separate reactor shutdown systems are also in place, designed to respond quickly and effectively to a wide range of incidents that might damage the reactor. Finally, all reactor operators are certified by the CNSC; they are trained to shut down the reactors safely in emergency situations.</p> <p>As set out in section 9.2.5 1), the environmental effects of severe accidents and malfunctions, and the effectiveness of the above-noted design features to mitigate those effects, will be assessed as part of the EA.</p> <p>No changes to the EA Guidelines required.</p>
GP1-17		<ul style="list-style-type: none"> • There should be a discussion of the likelihood and severity of an act of sabotage at the Pickering B facility. 	<p>The CNSC requires that the licensee demonstrate that they are capable of preventing unauthorized access to their sites. The licensee is required to have security measures in place to deal with acts of sabotage in order to protect those who work at the facility and those who live in the vicinity and to ensure the security of the facility itself. Furthermore, the licensee must have measures to prevent the theft of nuclear materials and information.</p> <p>As set out in section 9.2.5 1), the environmental effects of severe accidents and malfunctions will be assessed as part of the EA.</p> <p>See responses to CFRE-5, GP1-14 and GP1-15.</p> <p>No changes to the EA Guidelines required.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
GP1-18		<p>3. EXPAND THE GEOGRAPHIC BOUNDARIES FOR THE SCOPE OF THE PROJECT In regard to geographic boundaries, the Regional Study Area should be expanded to include Toronto.</p>	<p>See response to CFRE-3.</p> <p>No changes to the EA Guidelines required.</p>
GP1-19		<p>4. EXTEND THE TEMPORAL BOUNDARIES FOR THE SCOPE OF THE PROJECT The temporal boundaries of any environmental assessment report must be expanded to include the life-span of the radioactive wastes created by rebuilding a Candu reactor. Specifically, the temporal boundaries should be commensurate with the lifespan or radionuclide present in the retubing wastes. For instance PU 239, which has a half life of 24,000 years, will be present in the wastes produced by retubing the reactors at Pickering B. Any EA on the life-extension of Pickering B should include a discussion of the environmental impact of these radionuclides over their lifespan. It is Greenpeace Canada’s understanding that the waste from retubing the Pickering A station in the 1980s still remain on site. There should be a discussion of the environmental impacts of the potential scenario in which these wastes remain on site over the long-term if no other waste management option is approved.</p>	<p>Section 9.2.3 identifies an initial time frame for the assessment based on the duration of the project, the end of service life of the reactors estimated to be 2060. This time frame is considered adequate for the proposal under consideration; that is, the refurbishment and continued operation of the reactor.</p> <p>The effects of managing refurbishment wastes at the site during that time frame will be included in the EA.</p> <p>Longer-term management of the waste will occur at separately licensed facilities that have been, or will be, the subject of environmental assessments under the CEAA.</p> <p>It is also stated in that section that the time frame remain flexible to allow the full extent of likely environmental effects to be considered in the screening. Thus ensuring, that if modeling results demonstrate contaminant dispersion likely to cause environmental effects beyond the time frame identified, adjustments be made to take into account these effects in the EA.</p> <p>OPG is continuing with plans for the long-term management of their low and intermediate waste, and the NWMO has submitted their recommendations to the federal government for the long-term management of spent fuel. Applications submitted to the CNSC in relation to these projects are subject to the NSCA and CEAA.</p> <p>No changes to the EA Guidelines required.</p>
GP1-20		<p>5. MITIGATION MEASURES – ZERO EMISSIONS The chemical industry has accepted ‘zero emissions’ as a principle of operations. The CNSC should accept this as part of its principles of operation as well. The International Joint Commission has also endorsed the principal of zero emissions for the Great Lakes.</p>	<p>The purpose of this environmental assessment is to determine if the project, taking into account the appropriate mitigation measures, is likely to cause significant adverse environmental. Zero discharge is not a requirement for mitigation under the CEAA. The CNSC’s regulatory approach is to require licensees to operate within the regulatory limits and to levels that are as low as reasonably</p>

