

Record of Proceedings, Including Reasons for Decision

In the Matter of

Proponent Cameco Corporation

Subject Environmental Assessment Guidelines for the
Proposed Blending of Slightly Enriched Uranium
(SEU) and Blended Dysprosium Uranium (BDU)
at the Conversion Facility in Port Hope

Date January 8, 2004

1. Introduction

Cameco Corporation (Cameco) has, in a letter to the Canadian Nuclear Safety Commission¹, stated its intent to apply for authorization to construct and operate additional facilities at its Port Hope Conversion Facility, Port Hope, Ontario. The facilities would be for the production of commercial quantities of Slightly Enriched Uranium (SEU), the processing of the associated scrap, and the production of Blended Dysprosium Uranium (BDU). The SEU and BDU powders produced at Cameco's facility would be shipped to separately-licensed facilities for fabrication into a new type of low-reactivity fuel for use in nuclear reactors. For the project to proceed, the Commission would have to amend the existing Fuel Facility Operating Licence for the facility.

Before the Commission can decide on the application for licence amendment, the Commission must, in accordance with the requirements of the *Canadian Environmental Assessment Act* (CEAA), make a decision on an environmental assessment (EA) of the proposed project. The Commission is the sole responsible authority for the EA.

In carrying out its responsibility under the CEAA, the Commission must first determine the *scope of the project* and the *scope of the assessment*. To assist the Commission in this regard, CNSC staff, after consulting with other government departments, the public and other stakeholders, prepared a draft *Environmental Assessment Guidelines* document (EA Guidelines), including draft statements of scope, for the approval of the Commission. The EA Guidelines also contain recommendations and instructions for the structure and methods to be used in completing the environmental assessment, including for the conduct of further public and stakeholder consultations. The proposed EA Guidelines were attached as Appendix A to CMD 03-H35 and subsequently revised by CNSC staff as presented in Appendix A to CMD 03-H35.A.

Issues:

In considering the EA Guidelines, the Commission was required to decide, pursuant to subsections 15(1) and 16(3) of the CEAA:

- a) the *scope of the project* in relation to which the environmental assessment is to be conducted; and
- b) the *scope of the factors* to be taken into consideration in the conduct of the environmental assessment.

¹ In this *Record of Proceedings*, the *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal component.

The Commission also considered whether, at this time, it would request the federal Minister of the Environment, pursuant to section 25 of the CEAA, to refer the project to a mediator or a review panel.

Public Hearing:

The Commission, in making its decision, considered information presented for a public hearing held on November 27, 2003 in Ottawa, Ontario. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*. During the public hearing, the Commission received written submissions and heard oral presentations from CNSC staff (CMD 03-H35 and CMD 03-35.A), the proponent (CMD 03-H35.1) and intervenors (see Appendix A for the list of intervenors and related document references).

2. Decision

Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*,

the Canadian Nuclear Safety Commission, pursuant to sections 15 and 16 of the CEAA, approves the *Environmental Assessment (EA) Guidelines (Scope of Project & Assessment): Environmental Assessment of the Project Proposal for SEU and BDU Blending, and Scrap Recovery at Cameco's Port Hope Conversion Facility, Port Hope, Ontario* as set out in Appendix A of CMD 03-H35.A, as modified below.

The Commission also decides that, at this time, the project does not warrant a referral, pursuant to section 25 of the CEAA, to the federal Minister of Environment for his referral to a mediator or a review panel.

The Commission makes the following changes to the draft EA Guidelines appended to CMD 03-H35.A:

- As proposed by CNSC staff during the hearing, the sentence in section 9.2.2 under the subheading "Local Study Area" that reads as:

"It includes the facilities, buildings and infrastructure at Cameco's Port Hope Facility site, including the licensed exclusion zone for the site on land and within Lake Ontario",

is modified to read as:

"It includes the facilities, buildings and infrastructure at Cameco's Port Hope licensed facility site."

- The following sentence in section 9.2.2, under the subheading “Regional Study Area”, is deleted:

“To identify cumulative effects resulting from the end uses of the product, the regional study area will include the site of the reactor using the fuel.”

The reasons for these modifications are discussed in the relevant sections of this *Record of Proceedings*.

3. Issues and Commission Findings

3.1 Application of CEAA to the Proposal

CNSC staff explained that the CEAA requires that an EA be completed if there is both a prescribed action by a federal authority (commonly referred to as a “trigger”) and a “project”. In this case, the “trigger” prescribed in the *CEAA Law List Regulations* is the need for the Commission to amend a licence to allow the project to proceed. The “project” is the proposed installation and operation of the facilities for the blending and handling of SEU and BDU, and processing of scrap at Cameco’s facility in Port Hope (the blending facilities). Furthermore, CNSC staff noted that the project is not of a type that is listed in the *CEAA Exclusion List Regulations* and hence an EA pursuant to the CEAA is required.

The Commission concurs with CNSC staff’s interpretation of the application of the CEAA to the proposed undertaking and, therefore, concludes that an EA of the proposed project under the CEAA is required.

3.2 Type of Environmental Assessment Required

3.2.1 Screening vs. Comprehensive Study

CNSC staff explained that because the project is not of a type described in the *CEAA Comprehensive Study List Regulations*, a “screening” environmental assessment must be conducted, and a *Screening Report* prepared in accordance with subsection 18(1) of the CEAA. CNSC staff explained that it would prepare the Screening Report using the results of environmental assessment studies delegated to the proponent pursuant to subsection 17(1) of the CEAA and carried out in accordance with the approved EA Guidelines.