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Number	Name and Organization	Summary of Comment	CNSC Response
			<p>achievable, including elimination where achievable.</p> <p>No changes to the EA Guidelines required.</p>
GP1-21		<p>Any environmental assessment of the reconstruction and life-extension of Pickering B should consider measures to mitigate Pickering B’s radioactive and waste heat emissions. Specifically, the guidelines should consider the benefits of a cooling tower for waste heat. As well, the impact assessment should also include a discussion of the Best Available Technology (BAT) to eliminate radioactive emissions over Pickering B’s extended operating life, specifically tritium.</p>	<p>Section 9.2.2 of the EA Guidelines requires consideration of the effects of the operation of Pickering B on water quality and changes in temperature from cooling water released into Lake Ontario. Section 9.2.5 of the EA Guidelines requires identification of describe mitigation measures that are technically and economically feasible for each adverse effect.</p> <p>No changes to the EA Guidelines required.</p>
GP1-22		<p>6. WORKER SAFETY – RETUBING AND DECOMMISSIONING</p> <p>The reconstruction for life-extension of the Pickering B reactors is a significant and complex industrial project. The pressure tubes in the reactor core, or heart of the reactor – which, it must be noted, are highly radioactive – must be disassembled and either crushed or melted to reduce the volume, and stored in the new waste storage facility. This process is similar to the process that will have to take place during Pickering B’s eventual decommissioning.</p> <p>Because of the environmental and health hazards associated with working in the core of a Candu reactor, OPG and other CANDU operators have chosen deferred dismantling for the decommissioning their reactors. A Candu reactor core is a hazardous environment. The Preliminary Decommissioning Plan for Hydro-Quebec’s Gentilly-2 reactor, for instance, states that Decommissioning work is inherently different from operating a nuclear power station. By its very nature, decommissioning activities tend to create dispersible contamination and break down the safety and confinement barriers that were engineered into a power plant's design. As such...planning must account for this and incorporate alternate methods to control these hazards...."</p> <p>Greenpeace Canada feels that the environmental assessment should discuss and examine the potential hazards posed by retubing of Pickering B reactors.</p>	<p>The replacement of pressure tubes or fuel channel assemblies along with other components, in the Pickering B reactors is part of the activities required to extend the planned operational life of these units, as specified in section 7.0 of the EA Guidelines. Therefore all potential risks to workers, the public, and the environment, associated with all activities related to the project, including retubing and management of the replaced components, must be considered in the environmental assessment.</p> <p>No changes to the EA Guidelines required..</p>
GP1-23		<ul style="list-style-type: none"> The environmental assessment should discuss the possibility for “dispersible contamination” incidents during the retubing phase of the refurbishment. Mitigation measures should be discussed. 	<p>Several refurbishment activities will be carried out in a radiological environment as part of the proposed project. Consistent with CNSC regulatory requirements, OPG is expected to implement mandatory programs that are designed to protect the health and safety of persons, and the environment from radiological risks such as contamination. As indicated in 9.2.5 of the Guidelines, requires the assessment of likely effects of the project on the</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			<p>environment, and a description of mitigation measures that may be applied to each likely adverse effect, will be included in the EA.</p> <p>No changes to the EA Guidelines required.</p>
GP1-24		<ul style="list-style-type: none"> The environmental assessment should discuss the radioactive hazards posed to Nuclear Energy Workers during the retubing phase. At a minimum, this discussion should be comparable to the detail of decommissioning plans for Canada’s commercial reactors. 	<p>As indicated in section 9.2.4 of the EA Guidelines, human health is identified as an environmental component to be assessed. The hazards, or adverse effects posed to Nuclear Energy Workers during the re-tubing phase, is a sub-component of human health. It is CNSC's expectation that the effects caused by the project on the health of members of the public and workers will be evaluated. Mitigation measures will be identified and described for each likely adverse effect. For the protection of workers, these measures shall include an effective radiation protection program, including work planning, as well as an ALARA program to maintain doses as low as reasonably achievable, social and economic factors taken into account.</p> <p>No changes to the EA Guidelines required.</p>
GP1-25		<ul style="list-style-type: none"> The environmental assessment should include a detailed disclosure of the safety and radiation protection procedures that will be used to ensure the safety of worker during retubing. Specifically, there should be a discussion of the radiation fields that workers may be exposed to in retubing the core of the reactor and transporting the wastes to storage facilities. 	<p>The scope of the project identifies the replacement of reactor components, including retubing, and the transportation of waste, both on-site and off-site. OPG is expected to provide an assessment of ‘the sources and characteristics of any potential risks (including radiological risks) to workers, the public, or the environment’ from these project activities, as indicated in section 9.2.2 of the EA Guidelines. This would include the exposure of workers and the public to radiation fields from retubing and transportation activities.</p> <p>The CNSC controls the radiation doses in transport activities by the requirements of radiation protection program for both consignor and the carrier and also through the package labeling requirements based on dose rates from the package. The CNSC regulations are based on the IAEA transport regulations that are internationally acceptable and widely used for the transport of nuclear waste. Note that on-site transport are not covered by PTLTD's regulations but are controlled through license conditions requiring equivalent level of safety for the</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			workers as if it is being transported off-site. No changes to the EA Guidelines required.
GP1-26		<ul style="list-style-type: none"> The environmental assessment should discuss how OPG has improved on past practices (from other retubing projects) to protect workers health and the environment during retubing. 	<p>It is CNSC's expectation that operational experience will be taken into account when identifying the potential interactions between the project activities and the existing environment during construction and normal operations, and during identified relevant malfunctions and accidents, as well as when identifying and describing mitigation measures for each likely adverse effect.</p> <p>No changes to the EA Guidelines required.</p>
GP1-27		<ul style="list-style-type: none"> The environmental assessment should state whether OPG is using “best available technology” for dose reduction during the retubing phase of the refurbishment project. 	<p>Consistent with CNSC regulatory requirements and for the context of identifying mitigation measures in the EA, OPG shall keep doses received by and committed to persons as low as reasonably achievable (ALARA), social and economic factors being taken into account, through the implementation of management control over work practices, personnel qualification and training, control of occupational and public exposure to radiation and planning for unusual situations. It is CNSC's expectation that "best available technology" for dose reduction shall be used in accordance with the ALARA principle.</p> <p>No changes to the EA Guidelines required.</p>
GP1-28		<ul style="list-style-type: none"> It is notable that the environmental assessment on the life-extension of Bruce A stated that “The assessment of effects on the Radiation and Radioactivity Environment concluded that there is a likely effect on human health due to increased radiation doses to NEWs during the Refurbishment Phase.”⁶ The environmental assessment should state explicitly what the “likely effect on human health” due to retubing activities will be. 	<p>As indicated in section 9.2.4 of the Guidelines, human health as an environmental component to be assessed. The hazards or adverse effects posed to humans during the retubing activities will be assessed as described in 9.2.5 of the Guidelines, including the significance of the residual environmental effects that likely will occur as a result of the project. It is CNSC's expectation that the effects caused by the project on the health of members of the public and workers will be evaluated and mitigation measures will be identified and assessed.</p> <p>See response to GP1-24</p> <p>No changes to the EA Guidelines required.</p>
GP1-29		<ul style="list-style-type: none"> The environmental assessment should discuss what percentage of contract workers will be required to carry out work in radioactive environments and 	<p>For the purposes of this assessment, “worker” will be identified as “Nuclear Energy Workers” or “Non Nuclear</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		with radioactive materials.	<p>Energy Workers” regardless of who they work for. The number of OPG employees and the number of contract employees will be provided as part of the workforce employed in the refurbishment. OPG remains accountable for the safety of all workers on site.</p> <p>Section 9.2.2, “General Information, Design Characteristics and Normal Operations” of the EA Guidelines will be modified as follows: <i>“the predicted doses to workers, including doses to contract workers ...”</i></p>
GP1-30		<ul style="list-style-type: none"> • The environmental assessment should describe all CNSC approvals and administrative controls overseeing the refurbishing of the Bruce A reactors. 	<p>It is assumed that reference to Bruce A is meant as Pickering B.</p> <p>The CNSC licensing actions required to allow the project to proceed were considered in determining the application of the CEAA to this project. If the project proceeds to licensing the necessary approvals would be considered under the provisions of the NSCA. The details of the licensing process are not relevant to the objectives of the environmental assessment at this time.</p> <p>See responses to GP2-7 (GP2-12) and GP2-13 below.</p> <p>No changes to the EA Guidelines required.</p>
GP1-31		<ul style="list-style-type: none"> • The CNSC should provide an explanation as to why decommissioning of the Pickering B facility is delayed for worker safety reasons but retubing work (which is very similar in terms of radiological hazards) can be carried out without threat to workers immediately after the reactor is defueled. 	<p>The EA will provide part of the information that the CNSC will use in considering OPG's proposal to re-tube Pickering B. Section 9.2.5 of the Guidelines requires that OPG provide an assessment of the effects caused by the re-tubing project on various environmental components, including human health. OPG's proposal will be subjected to a thorough evaluation under the provisions of the NSCA and its regulations. This will include a review of the radiological hazards to determine if the work can be safely carried out.</p> <p>No changes to the EA Guidelines required.</p>
GP1-32		<p>7. RADIOACTIVE WASTES Greenpeace Canada is concerned that the federal government and its regulator, the Canadian Nuclear Safety Commission, have failed to establish a transparent and socially acceptable framework for managing long-lived, non-fuel radioactive wastes in Canada. To this effect, Greenpeace Canada</p>	<p>Radioactive waste is regulated and managed in accordance with the following policies and regulations: the 1996 Government of Canada <i>Radioactive Waste Policy Framework</i> that provides the National Context for waste management; CNSC Regulatory Policy P-290 <i>Managing</i></p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		Greenpeace filed a complaint with the Auditor General of Canada in June 2006 regarding the CNSC’s failure to pro-actively acknowledge the lack of federal regulations and policies governing non-fuel radioactive wastes.	<p><i>Radioactive Waste</i> identifies the philosophy and principles used in regulating radioactive waste; and as all radioactive waste contains nuclear substances, radioactive waste is subject to the <i>Nuclear Safety and Control Act</i> and its Regulations which are the following: the <i>General Nuclear Safety and Control Regulations</i>, the <i>Radiation Protection Regulations</i>, the <i>Class I Nuclear Facilities Regulations</i>, the <i>Class II Nuclear Facilities Regulations</i>, the <i>Uranium Mines and Mills Regulations</i>, the <i>Packaging and Transport of Nuclear Substances Regulations</i>, the <i>Nuclear Security Regulations</i>, and the <i>Nuclear Non-Proliferation and Import Export Control Regulations</i>.</p> <p>No changes to the EA Guidelines required.</p>
GP1-33		<p>Because of this regulatory vacuum, Greenpeace Canada requests that the environmental assessment discuss the following:</p> <ul style="list-style-type: none"> • How are “low- and intermediate level” wastes defined? Specifically, what is the radiological categorization of such wastes, and are they short- or long-lived wastes. These definitions should be made explicit in the report. 	<p>Section 9.2.2 of the EA Guidelines requires that the proponent provide information on ‘the sources, type and quantities of radioactive and non-radioactive waste, including hazardous waste, predicted to be generated by the project’, as well as the ‘on-site processes for the management of radioactive and non-radioactive waste, including hazardous waste, such as collection, handling, and transportation, to be generated by the project.’</p> <p>In this regard, CNSC staff expects OPG to describe the radioactive wastes produced during refurbishment and the extending life of the reactor and provide information on how the wastes will be categorized and managed.</p> <p>No changes to the EA Guidelines required.</p>
GP1-34		<ul style="list-style-type: none"> • State the source of the definition of “low- and intermediate level” used in the environmental assessment. 	<p>As indicated in GP1-33, above, OPG is expected in their environmental assessment to provide information on how they categorize their waste.</p> <p>No changes to the EA Guidelines required.</p>
GP1-35		<ul style="list-style-type: none"> • Admit whether the federal government or the Canadian Nuclear Safety Commission have any regulations or policies governing the categorization of “low- and intermediate level” waste types discussed in the environmental assessment. In either case, these regulations or lack thereof should be discussed in the environmental assessment. 	<p>Radioactive waste in Canada is informally classified according to its radiological hazard and origin, falling therefore into three broad categories: namely spent fuel, low-level radioactive waste, and uranium mine and mill tailings. Individual licensees are free to utilize more detailed sub-categories of these definitions for their operational management purposes. As indicated above in</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			<p>the response to GP1-33, OPG is expected to describe the radioactive wastes produced during refurbishment and the extending life of the reactor and provide information on how the wastes will be categorized and managed.</p> <p>No changes to the EA Guidelines required.</p>
GP1-36		<ul style="list-style-type: none"> • What radioactive wastes are produced through the process of retubing and refurbishment of the Bruce A reactors? Volumes should be included. 	<p>It is assumed that the comment is referring to Pickering B as opposed to Bruce A.</p> <p>As discussed in GP1-33, Section 9.2.2 of the EA Guidelines requires information on the quantities of refurbishment wastes, including their volumes, be provided.</p> <p>No changes to the EA Guidelines required.</p>
GP1-37		<ul style="list-style-type: none"> • The environmental assessment should provide a list of radioisotopes and their half-lives contained in each radioactive waste produced. 	<p>OPG is expected to identify the types of radioactive waste associated with the refurbishment and life extension. This would include adequate description of the nuclear substances they contain to assess the radiological hazard of the project.</p> <p>No changes to the EA Guidelines required.</p>
GP1-38		<ul style="list-style-type: none"> • The environmental assessment should discuss how long the radioactive wastes produced must be isolated to protect human health and the environment. 	<p>OPG is required to identify how the radioactive wastes will be stored, and what mitigation measures will be employed to address potential adverse effects to human health and the environment within the spatial and temporal boundaries of the assessment.</p> <p>No changes to the EA Guidelines required.</p>
GP1-39		<ul style="list-style-type: none"> • There should be a statement of the total amount of these so-called “low- and intermediate” level waste that will be produced by Pickering B’s operation up until 2060, and including its eventual decommissioning. 	<p>OPG is required in Section 9.2.2 of the EA Guidelines to identify the quantity of radiological waste, generated by the project. The project scope includes activities related to the continued operation of the refurbished reactors to 2060 and includes the continued management of operational low and intermediate-level waste.</p> <p>No changes to the EA Guidelines required.</p>
GP1-40		<ul style="list-style-type: none"> • What programmes are in place to reduce the volume of these wastes, including the long-lived non-fuel radioactive wastes? 	<p>Section 9.2.2 of the EA Guidelines requires OPG to provide information on the on-site process for the management of radioactive and non-radioactive waste, including the areas of collection, handling, and transportation. Any volume reduction process or practice will be included in the</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			assessment. No changes to the EA Guidelines required.
GP1-41		<ul style="list-style-type: none"> • What volume of high-level nuclear waste (used fuel) will be produced by the continued operation of the Bruce A reactors until 2043? 	<p>OPG is required in Section 9.2.2 of the EA Guidelines to identify the quantity of radiological waste, including spent fuel, generated by the project. The project scope includes activities related to the continued operation of the refurbished reactors to 2060 and includes the interim storage of spent fuel at the Pickering site.</p> <p>No changes to the EA Guidelines required.</p>
GP1-42		<ul style="list-style-type: none"> • The Nuclear Waste Management Organization’s recommendation on the long-term management of used nuclear fuel has yet to be approved by the federal government. The environmental assessment should contain a discussion of Nuclear Waste Management Organization’s proposed management method, and the next steps required for its implementation. 	<p>The long-term management of used fuel is not within the scope of this project. The Nuclear Waste Management Organization (NWMO) has made recommendations to the federal government through the Minister of Natural Resources; no final options have been defined or approved as yet. Consequently, it would be inappropriate for the guidelines to include a discussion of the options in the assessment. Long-term management of used fuel will be the subject of another undertaking that will be the subject of another EA.</p> <p>No changes in the EA Guidelines required.</p>
GP1-43		<ul style="list-style-type: none"> • The environmental assessment should contain a discussion of how the management and debate around the management of used fuel has evolved since the Pickering station began operation. There should be a discussion of how used-fuel waste will be managed if the Nuclear Waste Management Organization’s recommendation is not accepted or implemented. 	<p>As indicated above, the recommendations of the NWMO are with the federal government for their decision, and the long-term management of used fuel is not part of the scope of the project. Used fuel is currently in interim storage at the Pickering site. Any future application to the CSNC concerning the long-term storage of used fuel at this, or any other site will be examined in the context of the NSCA and the CEAA.</p> <p>No changes to the EA Guidelines required.</p>
GP1-44		<p>8. CLIMATE CHANGE Greenpeace Canada believes it is crucial that any environmental assessment on the life-extension discuss the possible impact of climate change on the continued operation of the facility and the study area.</p> <p>According to the Canadian Environmental Assessment Agency’s guide Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners, environment assessments should include</p>	<p>Section 9.2.5 of the EA Guidelines entitled “Assessment of Effects of the Environment on the Project”, requires that the EA take into account “any potential effects of climate change on the project”, including an assessment of whether the project might be sensitive to changes in climate conditions during its life span.</p> <p>The EA Guidelines will be amended to include a reference</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		a “review of existing studies and information on climate change and the local, regional or inter-provincial/territorial changes to environmental conditions resulting from climate conditions, including trends and projections where available;”. It also recommends the “identification of project sensitivities to climate parameters and variability.”	to the Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment’s “ <i>Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners</i> ” as the basis for analyzing the effects of climate change on the project.
GP1-45		<ul style="list-style-type: none"> The environmental assessment should identify and discuss “project sensitivities to climate parameters” and review and discuss studies on the predicted impact of climate change on the study area. 	The EA Guideline will be amended as discussed in GP1-44.
GP1-46		<ul style="list-style-type: none"> If there is any discussion of Pickering B’s impact on the climate change should include the greenhouse gas emissions from the full nuclear fuel cycle – uranium mining, refining, transportation, and radioactive waste management – and not simply the operation of the Pickering B facility. 	<p>The EA will examine the effects of the refurbishment project on the environment, including with respect to emission to the atmosphere. The emissions to the atmosphere from other nuclear fuel cycle facilities is not within the scope of the project. Those facilities are separately licensed and are subject to separate environmental assessments and strict controls. Even without the Pickering B refurbishment project, those facilities would continue to operate and thus cannot be reasonably included in the scope of this the Pickering B refurbishment project.</p> <p>No changes to the EA Guidelines required.</p>
GP1-47		<ul style="list-style-type: none"> OPG should indicate whether it has a greenhouse gas emissions reduction strategy for the operation of its facility, including conservation and efficiency programmes for the facility and its workforce. 	<p>The EA will examine the effects on the environment from all atmospheric emissions. Mitigation measures, including the types of emission reduction efforts noted will form part of the assessment.</p> <p>No changes to the EA Guidelines required.</p>
GP1-48		<ul style="list-style-type: none"> How much electricity does the Pickering station use during operations? What are the environmental impacts of electricity use by the Pickering nuclear station? 	<p>The use of electricity by the Pickering B nuclear plant is included within the operation of the plant and is captured within the overall assessment of effects within the EA.</p> <p>No changes to the EA Guidelines required.</p>
GP1-49		<ul style="list-style-type: none"> Poor performance and safety problems at Ontario’s nuclear plants in the 1990s led to increased coal generation, with a doubling of emissions causing acid rain, smog and climate change. Indeed, Ontario Energy Minister Duncan has admitted that Ontario’s coal plants must be maintained in order to back up unreliable nuclear plants. The environmental assessment should discuss impact on greenhouse gas emissions and other pollutants if there are delays in the reconstruction and return to service of the 4 reactors at the Pickering B station. 	<p>The overall generation balance in the province is the responsibility of the Ontario Power Authority (OPA). OPG is responding to the Ontario Minister of Energy’s Directive to begin a federal Environmental Assessment on the refurbishment of the four Pickering B units. The purpose of the EA is to assess the effects of the refurbishment project. It is not appropriate to include in this project-specific EA a discussion of alternatives to the</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			<p>project, such as other means of generating electricity. These are policy decisions that must be made by the province.</p> <p>No changes to the EA Guidelines required.</p>
GP1-50		<ul style="list-style-type: none"> Climate change will change weather patterns in the study area. Thus, a simple “description of the existing environment” as stipulated in section 9.2.4 of the guidelines is not sufficient to determine the interactions between the environment and the environment. The environmental assessment should, for example, discuss whether patterns of storm-water run-off at the Pickering station understood. It should then proceed to discuss whether patterns are predicted to change because of climate change during the study period. 	<p>Effects of the environment on the project, including from possible climate change is within the scope of the assessment as proposed.</p> <p>The EA Guideline will be amended as discussed in GP1-44. No Change to the EA Guidelines required.</p>
GP1-51		<ul style="list-style-type: none"> Similarly, the environmental assessment should discuss whether there is an understanding of the behaviour (including location, volume, velocity, and direction) of groundwater flow-through in sufficient detail to adequately explain the fate and transport of contaminants from the Pickering site. Then, it should discuss whether these groundwater patterns are predicted to change because of climate change during the study period? 	<p>As noted in section 9.2.4 of the draft EA Guidelines, a description of the existing environment must form part of the EA for the purpose of predicting effects of the project on that environment. The existing condition of the groundwater regime and the effects of the project on it will be addressed by the EA.</p> <p>The EA Guideline will be amended as discussed in GP1-44.</p>
GP1-52		<ul style="list-style-type: none"> The environmental assessment should discuss what procedures or policies Ontario Power Generation has in place to deal with extreme weather events, which are predicted to increase under climate change. 	<p>This falls within the scope of the assessment as described in the EA guidelines.</p> <p>The EA Guideline will be amended as discussed in GP1-44.</p>
GP1-53		<ul style="list-style-type: none"> The environmental assessment should examine how fish habitat in the study area may be impacted by climate change. 	<p>This falls within the scope of the assessment as described in the EA guidelines.</p> <p>The EA Guideline will be amended as discussed in GP1-44.</p>
GP1-54		<ul style="list-style-type: none"> There should be an examination of whether the likelihood of severe floods will be increased due to climate change in the study area. 	<p>This falls within the scope of the assessment as described in the EA guidelines.</p> <p>The EA Guideline will be amended as discussed in GP1-44.</p>
GP2-1	GREENPEACE ⁸	<p>I write to express Greenpeace Canada’s deep concern that the CNSC is not exercising proper procedure and rigour in overseeing environmental assessment requirements for the proposed life-extension of Ontario Power Generation’s Pickering B nuclear station. Specifically, there are two areas of significant and immediate concern: first, the lack of detail and notable errors contained in the OPG’s project description as accepted by the CNSC; and second, the seeming readiness of the CNSC to override its own procedures to</p>	<p>The CNSC is fully in compliance with its obligations under the CEAA for this assessment. The Commission’s process exceeds the requirements of the CEAA, including for example the Commission’s holding of separate public hearings on the EA Guidelines.</p> <p>See response to GP2-7 (GP2-20) and GP2-21 below.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		fast track the approval of OPG’s environmental assessment guidelines in order to meet the business planning of OPG.	No changes to the EA Guidelines required.
GP2-2		Both of these concerns indicate to Greenpeace Canada that the CNSC is continuing its history of accommodating the business interests of its licencees – the nuclear industry – above proper regulation in the public interest.	See responses to GP2-7 (GP2-20) and GP2-21. No changes to the EA Guidelines required.
GP2-3		Greenpeace Canada has followed closely the CNSC’s handling of the life-extension of the Point Lepreau, Gentilly-2 and Bruce nuclear stations. In each case, CNSC staff allowed licensees, who view regulatory and environmental assessment obligations as a hurdle to be minimized, to establish a de facto regulatory framework for the life-extension of nuclear reactors. To this effect, Greenpeace filed a complaint with the Auditor General of Canada in June regarding the CNSC’s failure to pro-actively acknowledge the lack of federal regulations and policies governing the life-extension of nuclear reactors in Canada.	CNSC responded to Greenpeace Canada’s in a letter on November 17 th , 2006 ⁹ . No changes to the EA Guidelines required.
GP2-4		It is notable that both Hydro-Quebec and New Brunswick informed CNSC staff that the business case for their life-extension projects were ‘weak’ and were partially contingent on the regulatory requirements imposed by the CNSC. In an attempt to aid New Brunswick Power lower its ‘regulatory risk’ CNSC staff advised New Brunswick Power against the development of “policies and requirements” for the life-extension of nuclear reactors because “[e]xperience has shown...that introducing new requirements of this type with the attendant need for extensive consultation with both the industry and the public is not an activity which can be completed in the short term. It seems unlikely that the time required would be consistent with your proposed schedule for decision making.”	No changes to the EA Guidelines required.
GP2-5		These past actions (to cite just two) highlight the regulatory culture at the CNSC that prioritizes the business interest of the nuclear industry licencees over independent, transparent and publicly accountable oversight of the nuclear industry in Canada.	CNSC responded to Greenpeace Canada’s characterization that the CNSC has “... prioritized the business interests of the nuclear industry licensees over independent, transparent and publicly accountable oversight of the nuclear industry in Canada.” in a letter on November 17 th , 2006 ⁹ . No changes to the EA Guidelines required.
GP2-6		The current handling of the OPG’s proposed life-extension of the Pickering B nuclear station suggests to Greenpeace that this pattern of behaviour is continuing. OPG’s decision-making timelines seem to be influencing the CNSC to accept inadequate project information from OPG and by-pass established CNSC consultation procedures.	The CNSC is applying the CEAA rigorously and going beyond what is required for a screening EA. See response to GP2-21 for more detail regarding Rules of Procedures. No changes to the EA Guidelines required.
GP2-7		OPG’s proposal to rebuild and extend the life of the Pickering B nuclear station is a multi-billion dollar complex undertaking that will take at least 10 years to complete. Canadian Environmental Assessment Agency’s (CEAA) Operational Statement on Preparing Project Descriptions states that “The	The project description submitted by OPG is adequate as it provides sufficient information to CNSC staff to make a determination as to whether an environmental assessment pursuant to the CEAA is required for this project. The