3.2.2 Screening vs. Review Panel or Mediator

As an alternative to a screening EA, the Commission may, pursuant to section 25 of the CEAA, request the federal Minister of the Environment to refer the project to a review panel or mediator appointed by the Minister. The Commission may request such a referral following, or at any time during the conduct of the environmental assessment.

CNSC staff indicated that, at this time, it has not identified any potential environmental effects or public concerns associated with the project that, in its view, cannot be adequately addressed in the screening EA. Therefore, CNSC staff did not recommend that the Commission refer the project to a mediator or review panel.

Four intervenors, including the Port Hope Community Health Concerns Committee, the Citizens for Renewable Energy, P. Lawson and the Lake Ontario Waterkeeper, disagreed with CNSC staff's recommendation on this option and requested that the Commission immediately refer the project to a review panel to be appointed by the Minister.

These intervenors expressed various reasons for why they believe a review panel is necessary in this case. Those reasons include: a lack of confidence in the Commission's ability to carry out an objective and independent assessment; a desire to obtain intervenor funding available through the CEAA review panel process (i.e., to conduct parallel expert analyses); a concern that a screening level assessment would be unable to address the complexities of the project; and a general belief that a review panel appointed by the Minister would be able to examine a broader range of issues.

The Commission considered these interventions and was not persuaded that a review panel is needed in order to address the issues raised. The Commission is satisfied that the proposed screening EA process can facilitate a complete, legitimate and fair public participation in the environmental assessment of the project. The Commission notes that it is an independent regulatory tribunal. The Commission also was not persuaded that the funding of parallel studies is necessary for this assessment. The Commission is satisfied that the proposed public consultation opportunities (discussed further in section 3.7.4 below), and the involvement of expert reviewers from within CNSC staff, Environment Canada, Health Canada, Natural Resources Canada, and Fisheries and Oceans Canada, will ensure the assessment studies are carried out in a complete and balanced manner.

The Commission is also satisfied that the proposed scope of the screening assessment includes all of the broad and complex issues that the above-noted intervenors identified as reasons for requesting a review panel. For example, the Commission notes that the proposed scope of the screening assessment includes: an examination of the need for, and purpose of, the project; the incremental effects of handling and using SEU at other facilities; the effects of accidents and malfunctions that may occur; and the cumulative environmental effects of the project in combination with past, present and future projects in the potentially affected areas, including with respect to human health. Section 3.6 contains a further discussion of the Commission's findings with respect to the scope of the assessment.

The Commission further notes that if, during the assessment, significant or uncertain environmental effects are apparent, or if the public concerns about the project cannot be reasonably addressed by the Commission in the screening EA process, the Commission may reconsider requesting the Minister of the Environment to refer the project to a review panel or mediator as appropriate.

Based on these considerations, the Commission decides that, at this time, it will not refer the project to the Minister of the Environment for referral to a review panel or mediator. The Commission requests that CNSC staff inform the Commission of any significant issues or public concerns arising during the conduct of the environmental assessment that cannot be adequately addressed through the screening process and which may justify such a referral. In this regard, CNSC staff may inform and make recommendations to the Commission at any regularly scheduled Commission meeting, or directly through the Secretary of the Commission.

3.2.3 Conclusion on the Type of Environmental Assessment Required

The Commission concludes therefore that a *screening* EA of the proposed project will be carried out unless otherwise directed by the Commission during the course of the EA.

3.3 Delegation of the EA Studies and Consultation Activities to Cameco

As noted above, CNSC staff reported that it would, pursuant to subsection 17(1) of the CEAA, delegate to Cameco the conduct of technical support studies for the EA, as well as a public consultation program and preparation of an EA study report.

Three intervenors (Port Hope Community Health Concerns Committee, Citizens for Renewable Energy, and P. Lawson) expressed concern that, as a result of this delegation of work to the proponent, the resulting studies may, in their view, lack independence and objectivity. Citizens for Renewable Energy and P. Lawson expressed particular concern about the delegation of the public consultation activities to the proponent and recommended that the CNSC carry out the public consultation aspects of the EA.

The Commission considered these interventions and is satisfied that the delegation of the EA tasks to Cameco is proper and in accordance with the provisions of the CEAA. The Commission considers it important that Cameco, who has a detailed technical knowledge of its facilities, and who forms a part of the community in which it operates, be directly engaged in the technical and consultative aspects of the EA. As noted in the foregoing discussion, the Commission is satisfied with CNSC staff's assurances that there will be sufficient public and independent expert scrutiny of the work carried out by Cameco to ensure the resulting information that comes before the Commission for a decision will be complete and appropriately balanced.

With respect to the role of the CNSC in public consultation, the Commission notes that the CNSC has been, and will continue to be, directly engaged in consulting the public on this environmental assessment. For example, CNSC staff consulted directly with the public on the draft EA Guidelines. The public was also able to express its views directly to the Commission during this public hearing, and will similarly be able to participate in a future public hearing on the completed Screening Report. The Commission's findings on the proposed consultation plan that forms part of the work delegated to Cameco are discussed further in section 3.7.4 of this *Record of Proceedings*.

In conclusion, the Commission is satisfied with the extent and type of work that would be delegated to Cameco for the purpose of this EA.

3.4 Consultations on the Draft EA Guidelines

Prior to the hearing, CNSC staff consulted with the public and other stakeholders in the preparation of the proposed draft EA Guidelines. The Commission considered the adequacy of these consultations as part of its consideration of the appropriateness of the proposed EA Guidelines, and of whether the public and other stakeholders have had an adequate opportunity to become informed, and express any concerns about the EA to this point in the process.

CNSC staff explained that, in accordance with the CEAA *Federal Coordination Regulations*, CNSC staff has consulted on the draft EA Guidelines, and will continue to consult during the EA, with the following federal departments: Fisheries and Oceans Canada; Environment Canada; Health Canada; and Natural Resources Canada. CNSC staff also noted that the environmental assessment was registered on the CEAA Federal Environmental Assessment Index, that a public registry of documents was created, and that a draft of the EA Guidelines was made available for public comment during the period of August 19, 2003 to September 12, 2003. A notice of the public review of the draft document was placed on the CNSC web site. Furthermore, copies of the draft EA Guidelines were placed in local libraries and mailed directly to several individuals and groups in the Port Hope area that have been active in previous CNSC proceedings for nuclear facilities in the area. CNSC staff reported that, at the suggestion of a Port Hope resident, the distribution of the draft EA Guidelines was expanded to a number of public interest groups outside the project area. The comments received from the above review are summarized in Appendix B to CMD 03-35, including information on how CNSC staff addressed each comment in the preparation of the EA Guidelines that are the subject of this hearing.

CNSC staff reported that, while the public did not comment on the draft EA Guidelines during the above-described review period, CNSC staff has responded to the comments raised by the public in the interventions to this hearing. To address the intervenors' comments, CNSC staff proposed several modifications to the EA Guidelines. The specific modifications are described in CNSC staff's supplementary information to the hearing (CMD 03-35.A).

Cameco added that it has also been actively discussing the project in the community since the project was first identified in August 2002. This included periodic information update briefings to the municipality and various committees of council. Cameco also reported that it posted information on its web site and distributed up-to-date project information to local interest groups, First Nations, the local public library, and the media. In addition, Cameco stated that it sent an information brochure and notice of public open house on the project to every residence in the Town of Port Hope.

With respect to the government consultation described above, and noting that Low Enriched Uranium (LEU) and SEU will ultimately need to be moved to and from the site respectively if the project proceeds, the Commission questioned CNSC staff as to why Transport Canada was not identified as a federal reviewer for the EA. In response, CNSC staff explained that, while

Transport Canada did not self-identify as an expert federal authority for this specific assessment pursuant to the *CEAA Federal Coordination Regulations*, the CNSC and Transport Canada collaborate continuously in the regulation of radioactive material shipments in Canada. Furthermore, CNSC staff noted that, except for the route between the proposed blending facilities and Zircatec Precision Industries (Zircatec) in the Town of Port Hope (identified as the initial fabricator of the new fuel bundles), transportation of the radioactive materials on specific roadways is not proposed for inclusion in the scope of the assessment. See section 3.5.2 and 3.6.3 for further discussion of the scope of the project and assessment with respect to transportation. CNSC staff further noted that the expert views of Transport Canada on the EA will continue to be sought by CNSC staff during the course of the EA.

The Commission also sought clarification from CNSC staff on the potential roles of the Ontario Ministry of the Environment and Emergency Management Ontario in the EA. In response, CNSC staff noted that, while the Ontario's environmental assessment process is not triggered for this project, CNSC staff will continue to inform the relevant departments of the Province of Ontario about the EA and seek technical input where applicable.

In response to a question from the Commission as to whether there is a specific role for Atomic Energy of Canada Limited (AECL) in the EA, CNSC staff explained that, while AECL is the designer of the CANFLEX fuel bundle that would ultimately contain the new fuel for use, AECL is not a proponent for, or part of, the project.

Based on this information, the Commission is satisfied that the public and other stakeholders have had sufficient opportunity to become informed about, and provide input on, the draft EA Guidelines. As noted above in section 3.2.2, the Commission is also satisfied that the public concerns expressed to date can be addressed in the screening assessment and do not warrant a referral of the project to the Minister of the Environment for referral to a review panel or mediator.

The Commission notes that the public and other stakeholders will continue to be consulted during the conduct of the EA and will have a further opportunity to provide comments on the results of the EA when the matter comes before the Commission for a decision at a future public hearing. Noting that no comments from the public were received during the initial review of the draft EA Guidelines, the Commission encourages the public to become engaged as early as possible in the process and to take advantage of the various consultation opportunities that will be provided as the assessment proceeds. The Commission welcomes and encourages the public to intervene at its public hearings; however, the Commission notes that this is only one of several possible avenues for effective public participation. The Commission's findings on the adequacy of the planned public consultation activities are discussed further in section 3.7.4 below.

3.5 The Scope of the Project

3.5.1 General

“Scope” under the CEAA is expressed in two parts: the *scope of the project* (i.e., the physical works and activities proposed); and the *scope of the assessment* (i.e., the scope of the factors to be considered in assessing the effects of the project). This section addresses the issues relating to the *scope of the project*. The issues related to the *scope of the assessment* are considered in section 3.6 of this *Record of Proceedings*.