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		<p>level of detail provided in a project description should be appropriate to the scale and complexity of the project.” Greenpeace Canada does not feel that the level of detail provided in OPG’s project description is commensurate with the magnitude and high-cost of rebuilding the Pickering B nuclear station.</p> <p>There is little information, for instance, on the scope of repairs required to extend the operational life of Pickering B. Indeed, in a letter to Greenpeace Canada clarifying the scope of repairs and schedule for the refurbishment, OPG was vague, stating: “The duration of refurbishment outages would thus be eight to twelve years, depending on the scope of the work.”</p> <p>OPG’s project description states that the life-extension project will permit the “[c]ontinued operation of all four reactors for an additional 35 years.” There is no discussion, however, on the scope of repairs required to extend the life of each reactor for 35 years. In regard to fuel channel replacement OPG simply states that “OPG will replace fuel channel components as necessary.”</p> <p>It is also noteworthy since submitting its project proposal that OPG has revised its projected life-extension estimate to 30 years. This inconsistency indicates to Greenpeace that OPG’s project planning may still be too preliminary to proceed with thorough evaluation of the environmental impacts and safety risks of extending the life of Pickering B.</p> <p>Given the safety implications for the continued operation of Pickering B, Greenpeace Canada feels that OPG should provide the full scope of repairs it anticipates necessary to operate the reactors for 30 (or 35) years. The scope of repairs will have an obvious impact on the scheduling of the project work over given the complexity of the work involved in retubing and refurbishing a reactor and should therefore be included in the project description (see next section).</p>	<p>project description submitted by OPG also meets the information requirements as defined in the CEEA <i>Regulations respecting the coordination by federal authorities of environmental assessment procedures and requirements.</i></p> <p>OPG will be providing a more detailed project description in its EA Study Report. Information expected from OPG regarding the description of the project is outlined in the draft EA Guidelines and will include the sources, types and quantities of waste to be generated by the project. These guidelines were made available to the public for review. Staff will be submitting the proposed EA Guidelines, taking into account comments received, for consideration by the Commission.</p> <p>No changes to the EA Guidelines required.</p>
GP2-8		<p>It is noteworthy that CEEA’s Operational Statement on Preparing Project Descriptions under the Canadian Environmental Assessment Act (August 2000 - OPS - EPO/5 – 2000) states the “schedule (time of year, frequency, duration, magnitude and extent of activities)” are a required components of any project description.</p> <p>OPG has not provided this information for the principal undertaking of the life-extension – the retubing and refurbishment activities for the 4 Pickering B reactors. Instead, OPG simply identifies a broad “refurbishment outage” from “2012 - 2022” The project description is inconsistent, however, with</p>	<p>See response to GP2-7.</p> <p>No changes to the EA Guidelines required.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		<p>OPG also stating that “[f]or EA purposes, refurbishment of the first unit is assumed to begin in 2014, and refurbishment of the other units would occur over approximately eight years.” This inconsistency either shows sloppy editing or that OPG’s project planning may still be too preliminary to proceed with a thorough evaluation of the environmental impacts and safety risks with extending the life of Pickering B.</p> <p>No dates are given for the projected end of operational life for each of the Pickering B units. Nor have the anticipated retubing outages for each unit been included. Given the radioactive hazards, demand on resources (including retubing and refurbishment support facilities) and impacts on the environment involved in retubing each of the Pickering B reactors, Greenpeace Canada believes that schedule for these activities, including “time of year, frequency, duration, magnitude and extent of activities” should be included in the Project Description for the Life Extension B before proceeding with the approval of the EA guidelines.</p> <p>As noted, Greenpeace requested clarification from OPG as to the predicted operational life and the refurbishment life timelines. This letter provided little clarification. OPG acknowledged that it has yet to determine when it will begin the refurbishment outage, stating “The earliest start date for the refurbishment outage is 2012, the latest is 2014.”</p> <p>Again, the schedule of work is very important for properly assessing environmental impacts. It is noteworthy that a number of the environmental effects identified in the environmental assessment of the refurbishment of Gentilly-2 dealt with the schedule, duration and timing of work refurbishment.</p>	
GP2-9		<p>The selective safety evaluation of the hundreds of fuel channels (including pressure tubes and calandria tubes) as well as feeder pipes in each reactor is uncertain at best. Cracks in these tubes have in the past caused Major Loss of Coolant Accidents (LOCAs), which can lead to a meltdown if safety systems fail. In order to ensure public safety, the CNSC should insist that OPG replace all pressure tubes, calandria tubes, and feeder pipes without exception. The decision to allow OPG to selectively replace these components “as necessary” is a clear example of safety being sacrificed to save money.</p> <p>Greenpeace is also deeply concerned by the safety issues related to ongoing operation of the ageing Pickering B reactors. OPG’s current vague proposal to carry out retubing and refurbishment activities over a decade until 2022 suggests that OPG may wish to operate some of the reactors at Pickering B</p>	<p>OPG plans to replace fuel channel components such as pressure tubes, calandria tubes, and feeders as necessary during the refurbishment of Pickering B. These assumptions are being used in the EA. However, the Integrated Safety Review (ISR) and the plant condition assessments will more specifically determine which components will require replacement/refurbishment to ensure that Pickering B’s level of safety is comparable to that of a modern nuclear plant. In addition, OPG will be conducting other reviews to determine which other components could be refurbished from an economic standpoint.</p> <p>With respect to your comments regarding “the dangerous</p>

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Number	Name and Organization	Summary of Comment	CNSC Response
GP2-10		<p>well past 2015 when ageing will make safety more and more questionable.</p> <p>It is well known that Candu reactors are prematurely ageing. Hydro-Quebec, for instance, informed the CNSC in 2005 that it would be unable to safely operate Gentilly-2 past 2010 without significant economic costs despite having informed the CNSC that it could operation the reactor to 2013 in 2003. CNSC also voiced their concern to New Brunswick Power in 2005 regarding the “uncertainties” regarding the Point Lepreau’s projected operational life and “the prospect of the station reaching the limit of fitness-for-service before preparations for refurbishment can be completed.”</p> <p>Thus, the decision on how long OPG decides it will operate the ageing reactors at Pickering will have a significant impact on the safe operation of the station and will contribute to the risks involved with the retubing work to be carried out between 2012 and 2022. It goes without saying that there will be significant pressure on OPG (and the CNSC) to permit the continued operation of the reactors at Pickering B despite ageing and declining safety margins.</p>	<p>practice of selective replacement”, the licensee is required in the licence to inspect and perform material surveillance on all pressure boundary components important to safety in accordance with the periodic inspection program. This is done in accordance with the technical requirements in CSA standards N285.4-94 and N285.5-M90 (reaffirmed in 2000).</p> <p>The inspection and the monitoring of these components are subject to the life cycle management program and the periodic inspection program, which dispositions any noncompliant results in a Fitness-for-Service-Assessment. When results do not comply with the acceptance standard further inspections are conducted. Final disposition of the noncompliant item may result in acceptance, revised inspection program, repair or replacement. The CNSC must accept all proposed dispositions prior to returning the component to service.</p> <p>As a result, the periodic inspection program can require the repair or replacement of any pressure boundaries that are noncompliant at any time. This means that if a component becomes noncompliant prior to any refurbishment activity that it will be either: inspected further, repaired or replaced before operation can continue. Through this process the CNSC ensures that pressure boundary components are safe to operate at all times and that they are safe to operate for the accepted period. As pressure boundaries reach the end of life at Pickering B, a decision imposes itself as to whether to replace all of these components at once rather than replacing each component separately when it reaches its end of life. As a result, OPG has stated it will be conducting a condition assessment of the pressure boundaries important to safety, which will form the basis for the extent that fuel channel components will be replaced in accordance with the applicable standards.</p> <p>See response to GP2-22 below for additional information.</p> <p>No changes to the EA Guidelines required.</p>
		<p>It should be noted that the cases of Point Lepreau, Gentilly-2 and Bruce A,</p>	<p>See response to GP2-7.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		the licensee provided a projected date for retubing. Given that Pickering B is a multi-unit station and OPG foresees this project taking place over a decade, the expected dates for retubing and refurbishment are essential for assessing the environmental and social impacts of the project during the environmental assessment. What's more, according to past precedent retubing and activities will fall within the scope of the environmental assessment and therefore should be better described within the project description.	No changes to the EA Guidelines required.
GP2-11		<p>Greenpeace Canada does not feel that OPG's project description for the life-extension of the Pickering B nuclear station meets the requirements listed in the Canadian Environmental Assessment Agency's Operational Statement on Preparing Project Descriptions in regard to the scheduling of project activities. Greenpeace also feels that the lack of information regarding the projected operational life of the ageing reactors at Pickering B raises questions of nuclear safety that should be dealt with during the environmental assessment of the life-extension of Pickering B.</p> <p>If OPG has yet to develop such detailed work forecasts, Greenpeace Canada believes that work on the environmental assessment should not proceed until such information is provided to the CNSC and the public.</p>	<p>See response to GP2-7.</p> <p>No changes to the EA Guidelines required.</p>
GP2-12		The project description also fails to fully describe the federal authorizations required for rebuilding each of the reactors at Pickering B.	<p>See response to GP2-7.</p> <p>No changes to the EA Guidelines required.</p>
GP2-13		While the project description does admit that a federal authorization of some kind will be required for refueling and re-watering the each reactor at Pickering B, it does not acknowledge that de-fueling and de-watering of the each reactor before retubing will also require licensing approval of some kind. The CNSC has informed both Hydro-Quebec and New Brunswick Power that a 'De-fuelled Core State' status must be added to the Operational Policies and Principles for refurbishment to proceed. Based on legal advice from Justice Canada, the CNSC has also acknowledged that approvals granted under a license that allow a retubing to occur are "approvals" pursuant to paragraph 5(1)(d) of CEAA and are therefore "triggers" for an environmental assessment.	<p>As mentioned, there will likely be other approvals required to modify the Operating Policies and Principles to allow for the de-fueling and de-watering activities. All modifications to the Operating Policies and Principles are considered license amendments to the documents listed in Appendix B and they must be approved by the Commission or a person authorized by the Commission in accordance with licence condition 1.4.</p> <p>The intent is to assess all activities that may require future authorizations, including the initiation and completion of the refurbishment and restart and operation of the reactor units, under the current EA screening.</p> <p>No changes to the EA Guidelines required.</p>
GP2-14		And while the project description notes that a federal authorization will be required for refueling and re-watering before re-starting each reactor unit, the project description does not acknowledge the precedent set by the recent Commission decision regarding the restart of Point Lepreau after retubing.	Upon receipt of the OPG's letter of intent and project description ¹⁰ and ¹¹ , CNSC staff completed an EA Determination ¹² regarding Pickering B Refurbishment for Continued Operation Environmental Assessment. The