CNSC staff explained how the CEAA requires the responsible authority, pursuant to section 15 of the CEAA, to systematically identify the *scope of the project*. This begins with the identification of the *principal project* that is the subject of the prescribed trigger - in this case the proposed construction and operation of the blending facilities at the site of Cameco’s uranium conversion facility in the Town of Port Hope, Ontario. CNSC staff then explained how the CEAA requires that other physical activities directly related to the principal project be considered for inclusion in the *scope of the project*.

In summary, CNSC staff recommended that the Commission identify the project as including:

- preparation of an existing building to receive new equipment, including the rerouting of steam and water pipes out of the SEU blending area and construction of walls between the blending and other operations;
- installation of blending circuits, including the drum elevator, drum and pail dumping stations, hoppers, blenders, packaging stations and baghouses;
- installation of the wet and dry scrap recovery circuits;
- installation of separate heating, ventilation and air conditioning systems;
- construction of receiving and storage, weighing and de-lidding facilities for feed material;
- construction of warehousing, packaging and shipping facilities for product;
- construction of storage and packaging areas for scrap; and
- operation and maintenance of the blending and scrap recovery facilities, including radiation, security and criticality monitoring, inspection and maintenance.

3.5.2 Off-site Uranium Transportation, Fabrication and Use

Three intervenors (A. Johncox, Concerned Citizens of Renfrew County, and Port Hope Nuclear Environmental Watchdogs) expressed the view that the project scope proposed by CNSC staff is too narrow. They recommended that the environmental assessment look beyond the blending facilities and include the potential environmental effects of its subsequent transport, handling, use in reactors, and long-term disposal. A. Johncox expressed the view that the safety case and acceptability of the new fuel design and its use in existing and proposed advanced reactor designs should be demonstrated before the Commission considers the proposed SEU blending process at Cameco.

CNSC staff, in its supplementary information for the hearing, acknowledged the legitimate interest of the intervenors and other stakeholders in the incremental effects of the handling and use of SEU at other facilities. CNSC staff stated that, while including those aspects in the project scope would not be appropriate based on its interpretation of the CEAA, adding them as factors in the *scope of the assessment* would be appropriate. CNSC staff, therefore, in its supplementary information to the hearing, proposed four changes to the sections of the EA Guidelines that address the *scope of the assessment*. The *scope of the assessment* is discussed further in section 3.6 below.

The Commission examined CNSC staff, Cameco and other participants with respect to their views on whether, and to what extent, the off-site transportation, manufacturing and use of the raw materials and blended products should be included in the *scope of the project*, as opposed to the *scope of the assessment*, as proposed by CNSC staff.

Based on the information provided, the Commission concluded that because the sources of the LEU and other raw materials, and the subsequent facilities for the fabrication and use of the SEU fuels, may vary depending on market conditions (and thus could only be considered on a generic or non-site specific basis), the transport routes and locations of those other activities cannot reasonably be considered part of, or directly linked to, the principal project such that the whole system may be considered under the requirements of the CEAA as a single project.

Similarly, while acknowledging that the overall SEU fuel system envisioned may consist of several separate projects, the Commission does not consider that those projects and the proposed blending facilities at Cameco are sufficiently interdependent, linked or proximate to warrant the inclusion of the off-site activities within a multi-project EA under the CEAA. Further in this respect, CNSC staff informed the Commission that the off-site fuel fabrication activities either have had environmental assessments conducted under the CEAA (as in the case of Zircatec in Port Hope), or EAs under the CEAA would be required at those facilities prior to any consideration of their licensing by the CNSC. Similarly, the Commission understands from the statements of CNSC staff that proposed projects for using the new fuel at reactor sites would require consideration of separate environmental assessments under the CEAA. The Commission is also satisfied with CNSC staff's explanation that the transportation of LEU to the site, and SEU products from the site, including any related export or import licensing, falls under a strict regulatory regime, including the completion of environmental assessment under the CEAA where applicable.

The Commission acknowledges the above-noted intervenors' desire to view the undertaking as a larger system of inputs and outputs. The Commission concludes, however, that this can and should be done to a reasonable extent within the context of this EA, but without having to include all of the possible components of the system in the scope of the "project" as this term is interpreted under the CEAA. The Commission concludes therefore that a consideration of the incremental environmental effect of handling and using SEU will be included in the *scope of the assessment*, rather than the *scope of the project*. See section 3.6 below for a further discussion of the *scope of the assessment*.

In response to the comment made by A. Johncox about what he views as the logical order of the various project assessments, the Commission, following its questioning of Cameco on this point, is satisfied that Cameco understands the commercial risk it is taking in proceeding with the assessment of the blending facilities at this time. The Commission is also satisfied that Cameco understands that any EA decision on the blending facilities will in no way prejudice the decisions that the CNSC may make on other components of the envisioned SEU fuel system. Cameco stated that it would await firm commercial arrangements before installing the equipment at the proposed blending facilities.

3.5.3 Quantities of SEU Involved in the Project

In their interventions, P. Lawson and Concerned Citizens of Renfrew County noted that, from Cameco's project description, there appears to be no limit on the amount of SEU that Cameco could produce in response to market demands.

In response to a question from the Commission on this point, CNSC staff noted that, if the project proceeds, Cameco would remain constrained by the current maximum annual uranium dioxide production limit at the Port Hope Conversion Facility (i.e., 2,800 tonnes per year).