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		Specifically, the Commission decided that "...NN Nuclear shall obtain approval of the Commission before reloading fuel in the reactor and proceeding with the restart of the reactor, as described in the licence condition 12.1. The Commission will consider the request for approval, including the completion assurance report, in the context of a public hearing."	<p>licensing action required for this project would be to include the scope of the refurbishment activities (to be determined following the ISR) in a similar manner to Pt. Lepreau (site license conditions 12.1 & 12.2 and Appendix J). This will also result in changes to training (see 1.1.1 of Pt. Lepreau license).</p> <p>If the project proceeds to licensing, CNSC staff may recommend that the licence be modified at the time of the next renewal to include the scope of the refurbishment activities as discussed above. More specifically, the new or amended conditions which may be added relating to the refurbishment scope would cover the reactor restart and station return to service phases and require the licensee to obtain approval from the Commission, or from a person authorized by the Commission before GSS removal and subsequent increases in reactor power. CNSC staff would confirm due completion of the work before granting any approval. Both the new and amended licence conditions would be consistent with conditions used for other Canadian nuclear generating stations which have returned to service following extended outages.</p> <p>No changes to the EA Guidelines required.</p>
GP2-15		Greenpeace Canada requests that all expected licensing authorizations be described in the project description, including probable dates.	<p>See response to GP2-7.</p> <p>No changes to the EA Guidelines required.</p>
GP2-16		The CEAA guide on project descriptions states that "...the nature of any solid, liquid or gaseous wastes likely to be generated by the project, and of plans to manage these wastes and disposal procedures for any toxic/hazardous materials to be used or by-products of the project" should be contained in a project description. Greenpeace is not satisfied that OPG has adequately analyzed or disclosed the probable nature of wastes generated by the life-extension of Pickering B. For example, OPG states that "For preliminary planning purposes, a total as-stored volume of 3,000 m ³ is assumed, based on the storage concept similar to that employed in the Bruce Units 1 and 2 refurbishment." Depending on the waste scenarios provided in Bruce Power's project description shows that OPG has yet to adequately analyze the nature and scope of the work involved in rebuilding the Pickering B nuclear station. Given this project will likely cost \$5 billion, there is no excuse for OPG not to invest in the proper analysis at the beginning of the process to facilitate proper public disclosure and scrutiny during the environmental assessment	<p>See response to GP2-7.</p> <p>The initial project description submitted by OPG is intended to provide enough sufficient information for the CNSC to make a determination under CEAA as to whether there is a project and if so, identify what type of EA is required. As indicated section 9.2.2 of the draft guidelines, OPG will be required during the EA process to develop and provide more detailed information on the project, including on the nature and quantity of waste that will be produced by the proposed project.</p> <p>No changes to the EA Guidelines required.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
GP2-17		<p>process.</p> <p>According to OPG’s Preliminary EA and Project Schedule the final EA guidelines for life-extension of Pickering B nuclear station will be issued in November 19, 2006. A copy of the draft EA guidelines were mailed to Greenpeace on September 5, 2006. The deadline for comments is October 13th 2006.</p> <p>Greenpeace inquired of CNSC staff regarding the probable date of a Commission hearing on the draft guidelines, and was told the CNSC is “expecting the guidelines to go to the Commission for consideration in mid-December. This is not a pre-consultation exercise. The letter (with enclosures) you’ve received is the official request for comments on the guidelines.” However, no notice of a public hearing was sent out with this notice.</p> <p>If the CNSC holds this position, it indicates that the CNSC is overriding accepted CNSC consultation procedure to fast track the approval of OPG environmental assessment guidelines. By this letter, Greenpeace contests CNSC’s seeming intention to override its rules and procedures.</p> <p>It must be noted that CNSC practice is to hold such a pre-consultation period prior to a consultation period on amended draft guidelines that will be presented to the Commission. Greenpeace recently participated in such a pre-consultation exercise regarding the Environmental Assessment guidelines for OPG’s proposed Deep Geological Repository for Low and Intermediate Waste. Note that the pre-consultation period on OPG’s Deep Geological Repository took place from June 5th to July 17th. CNSC staff then took one month to review the comments and amend the draft guidelines for publication on August 23rd 2006 – the 60 days required before a Commission hearing schedule for October 23rd 2006.</p> <p>According to CNSC rules of procedure for a one-day Commission hearing require “written submissions from the applicant and CNSC staff must be filed at least 60 days prior to the hearing day. Intervenors are then invited to register their submissions at least 30 days prior to the hearing.”</p> <p>Given these rules, any notice of a public hearing on the Pickering B EA guidelines would require “written submission from the CNSC staff must be filed at least 60 days before the hearing date.” Otherwise put, for a hearing to take place in mid-December as suggested by CNSC staff all documents and a notice of meeting would need to be public by mid-October.</p>	<p>The CNSC is applying the CEAA rigorously and is going beyond what is required for a screening EA. See response to GP2-21 below for additional details.</p> <p>No changes to the EA Guidelines required.</p> <p>The Commission will hold a public hearing on the EA Guidelines in accordance with its Rules of Procedures. A public notice of the hearing will be issued accordingly.</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
		<p>Given the current deadline of October 13th is in place, it must asked how the CNSC could reasonably plan to hold a hearing in mid-December when CNSC staff must take the time to review public comments received by Friday October 13th and amend the draft guidelines accordingly? Unless the CNSC plan to simply dismiss comments, Greenpeace contends that this is not possible in such a short time period.</p> <p>As noted, CNSC staff has previously by-passed proper public consultation on the scope and requirements of extending the operational life of the Point Lepreau nuclear station to accommodate New Brunswick Power’s “proposed schedule for decision making.” It is the position of Greenpeace Canada that this type of behaviour is unacceptable for a supposedly independent and public interest regulatory body.</p>	
GP2-18		After observing the CNSC’s handling of the life-extension of Point Lepreau, Gentilly-2 and Bruce nuclear station, it is apparent to Greenpeace Canada that the CNSC has a pattern of behaviour that prioritizes aiding nuclear industry licensees to lower their “regulatory risk” over proper and transparent regulation in the public interest.	No change to the EA Guidelines required.
GP2-19		Transparency, accountability, health and environmental protection should be the principals that drive the CNSC’s regulation of the nuclear industry in Canada. The apparent willingness to by-pass CNSC procedure and accept an inadequate project description for a complex and multi-billion dollar undertaking such as the reconstruction of the Pickering B nuclear station, indicates to Greenpeace Canada that meeting OPG’s decision-making schedule is the driving factor behind the CNSC’s handling of the Pickering B life-extension.	<p>The CNSC is applying the CEAA rigorously and is going beyond what is required for a screening EA. See response to GP2-7 and GP2-21 for further details.</p> <p>No change to the EA Guidelines required.</p>
GP2-20		<p>By this letter Greenpeace Canada requests that the CNSC begin to change this pattern of behaviour. We therefore recommend that:</p> <p>1) The CNSC instruct OPG to submit a more thorough project description describing in detail the work schedules, scope of repairs needed to extend the life of the station and a detailed inventory of wastes produced by the Pickering B refurbishment.</p>	<p>See response to GP2-7.</p> <p>No change to the EA Guidelines required.</p>
GP2-21		2) That the CNSC adhere to its consultation procedures and publish all documents for a public hearing on the draft guidelines 60 days before the hearing.	With respect to your recommendation on the public hearing process for the EA Guidelines, please note that at the March 23, 2005 Commission public meeting, the Commission considered the CNSC process with respect to the EAs it carries out. The decision is detailed in paragraph 24, item 5 of the minutes of the March 23, 2005 public meeting. The

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			<p>Commission determined that Screening EA Guidelines (scoping document) would not be considered by the Commission in the context of a public hearing but in the context of hearing where the public could observe the proceedings but not have the opportunity to participate. This is largely predicated on the basis that comments were already received by CNSC staff on the draft guidelines and that there could be public hearings on the EA screening report and certainly at the licensing stage. Note that all documents on the record for such a hearing, including a <i>Notice of Hearing</i>, transcripts and a Record of Proceeding, including Reasons for Decision, would be publicly available. The Commission, in addition to making a determination on the EA Guidelines at the hearing, would also determine the type of hearing that would be carried out to consider the EA Screening Report, i.e. either at a hearing or at a public hearing where the public would be invited to participate.</p> <p>With respect to your comments on the CNSC Rules of Procedures, you are correct that written submissions from the applicant and CNSC staff must be filed at least 60 days prior to the hearing day for <i>public hearings</i> carried out over one day. The <i>Notice of Public Hearing</i> is also published at least 60 days prior to the public hearing. Please note, however, that hearing documents (submissions) are not published but are available upon request to the Secretariat.</p> <p>The above describes the Commission’s usual process to consider EA Guidelines in the context of a non-public hearing.</p> <p>The modified draft EA Guidelines will be presented to the Commission for approval at a one-day public hearing in January 2007. While it is not the Commission’s normal process to hold public hearings on EA Guideline decisions, as explained above, the Commission has made an exception in this case. The Commission will follow its normal Rules of Procedures for the hearing and therefore CNSC staff submissions for the hearing will be available 30 days prior to the date that interventions must be filed with the</p>