While the Commission accepts this as an overall limit, the Commission anticipates that the proposed discussion of the purpose, need for, and description of the project in the scope of the EA (see section 3.6.2 below) will provide more precise assumptions about the potential size and throughput of the blending facilities to be constructed. The Commission considers that such assumptions will be important for the purpose of assessing the environmental effects of the project.

3.5.4 Conclusion on the Scope of the Project

Based on its consideration of the matter, including a review of the CEAA requirements and the views of the proponent, CNSC staff and intervenors at the hearing, the Commission approves the definition of the project scope as set out in the EA Guidelines attached to CMD 03-H35.A.

3.6 Scope of the Assessment

3.6.1 General

The second part of "scope" under the CEAA (the *scope of the project* being the first part) is the *scope of the assessment* – otherwise described in the CEAA as the scope of the factors that will be considered in assessing the environmental effects of the project.

CNSC staff explained that the scope of a screening assessment under the CEAA must be determined by the Commission pursuant to subsection 16(3) of the CEAA, and include the factors set out in paragraphs 16(1)(a) to (d) of the CEAA. Other factors may be included at the discretion of the Commission under paragraph 16(1)(e) of the CEAA.

CNSC staff summarized the mandatory factors in subsection 16(1) of the CEAA as: the environmental effects of the project, including as may be caused by malfunctions or accidents and any cumulative environmental effects with other projects; the significance of the environmental effects; comments from the public; and measures that are technically and economically feasible that would mitigate any significant adverse environmental effects of the project.

In addition to these factors, CNSC staff recommended that the Commission include, pursuant to paragraph 16(1)(e), the following factors: the purpose of the project; the need for the project and the benefits of the project; and the need for, and requirements of a follow-up program in respect of the project.

3.6.2 Purpose, Need and Benefits of the Project

In its supplementary information for the hearing, and to address the concerns of intervenors discussed above in section 3.5.2 (i.e., concerning the assessment of the incremental environmental effects of using SEU), CNSC staff recommended that the description of the factors related to the purpose, need for, and benefits of the project be expanded in the EA Guidelines to include a discussion of the end-use of the products, including the fabrication and use of fuel bundles.

The Commission also noted the interventions by Citizens for Renewable Energy and the Lake Ontario Waterkeeper concerning the importance they place on including an examination of “need for the project” in the EA.

In order to ensure there is a common understanding of this factor among all parties and stakeholders involved in the assessment, the Commission sought further clarification from CNSC staff on the precise meaning of the terms “purpose, need and benefits” in the context of the scope of this EA.

In response, CNSC staff explained that it interprets these factors in accordance with the relevant published guidance from the Canadian Environmental Assessment Agency. CNSC staff noted that, based on that guidance, it interprets “need” as the problem or opportunity the project is intending to solve or satisfy. The related factor of “purpose” is defined as what would be achieved by carrying out the project; or, in other words, how the project would respond to the need that has been identified. CNSC staff explained that, according to the CEAA guidance, “need” is to be established in an EA from the perspective of the proponent; it is not to be examined from the perspective of the federal government, the public or other stakeholders. In this case, therefore, the “need” is to satisfy a market demand for enriched uranium fuel, and does not, for example, extend into a discussion of energy policy. The EA will include a description of the market demand and a discussion of how that need would be met by carrying out the project. In response to a follow-up question from the Commission on this subject, Cameco indicated its understanding of, and agreement with, CNSC staff’s interpretation of this assessment factor.

The Commission concurs with the above-described interpretation of the meaning of the assessment factors relating to the purpose, need for, and benefits of the project.

3.6.3 Effects of Malfunctions and Accidents:

The Commission notes the interventions from Concerned Citizens of Renfrew County, Mr. and Mrs. Haskill, Port Hope Nuclear Environmental Watchdogs, Citizens for Renewable Energy, and the Port Hope Community Health Concerns Committee concerning the proposed assessment of malfunctions and accidents. These intervenors are of the view that the assessment should address the effects of criticality accidents (i.e., involving an uncontrolled nuclear fission reaction involving low or slightly enriched uranium), the potential effects of a train derailment on the adjacent main freight rail line, and of spills of contaminants into Lake Ontario and along transportation routes. In raising these issues, the intervenors identified the need to consider security issues (e.g., risk of terrorism), and the immediate proximity of the proposed production facility to Lake Ontario and residential areas. Specifically with respect to criticality accidents, Port Hope Nuclear Environmental Watchdogs sought clarification on what could happen if the enriched uranium powder were to become wet as a result of extreme weather or a storm surge flooding the site from the lake.

The Commission, acknowledging that the types of events identified by the intervenors are likely to be the most important environmental issues related to the proposed project, questioned CNSC staff as to why greater and more specific emphasis had not been placed on these issues in the EA Guidelines document.

In response to these questions, CNSC staff explained that it prepares EA Guidelines to set the appropriate boundaries for study without prejudging the importance of the issues or outcome of the assessment. CNSC staff stated that the EA Guidelines should only set out pointers for the study and that the issues and their relative importance should evolve during the conduct of the EA itself. CNSC staff further noted that the EA Guidelines, as proposed, identify the need to consider the environmental effects of accidents and malfunctions, including, but not limited to, those related to criticality events that may occur in relation to the project. CNSC staff further noted that the EA Guidelines also identify that the physical security of the site must be addressed in the EA (excluding prescribed information). The Commission is satisfied with this response by CNSC staff. For clarity, however, the Commission notes that the scope of this factor will also include accidents that may occur in the transport of the products to Zircatec in Port Hope, and, in a generic way, during the transport of LEU to the blending facilities, and during the transport and use of the fuel following its manufacture. The Commission also understands that accidents and malfunctions at the blending facilities that could be caused by external activities, such as train derailments or natural phenomena (e.g., severe weather, flooding, earthquake, etc) will be included.