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
			Secretariat prior to the hearing. No changes to the EA Guidelines required.
GP2-22		3) In order to ensure public safety and prevent major loss of coolant accidents, CNSC should insist that OPG replace 100% of all pressure tubes, calandria tubes and feeder pipes, rather than allowing the dangerous practice of selective replacement.	See the response in GP2-9. In addition, the CNSC's approach for life-extension projects is outlined in Draft Regulatory Guide, G-360, Life Extension of Nuclear Power Plants. As outlined in this document, the CNSC expects the licensee to demonstrate the technical scope of the project is adequately determined through a <i>Safety Improvement Plan</i> that takes into account the results of an environmental assessment (EA) and an <i>Integrated Safety Review (ISR)</i> . The ISR is a comprehensive assessment of plant design, condition and operation and is performed in accordance with the <i>Periodic Safety Review of Nuclear Power Plants (PSR)</i> safety guide published by the International Atomic Energy Agency (IAEA). The ISR, and specifically the plant condition assessments and ageing management program reviews that are key elements of the ISR, will more specifically determine which components will require replacement/refurbishment to ensure that Pickering B will continue to meet modern high-level safety goals and applicable regulatory requirements for safe and secure operation over its life. No changes to the EA Guidelines required.
OME-1	ONTARIO MINISTRY OF ENERGY ¹³	After reviewing of the draft Guidelines, we have no comment on the details of the proposed scope of the EA.	Noted. No changes to the EA Guidelines required.
OPG-1	ONTARIO POWER GENERATION ¹⁴	We are satisfied that the Guidelines provide Ontario Power Generation with sufficient direction to conduct the technical Environmental Assessment studies in support of the Screening Report for the Project.	Noted. No changes to the EA Guidelines required.