Cameco acknowledged the importance of the issues raised by the Commission and intervenors in respect of accidents and malfunctions and that appropriate attention will be given to this factor in the EA. In particular, Cameco noted that the need for security and to exclude water from the enriched uranium from all sources and under all circumstances (including during emergency response) are central factors in the facility design. Cameco noted that much experience exists world-wide to assist in this regard.

In response to follow-up questions from the Commission on the potential for natural flooding of the site, Cameco reported that detailed hydrologic studies have indicated that flooding from Lake Ontario and/or the Ganaraska River will not pose a threat to the blending facility. In addition, Cameco noted that the detailed design of the facility, including the specifics on the location and elevation of the enriched uranium handling and storage vessels in the structure, has not yet been finalized.

Based on this information, the Commission is satisfied that the proposed scope of the assessment will ensure that an appropriate range of accidents and malfunctions is addressed. The Commission is satisfied that CNSC staff and Cameco have taken note of the specific types of potential accident initiators identified above and the high level of interest that the Commission and the public will place on this factor when reviewing the Screening Report at a later date.

3.6.4 Cumulative Health Effects of the Project

The Commission heard from a number of intervenors (including: Citizens for Renewable Energy; Port Hope Community Health Concerns Committee; P. Lawson; Lake Ontario Waterkeeper; Mr. and Mrs. Haskill; Port Hope Nuclear Environmental Watchdogs; and A. Johncox) about a concern for, and desire to have included in the EA, a thorough examination of the cumulative health effects on area residents from the project, together with the effects of past and current nuclear facility operations in Port Hope. The Port Hope Community Health Concerns Committee and P. Lawson expressed their dissatisfaction with the government's past efforts to study the long-term health effects from historic radioactive contamination in the area, and with how the past recommendations of the local citizens on the design of the previous health studies were, in their view, inappropriately represented by CNSC staff and discarded by the government in general. These intervenors requested that a comprehensive health study be done to their satisfaction in the current EA.

Further in this regard, P. Lawson expressed her understanding that the CNSC is tolerating a level of radiation exposure for the people of Port Hope that is higher than that received by the people living in the vicinity of other major nuclear facilities in Ontario. In this regard, P. Lawson expressed the view that the Derived Release Limits for the Cameco facility may not properly account for the existing high background levels in the Port Hope area and that the residents of Port Hope are therefore subjected to unacceptable health risks.

In response to related questions from the Commission about how the release limits were derived for the Cameco facilities in Port Hope, CNSC staff explained that this is done using a conservative, multi-pathway exposure analysis that takes into account the contaminant monitoring data from various media and food sources in the affected area (e.g., air, water, vegetables and fish). CNSC staff stated that historic contamination in those exposure pathways is taken into account and that a conservative public dose limit of 0.3 mSv/year, rather than the regulatory public dose limit of 1.0 mSv/year, is used in calculating the emission limits and action levels for the facility. Furthermore, and in response to specific questions raised in the intervention from A. Johncox about the adequacy of the current emissions monitoring, CNSC staff reported that all emissions and effluents from the facility are, and will continue to be,

closely monitored and scrutinized by CNSC staff, both for the purpose of this EA, and as part of its regulatory compliance activities.

The Commission, acknowledging the concerns of some of the intervenors with respect to the health effects from the long legacy of radioactive contamination in this community, questioned CNSC staff about the apparent low prominence given to this issue in the draft EA Guidelines. In response, CNSC staff stated that the scope of the assessment, as proposed, includes a requirement to assess the cumulative environmental effects of the project together with past, current and planned future projects in the area. CNSC staff is of the view that this should address the concerns of the intervenors to a degree reasonable in this assessment. With respect to the portrayal of those issues in the EA Guideline document, CNSC staff, as noted above in section 3.6.3, explained that the EA Guidelines are intended to set the boundaries of the study without prejudging the issues, and that the resulting EA should establish the relative prominence and significance of the direct and cumulative effects. The Commission accepts this explanation and therefore does not require a modification to the statements of scope in the draft EA Guidelines to address this issue. The Commission, however, wishes to stress that the EA will need to clearly and explicitly recognize and account for (as quantitatively as possible) the contribution from the existing environmental contamination from past projects in the assessment of cumulative effects.

Further with respect to the intervenors' request for comprehensive health studies in the area, CNSC staff stated that the health of Cameco's employees and the public is acknowledged as an assessment factor in the EA Guidelines. CNSC staff expressed the view that it would not be appropriate to require an environmental assessment of a specific planned project to include new comprehensive health studies related to historical activities. The Commission accepts this position and does not require that a comprehensive health study be included in the scope of this EA. The Commission, however, expects that all relevant existing information on health effects be taken into account in the current project-specific EA.

3.6.5 Follow-up Program

The Citizens for Renewable Energy, in its intervention, stated that there should be no discussion of a follow-up program in the EA as it would, in this intervenor's view, prejudice the outcome of the EA decision.

The Commission was not persuaded by this argument and reaffirms that CNSC staff should make recommendations in the Screening Report on the need for, and, as appropriate, the measures to be included in a follow-up program. The inclusion of CNSC staff recommendations on a follow-up program in the Screening Report will not in any way prejudice the Commission's consideration of, and decision on, the significance of the environmental effects of the project. The Commission also notes that the requirement includes an assessment of the "need for" follow-up and therefore CNSC staff would presumably not identify such a need if it recommends in the Screening Report that the project not proceed to licensing.

3.7 Environmental Assessment Structure and Method

3.7.1 General

The draft EA Guidelines, in addition to containing statements describing the scope of the project and scope of the assessment (as addressed respectively in sections 3.5 and 3.6 of this *Record of Proceedings*), contain instructions relating to the structured approach and method to be used in conducting the environmental assessment. Therefore, in its consideration of the acceptability of the draft EA Guidelines document, the Commission also considered, and made decisions on, the recommended structure and methods for the assessment described therein.

Referring to the draft EA Guidelines attached as Appendix A to CMD 03-H35.A, CNSC staff outlined the proposed structure and methods for completing the environmental assessment studies and Screening Report. This includes instructions for describing: the project; the spatial and temporal boundaries of the assessment; the existing environment; the assessment and mitigation of environmental effects, including effects of the environment on the project and the incremental effects of the end-uses of the products; the assessment of cumulative effects; the significance of residual effects (post-mitigation); the conduct of stakeholder consultations throughout the assessment; and the design and implementation of a follow-up program.

3.7.2 Study Areas

In its presentation to the Commission at the public hearing, CNSC staff proposed a change to the definition of the local study area as drafted in section 9.2.2 of the EA Guidelines. CNSC staff proposed that the second sentence of that definition be revised to read as, “*It includes the facilities, buildings and infrastructure at Cameco’s Port Hope licensed facility site*”. CNSC staff explained that the original wording, that refers to a licensed exclusion zone, was in error; no such exclusion zone exists at this facility. The Commission accepts this modification.

Further with respect to the study areas for the EA, the Commission notes the recommendations of the Citizens for Renewable Energy and the Lake Ontario Waterkeeper. These intervenors, based on their review of the initial draft EA Guidelines, requested that the study areas be expanded from the areas immediately surrounding the proposed blending facilities, to include the areas potentially affected by the subsequent handling, transport and use of the SEU.

In this regard, and as discussed in section 3.5.2 above, CNSC staff acknowledged that adding an assessment of the incremental effects of using the SEU to the EA is warranted. CNSC staff therefore proposed in its supplementary information to the hearing (CMD 03-H35.A), a number of changes to the draft EA Guidelines to accommodate this factor. One of the CNSC staff’s recommended changes was to modify the description of the Regional Study Area for the assessment (in section 9.2.2 of the draft EA Guidelines) to include “*the site of the reactor using the fuel*”.

The Commission questioned CNSC staff on the rationale for, and appropriateness of this addition to the definition of the regional study area. As discussed in section 3.5.2 above, the Commission

established through its questioning of CNSC staff and Cameco that, while Bruce Power has been identified in the project information as the likely initial customer for the new SEU fuel, the planned assessment of the incremental environmental effects of that fuel use would be generic and not specific to the Bruce Nuclear Generating Station site. CNSC staff reiterated this in its response to the Commission's questions on the proposed modification of the regional study area.

The Commission considered CNSC staff's proposed revision to the regional study area definition and concluded that it is not necessary or appropriate to define a specific geographic study area for an assessment factor that will be considered at a generic or conceptual level. The Commission is satisfied that the generic assessment of incremental effects of using the fuel will involve a similarly theoretical or generic description of the likely breadth of the effects in a typical reactor facility setting without the need to specify a specific geographic study area. Furthermore, for the purpose of assessing cumulative effects, the Commission notes that the transportation route to, and site of, the initial fuel fabrication activities at Zircatec in Port Hope already fall within the previously defined regional study area for the principal blending facility project.

While the Commission appreciates both the intervenors' desire to assess the broader effects of the new fuel cycle and the CNSC staff's intent in proposing the modification to the regional study area, the Commission considers that the resulting mix of specific and generic aspects of the EA in the context of the geographic study area could lead to unnecessary confusion and expectations about the nature of the incremental effects assessment part of the EA. The Commission was therefore not persuaded that the scope of the regional study area needs to be expanded to achieve the appropriate boundaries of the assessment for this purpose. The Commission, therefore, decides to remove the following sentence of the regional study area definition in the draft EA Guidelines appended to CMD 03-35.A:

“To identify cumulative effects resulting from the end uses of the product, the regional study area will include the site of the reactor using the fuel.”

With the above modifications, the Commission is satisfied with the study area definitions proposed.

3.7.3 Data Sources for Cumulative Effects Assessment

With respect to how the cumulative effects assessment will be carried out, the Commission questioned CNSC staff on how the soil contamination monitoring data previously collected by the Ontario Ministry of the Environment (OMOE) will be used. In response, CNSC staff stated that all relevant information will be included in the assessment. With respect to the above-referenced soil monitoring study by the OMOE, CNSC staff reported that the results were found to be not statistically valid and that OMOE terminated the study. CNSC staff added, however, that much useful modelling work was completed by the OMOE for the purpose of developing uranium-in-air standards, and that the CNSC subsequently initiated a separate, two-year research project on uranium accumulation in the soils surrounding the Cameco Conversion Facility in Port Hope (now nearing completion). CNSC staff stated that the revised modelling methods, the

results of the recent CNSC research, and any other relevant data from the OMOE and Low-level Radioactive Waste Management Office, will be used in the EA.