¹ Letter, S. Kleinau to C. David, “File # 26-1-8-15-1, Request for Public Comments – Draft Guidelines OPG Proposal to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, September 16, 2006, BITS #1383653.

² Letter, L. Bowman to C. David, “Pickering Refurbishment Environmental Assessment (CEAR #06-01-21226)”, October 2, 2006, BITS #1348681.

³ Letter, C. David to L. Bowman, “Request for Information Regarding the Proposal by Ontario Power Generation (OPG) to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, Pickering, Ontario”, October 3, 2006, BITS #1172728.

DISPOSITION TABLE – STAKEHOLDER COMMENTS ON DRAFT EA GUIDELINES

Number	Name and Organization	Summary of Comment	CNSC Response
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⁴ Letter, C. David to L. Bowman, “Further Information Regarding the Proposal by Ontario Power Generation to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, Pickering, Ontario”, October 10, 2006, BITS #1172731.

⁵ Letter, M. Mattson to C. David, “Pickering B Refurbishment for Continued Operation Project”, October 13, 2006, BITS #1319619.

⁶ Letter, K. Heritage to C. David, “Request for Public Comments – Draft Environmental Assessment Guidelines, Ontario Power Generation Proposal to Refurbish and Continue to Operate the Pickering B Nuclear Generating Station, Pickering, Ontario”, October 11, 2006, BITS #1349025.

⁷ Letter, S.P. Stensil to C. David, “Comments on the draft EA guidelines for the life-extension of Pickering B”, October 13, 2006, BITS #1383351.

⁸ Letter, S.P. Stensil to L.J. Keen, “Proper CNSC oversight of Ontario Power Generation’s (OPG) proposed life-extension of the Pickering B nuclear station”, October 10, 2006, BITS #1372066.

⁹ Letter, J.K. Pereira to Shawn P. Stensil, November 17, 2006, BITS #1330053.

¹⁰ Letter, D. Patrick McNeil to T.E. Schaubel, “Proposed Refurbishment of Pickering B for Continued Operation – Project Description for Environmental Assessment”, June 15, 2006, BITS #130731.

¹¹ Letter, Jim Hankinson to T.E. Schaubel, “Proposed Refurbishment of Pickering B for Continued Operation Submission – Clarification”, June 28, 2006, BITS #1343073.

¹² EA Determination Request Form, 2006-06-16, Bit # 1267821.

¹³ Letter, C. Jobe to C. David, “Comments on the Draft Environmental Assessment (EA) Guidelines regarding Ontario Power Generation’s proposal to refurbish and continue operations of the Pickering B Nuclear Generating Station”, October 4, 2006, BITS #1319447.

¹⁴ Letter, D. Patrick McNeil to C. David, “OPG Comment on the CNSC Draft EA Guidelines for the Proposed Refurbishment and Continued Operations of the Pickering B Reactors Project”, October 13, 2006, BITS #1348991.