Based on this information, the Commission is satisfied with how existing environmental information will be used in the assessment of cumulative effects.

3.7.4 Public and Other Stakeholder Consultation During the EA

With respect to the proposed methods for consulting with the public and other stakeholders during the assessment, CNSC staff informed the Commission that the assessment will include notification of, and consultation with, the potentially affected stakeholders. Various media will be used to inform and engage individuals, interest groups, local governments, and other stakeholders in the assessment. Cameco will be expected to hold appropriate public consultation events in accordance with the general framework set out in the EA Guidelines.

With respect to intervenors' comments on the consultation strategy, the Commission noted and agrees with the statements in the intervention from the Lake Ontario Waterkeeper that the public should have a role in the selection of Valued Ecosystem Components (VECs) to be used in the analysis. In response to the Commission's questions on this aspect of the EA method, CNSC staff acknowledged that public involvement in the selection of VECs is an important part of the assessment and that it would be specifically looking to ensure this occurs early in the implementation of Cameco's consultation program.

The Commission also concurs with the recommendation of Port Hope Nuclear Environmental Watchdogs concerning the need to consult with the public on the potential for any incremental environmental effects related to the use of SEU in Canadian reactors. The Commission, however, is of the view that the EA Guidelines, as presented, will provide for this input without the need for further modification.

In response to a related question from the Citizens for Renewable Energy on whether there would be consultation events in the immediate vicinity of the Bruce NGS, the Commission notes that no interested public would be prohibited from obtaining information and commenting on the EA, regardless of where they live. However, given that the assessment of the incremental effects of the fuel use will be done on a generic, rather than site-specific basis, the Commission would not expect the proponent to provide the same types of opportunities for consultation outside the defined project study areas for this EA. As noted above, the Commission understands that, should an application be received to use SEU fuel at a power reactor site, a separate, site-specific EA of that use, including site-specific public consultations, will be required under the CEEA.

3.7.5 Conclusions on the Environmental Assessment Structure and Method

Based on the information presented, the Commission is satisfied that the general structure, methods, and other instructions for conducting the environmental assessment and consultation with the public, as described in the draft EA Guidelines attached to CMD 03-H35.A, are adequate. The Commission requests that CNSC staff closely monitor the conduct of the EA studies to ensure that the studies are being carried out in accordance with the EA Guidelines.

4. Conclusion

The Commission has considered the information and submissions of the CNSC staff and Cameco Corporation as presented in the material available for reference on the record, as well as the oral and written submissions made by intervenors at the hearing.

The Commission, in making its decisions pursuant to sections 15 and 16 of the CEAA, approves the *Environmental Assessment (EA) Guidelines (Scope of Project & Assessment): Environmental Assessment of the Project Proposal for SEU and BDU Blending, and Scrap Recovery at Cameco's Port Hope Conversion Facility, Port Hope, Ontario* as set out in Appendix A of CMD 03-H35.A, modified as follows:

- As proposed by CNSC staff during the hearing, the sentence in section 9.2.2 under the subheading "Local Study Area" that reads as:

"It includes the facilities, buildings and infrastructure at Cameco's Port Hope Facility site, including the licensed exclusion zone for the site on land and within Lake Ontario",

is modified to read as:

"It includes the facilities, buildings and infrastructure at Cameco's Port Hope licensed facility site."

- The following sentence in section 9.2.2, under the subheading "Regional Study Area", is deleted:

"To identify cumulative effects resulting from the end uses of the product, the regional study area will include the site of the reactor using the fuel."

The Commission also decides that, at this time, it will not refer the project, pursuant to section 25 of the CEAA, to the federal Minister of Environment for his referral to a mediator or a review panel.

The Commission requests CNSC staff to closely monitor the conduct of the technical assessment studies and stakeholder consultation activities and report to the Commission on any issues that could justify the Commission giving further consideration to a referral of the project to the Minister of the Environment, or for amending the scope of the project or assessment.

Marc A. Leblanc
Secretary,
Canadian Nuclear Safety Commission

Date of decision: November 27, 2003

Date of release of Reasons for Decision: January 8, 2004

Appendix A

Intervenors	Document Number
Zircatec Precision Industries Inc., represented by L. Jones	CMD03-H35.2
A. Johncox	CMD 03-H35.3 CMD 03-H35.3A CMD 03-H35.3B
Port Hope Community Health Concerns Committee, represented by F. More	CMD 03-H35.4 CMD 03-H35.4A
Concerned Citizens of Renfrew County and Area	CMD 03-H35.5
Citizens for Renewable Energy, represented by Z. Kleinau	CMD 03-H35.6 CMD 03-H35.6A
P. Lawson	CMD 03-H35.7 CMD 03-H35.7A CMD 03-H35.7B
Lake Ontario Waterkeeper, represented by M. Ertel	CMD 03-H35.9
S. Haskil and H. A. Haskill	CMD 03-H35.8
C. Conti of Port Hope Nuclear Environmental Watchdogs, represented by P. Lawson	CMD 03-H35.10 CMD 03-H35.10A.
Port Hope & District Chamber of Commerce	CMD 03-H35.11